Healthy Living News and Research Update

July 31, 2017

The materials provided in this document are intended to inform and support those groups that are implementing the SelectHealth Healthy Living product as part of their employee wellness program.

You will be receiving similar updates twice each month.

If you would prefer not to receive these regular updates please let me know.

We welcome your feedback and suggestions.

Best Regards,

Tim

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SelectHealth Healthy Living Program Updates

- U.S. National Parks Challenge

Upcoming Wellness Conferences

- HERO Conference week of Sept 11, 2017, Phoenix, AZ

Workplace Wellness

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SelectHealth Healthy Living Program Updates

U.S. National Parks Challenge

The U.S. National Parks Challenge ended on Sunday, July 30, 2017. Be sure to submit your final steps no later than Tuesday, August 1st by 10:00 p.m.

Upcoming Wellness Conferences

- HERO Conferences week of Sept 11, 2017, Phoenix, AZ

What is the "emerging workforce"?

- Millennials are now our majority generation.
- 8000 Baby Boomers are leaving the workforce every day.
- America still rightfully claims world leader status in attracting immigrant brain power and labor.
- Babies born today will grow up during the long anticipated demographic shift to where America's minorities are now the majority.

Such demographic diversity is changing workplace policies, environments, and cultural practices.
How can workplace practitioners best turn these transformations into opportunities for improving health, well-being, and performance?

**Allow us to introduce you to some of the national thought leaders brave enough to confront the issue head-on.**

**Forum Speakers**

**Agenda-at-a-Glance**

Will your voice be added to the conversation?

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**First Annual HERO CMO Summit**

for Chief Medical Officers, Medical Directors and Corporate Executives Advancing Well-being at Work

The CMO's Role in Strategic Use of Data.

What questions and opportunities arise when metrics about employee engagement, happiness, health and well-being, organizational support and business drivers are combined?

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Monday, Sept. 11th, 2017 - 8:00 A.M. to 1:30 P.M.

Arizona Grand Resort & Spa in Phoenix
Join Fellow CMO’s in raising the quality bar through ideation, problem solving and agenda setting. The CMO Summit is hosted by:

- Fikry Isaac, M.D., formerly Johnson & Johnson CMO, Summit Chair
- Kyu Rhee, M.D., IBM CMO
- Ron Goetzel, Ph.D., Johns Hopkins/IBM
- Marleece Barber, M.D., Lockheed Martin CMO
- Dexter Shurney, M.D., M.B.A., M.P.H., Cummins Chief Medical Director
- Wayne Burton, M.D., formerly American Express CMO
- K. Andrew Crighton, M.D., Prudential CMO
- David Shepperly, M.D., Bristol-Myers Squibb Executive Medical Director
- Paul Terry, Ph.D. HERO

Also featuring:

- Michael D. Parkinson, M.D., Senior Medical Director of Health and Productivity for UPMC Health, former president of the American College of Preventive Medicine. He is a retired Air Force colonel who was Associate Director, Medical Programs and Resources in the Office of the Surgeon General.
- Derek Yach, MBChB, M.P.H., Chief Health Officer of Vitality. Previous roles include PepsiCo SVP Global Health and Agriculture Policy, Yale Professor of Global Health, and World Health Organization Executive Director for Noncommunicable Diseases and Mental Health.

See the full agenda

In conjunction with HEROForum17 Sept. 12-14th.

Workplace Wellness

Corporate wellness is having its moment in 2017

July 19, 2017, by Hal Rosenbluth


There’s no quick and easy way to make wellness programs work, but the right formula is simple. (Photo: Shutterstock)

A cloud has been hanging over the corporate wellness industry, in no small part due to an often-cited RAND study which shows wellness programs are having little to no effect on reducing employer health costs.
Findings like this spell bad news for wellness solutions, not to mention for the HR departments that have invested billions in them. Does this mean it’s time to throw in the towel? Hardly.

Reverting to business as usual isn’t a winning strategy. Chronic illness, health costs, and lost productivity are all on the rise. Companies that ignore these issues do so at their peril.

A new study shows 90 percent of respondents want more emphasis on well-being over physical health.

All of the above is why I believe in 2017 the wellness industry is having its moment. While the initial hype behind wellness has led to serious disillusionment, we are now at a pivotal turning point, where thoughtful approaches, as well as some hard-learned lessons, start leading to real results.

Lesson #1: Stop creeping out your employees

All too often, wellness programs alienate employees long before any progress can be made. This usually begins with the health risk assessment -- a deeply flawed but widely used tool. These impersonal assessments ask employees to answer invasive questions like, “How many times do you cry per week?”

Who would want to entrust their employer with that information? And when faced with a penalty for not answering, how can employees buy into the notion that this is really designed to help rather than punish them? The program is over before it has begun.

Lesson #2: You can’t force employees into better health

If your employees believe they are being forced into a program or penalized for not participating, that new Fitbit you’ve rolled out can quickly look like a pair of handcuffs. It’s crucial instead to nudge employees into wanting to participate and be proactive in maintaining or improving their own health.

This level of trust and engagement will never happen in a program where employees feel berated for not losing enough weight or taking too few daily steps. Wellness programs must dig deeper to determine what employees want and what will motivate them to achieve long-term health goals.

It’s important to remember trust goes both ways. Allowing employees to opt-out if they aren’t ready is a leap of faith employers must be ready to take. The focus for these non-participants then becomes determining what they need to feel ready and capable of improving their health.

Sound like a lot of effort? It is. But the alternative is failure. A mandatory, punitive wellness program ultimately won’t create positive engagement or meaningful behavior change.

Lesson #3: Health is more than a gym membership

Gym stipends and other perks such as on-site yoga classes are great. Companies should absolutely offer them if it makes sense for their employees. But workout perks can’t be the final word in a wellness program. Social determinants of health should factor in, too.

If an employee is dealing with anxiety that makes getting out of bed a daily struggle, what good will a gym membership do them? In addition to exercise and nutrition components, a wellness program should fulfill behavioral health needs.
Services such as stress management workshops, financial counseling, and substance abuse treatment can make a world of difference in the health of employees.

**Lesson #4: Culture is king**

What these lessons have in common is that they are all points to consider before rolling out a wellness program in the first place. To that point, there is no value in offering a program until leaders have a thorough understanding of their company’s culture.

I tend to view corporate culture as the iceberg that lives beneath the surface of any wellness program investment. Culture single-handedly determines how much ROI is observable at the top. Companies which lack strong cultures -- where employees feel valued, believe in their company mission, and trust peers and leadership alike -- will continue to see their investments in wellness sink, dragged down by internal dysfunction, fear and mistrust.

There’s no quick and easy way to make wellness programs work, but the right formula is simple. Successful programs accurately reflect employee health needs at the individual level, are built on solid work cultures, and engage employees in a spirit of co-creation. When these dynamics are in place, a wellness program is primed to provide useful, personalized solutions which lead to a healthy return on investment for employees and the company alike.

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**Changing Jobs Could Help Trim Employees’ Fat**

Many overweight employees blame their weight on their jobs but do not take advantage of their workplace's wellness benefits.

**Workforce**

July 14, 2017, by Ariel Parrella-Aureli


Maybe it is time to get that extra workout in after a long day at work.

63% of workers do not take advantage of wellness benefits offered by their employers.

A new survey by CareerBuilder says that 56 percent of U.S. workers think they are overweight and blame their careers for the added pounds. The survey, which sampled 3,420 full-time workers across industries and company sizes in the U.S., found that 2 in 5 workers have gained weight at their current job. Employees blamed sitting at a desk for too long, not having enough time and fatigue after work as reasons why they have gained weight.

Wellness culture in the workforce has long been studied, but the most shocking part of the CareerBuilder survey — which occurs annually — was that 63 percent of workers do not take advantage of wellness benefits offered by their employers, said Rosemary Haefner, chief human resources officer at CareerBuilder. In an email interview, Haefner said studies have shown healthy workers improve the workplace and said employee wellness needs to be addressed more critically.

Seth Serxner, chief health officer and senior vice president of population health at OptumHealth, a health services and innovation company, also sees well-being as a necessity in workplace culture. To get there, he said employers are
challenged with engaging employees to be healthy, which involves strong communication, financial or social incentives, positive experiences and valuable wellness benefits.

Given the heavy reliance and evolution of technology, Serxner said having a consumer-centric approach by way of relevant, personalized apps and other technology will create more incentives for people to work out, eat healthy and change their wellness lifestyles, he added.

“When you start to look at things like getting enough sleep, managing financial well-being, being more mindful and resilient — those are things people absolutely care about,” he said.

Health care costs crowding out employers’ investment in retirement
Are rising cost of benefits contributing to wage stagnation?

July 18, 2017, by Nick Thornton

Health care costs have contributed to the demise of the guaranteed pension. (Photo: Bigstock)

The rising cost of employer-provided health care over the past decade-and-a-half has led to a spike in the cost of overall benefits packages and coincided with a substantial decline in the money invested in retirement packages.

Between 2001 and 2015, employer health care costs more than doubled, rising from 5.7 percent to 11.5 percent of pay, while the cost of providing total retirement benefits dropped from 9.1 percent to 6.8 percent of pay, according to a study from Willis Towers Watson.

The study marks the categorical shift in how employers invest in overall benefits packages.

In 2001, employers spent substantially more money funding retirement packages. Back then, the collective investment in defined benefit plans, defined contribution plans, and post-retirement medical plans accounted for about 60 percent of total benefits investment.

And the cost of health care benefits for active employees accounted for two-fifths, or 42 percent, of total benefit dollars.

By 2015 that ratio had inverted, with the investment in retirement plans dropping to 37 percent, and the cost of health care benefits spiking to two-thirds, or 64 percent of total benefit spend.

While health care inflation has slowed in recent years, it has continued to outpace overall inflation. The health care consumer price index showed a 5.2 percent increase in the cost of health care in 2007, the greatest rate of inflation since 2005.

In 2015, the HC CPI showed health care inflation slowing to 2.8 percent. But that improvement was muted by its relation to overall inflation, which was negative.
Much of employers’ reduced spending on retirement benefits is explained by the ongoing shift from defined benefit to defined contribution plans, Willis Towers Watson’s analysis notes.

But ongoing increases in the cost of health care relative to overall inflation raises the implication that health care costs have motivated, at least in part, the shift away from guaranteed pensions.

And while employers have saved money moving to defined contribution plans, their all-in benefits investment—health care and retirement—rose from 14.8 percent of pay in 2001 to 18.3 percent in 2015.

Willis Towers Watson’s numbers, which were drawn from the firm’s proprietary database of 500 employers with at least 200 workers, also raise the question of how much the cost of benefits has weighed on sluggish wage inflation since 2000.

According to the Bureau of Labor Statistics, the average hourly wage at the end of 2004 was about $18. By the end of 2016 it was just under $24 an hour, or a 33 percent increase.

Meantime, the cost of benefits accelerated at a higher clip, according to BLS data. In 2004, total benefits cost employers $7.50 an hour. By the end of 2016 it was $11 an hour, a nearly 47 percent increase.

Pension costs equal to 401(k) in 2015

While retirement plans costs vary by employer and industry, Willis Towers Watson’s study shows that defined contribution plans don’t necessarily equate to lower costs than defined benefit plans for employers.

In fact, in 2015 the expenses were equal—employer costs for defined benefit and defined contribution plans were 6.1 percent of pay.

But employers who sponsor both a traditional pension and a 401(k) incur considerably higher costs than employers who only offer a defined contribution plan. Providing both costs nearly 10 percent of salary.

Overall retirement costs are also more expensive in industries that tend to offer traditional pensions. In the energy sector, which tends to have higher rates of unionization and consequently more commonly provides DB plans, the average all-in cost of funding retirement benefits averaged 12 percent of pay.

Conversely, retirement costs in the retail sector were about half of that.

HSAs: Users not saving enough to get investment benefits

Majority of account holders spend on basic expenses, such as deductibles, coinsurance and copayments, EBRI report shows

July 13, 2017, by Marlene Y. Satter

The average HSA account holder uses it more as a specialized checking account instead of as an investment account, a new EBRI report reveals. (Photo: Shutterstock)

Holders of health savings accounts are not just underutilizing HSAs by not saving enough in them, they’re also not capitalizing on what could be their greatest feature: investing.

So says a report from the Employee Benefit Research Institute, which reviews the trends in HSA usage from 2011–2016. Its database of 5.5 million accounts, with total assets of $11.4 billion as of Dec. 31, 2016, reveals that the average account holder apparently uses his HSA more as a specialized checking account, instead of as an investment account.

The full report, which looks at account balances, individual and employer contributions, distributions, invested assets and account-owner demographics for the period, finds that although HSAs “offer a valuable tax incentive to set aside money on a tax-favored basis for current or future medical expenses,” the majority of account holders are only using them for basic current expenses, such as deductibles, coinsurance and copayments.

They aren’t going any deeper to take full advantage of the tax preference by contributing the maximum.

Related: HSAs, 401(ks) go hand in hand

A simple change in how plan sponsors present HSAs and 401(k)s could benefit both employers and employees.

But they are using those accounts, since overall, 63 percent of account holders withdrew funds. The average annual amount distributed was $1,771 in 2016, implying an average rollover of $1,151.

Average total contributions—both individual and employer contributions combined—rose from $2,348 to $2,922 between 2011 and 2016. This average was just above the minimum allowable deductible amount for family coverage, but less than half the allowable contribution maximum for family coverage.

It also appears that the longer someone has an HSA, the better his prospects for financial security. Since the rollover feature enables account holders to build up a balance to tackle unexpected major medical expenses, whether now or during retirement, some people are clued in and are putting in enough to grow the balance instead of depleting it each year for current expenses.

That’s indicated by average end-of-year balances, by the year the account was opened, growing, thus showing that financial security increases over time. Accounts opened in 2004, or earlier, had an average account balance at the end of the year of $14,873, while accounts opened in 2016 had an average $1,027 year-end account balance.

In addition, annual 2016 contributions are higher the longer an account owner had an account. Individual contributions averaged $3,658 among those who opened their account in 2005—nearly three times higher than those who opened an account in 2016, at an average of just $1,290.

The report also points out that it’s possible at least some of the low utilization of the investment feature could be due to people with relatively new accounts and not enough time to contribute the required minimum to invest.

In 2016, 11 percent of accounts opened in 2005 had investments other than cash, while just 1 percent among those opened in 2016 had actual investments. And overall in 2016, just 4 percent had investments other than cash.
National Academy of Medicine Goes Public With Efforts to Combat Burnout

The academy hosted an open meeting to discuss ways to be kinder to medical practitioners and help them offer better care.

July 14, 2017, by Steve Sternberg, Senior Writer

Tufts Medical Center nurses march on Washington Street in a picket line in front of the hospital as they begin a strike in Boston on Wednesday. (John Tlumacki/The Boston Globe via Getty Images)

The National Academy of Medicine called upon the public on Friday to help shape its ambitious plan to combat burnout among doctors, nurses and other health workers.

At an open meeting at the organization's headquarters in Washington, academy President Victor Dzau described outside input as vital in shaping a campaign to change the culture of medicine to be kinder to its practitioners and help them provide better care.

[RELATED: Declaring Doctor Burnout a 'Health Crisis,' Hospital CEOs Urge Action]

"Today is the first stage," Dzau said. "We're going public with this."

The conference was the latest held by the NAM-organized Action Collaborative on Clinician Well-Being and Resilience, launched in January. The initiative has grown out of the organization's 20-year-old push, beginning with its landmark report, "To Err Is Human," to heal a health system that it says overburdens practitioners, breeds inefficiency and often results in low-quality, error-prone care.

Studies suggest that more than half of the nation's doctors are experience one or more symptoms of burnout, more than twice the prevalence in other occupations. At least a third of the nation's 2.6 million hospital nurses report emotional exhaustion and 18 percent suffer from depression, compared with a national prevalence of 9 percent. Their struggles have a profound impact on the care they provide, the studies show, significantly increasing the risks of medical errors.

The problem, the focus of a U.S. News special report published in September 2016, has deep roots in health care. It has arisen from a cascade of changes that began decades ago with the rising complexity of medicine; a loss of patients' trust in doctors and nurses; a shift in authority from physicians to the corporations that now control much of health care; multiplying demands for documentation and performance improvement.

"The days of Marcus Welty, M.D., and Norman Rockwell seem like a very long time ago," said Dr. Marc Moss, of the University of Colorado School of Medicine, the session's keynote speaker.

Moss, a lung specialist, says that the problem is a "silent epidemic" in intensive care units, where at least 50 percent of physicians exhibit symptoms of burnout. Nearly 80 percent of ICU nurses suffer from some form of psychological distress, Moss said, resulting from mounting grief from the constant loss of terminal patients and the moral questions that arise when care is just as likely to prolong a patient's suffering as bring about his or her recovery.
Many nurses, Moss said, are surprised to find that others are enduring the same high levels of distress that they are. Because so many suffer in silence, they believe that something is wrong with them. These high rates of burnout prompt scores of nurses to leave nursing, with 3-year turnover rates ranging from 30 to 150 percent.

High turnover rate also boost hospital costs, adding as much as $1.5 million per year to the cost of running a 40-bed ICU staffed with 100 nurses, Moss said.

Much of the discussion focused on the initiative’s mission and how it will be carried out, which includes further research, drawing up a conceptual framework for organizing the results, and examining the constellation of factors – from clunky electronic health records to bad management and toxic workplaces – that contribute to the problem.

Fifty-five organizations, including medical professional societies, governmental agencies and industry groups, have signed up to join the quasi-governmental think tank in the effort.

Speakers also described programs aimed at providing some measure of relief. One, an elective medical school curriculum called "The Healer’s Art," is now taught in 113 medical schools in 16 countries. It's designed to counteract the rigorous training that robs medical students of their sensitivity and compassion.

"We have to admit here that we are teaching burnout to our medical students," said Dr. Michael Rabow, director of the Center for Research on the Healer’s Art at the UCSF School of Medicine, noting that medical students inevitably are swept up by what has been called "the hidden curriculum," the "unwritten, unspoken messages" about how to suppress emotion and survive as a doctor.

Others experts described mindfulness training for nurses and a program to assist doctors whose patients have suffered poor outcomes from care.

Solving these problems won't be easy, said Dr. Thomas Nasca, CEO of the Accreditation Council for Graduate Medical Education and the initiative's co-chair. "None of what you have heard this morning is a finished product," Nasca said. "This is a campaign we're in the earliest stages of. It's going to be a long haul for all of us."

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**Financial fitness is the secret sauce for Original Rudy’s Country Store and Bar-B-Q**

*ebn*

July 19, 2017, by Paula Aven Gladych


Texans take their barbecue seriously, and The Original Rudy’s Country Store and Bar-B-Q takes the financial welfare of its employees seriously. This is why the 27-year-old business, which has three locations in San Antonio, wanted to make a difference in the lives of its 134 employees and their finances.

About two years ago, the restaurant’s president, Mike Barker, started offering Dave Ramsey’s SmartDollar program, a financial wellness program that helps people learn the basics of money, including how to budget, how to set aside funds in an emergency account and how to pay down debt.

“We decided to offer this program to help them figure out where their money is going; help them make a budget,” says Sandra Devol, Rudy’s human resources director. “Most of our team members didn’t know how to make a budget. They
were living paycheck to paycheck. They had payday loans. We paid a great wage so there was no reason they were still living that way. We wanted to educate them.”

Many of Rudy’s employees have been with the company for 14 years or longer, and they all make an hourly wage, which makes financial assistance and education all the more important.

In fact, Rudy’s took the SmartDollar program one step further than most companies that offer it — it makes it mandatory for all employees to participate, which means it has nearly 100% participation in the program.

The program was not well received at first, Devol says, because people have a hard time talking about their finances, but as the program progressed she has seen a big difference in employees’ financial behaviors. It is all about taking baby steps to make a difference overall.

Dave Ramsey’s seven baby steps are: get a $1,000 beginner emergency fund; pay off all debt except for your home; build your emergency fund up to three to six months of expenses; invest 15% of your household income into Roth IRAs and pre-tax retirement plans; start a college fund for your kids; pay off your home early; build wealth and give.

When Rudy’s first rolled out the program, the company’s owner raffled off $1,000, which would be split between four of the restaurant’s team members who were actively participating in the program by budgeting or actively paying down their debt.

The company offers other incentives throughout the year to keep employees interested and on track, she says. It offers back to school cash to help people buy clothes or supplies for school, cash for Christmas and scholarships “so they know that if they’re engaged in this program they’ll get more hours and money from the company,” Devol says.

And although employees weren’t excited about the program at the beginning, they have started opening up about their personal financial issues as part of the program. They talk about their personal development and what steps of the program they are in and how they can help each other get better.
“There are still team members struggling to make budgets, but other team members will help them out,” she says. “They are more open to discuss where they are at with each other and with the company and with the president and vice president. There’s no judgment. We want to serve them because it is part of our core values.”

Facing financial fears

Brian Hamilton, vice president of SmartDollar, says that the three biggest emotions around money are fear, shame and cynicism. The approach Dave Ramsey and other financial coaches use is to help people get past the fear, shame and guilt and realize that anybody can get a better handle on their financial lives.

Devol says that when Rudy’s first launched the program she and other administrators stood up and talked about their own financial struggles, saying that “we are all in the same journey together.”

Rudy’s also offers Dave Ramsey’s EntreLeadership program, which is an online coaching program for small business owners and entrepreneurs to help them learn to grow themselves, their teams and their profits, and Financial Peace, which teaches the same financial principles as Dave Ramsey’s other programs but backed with Christian biblical teachings. Rudy’s offers Financial Peace in both English and Spanish.

Hamilton says that Rudy’s is the perfect-sized company to offer these financial wellness programs because it isn’t so big that it can’t organize classes around its employees’ varied schedules. The program is offered at all three Rudy’s locations in Texas.

“As companies get larger, some of those logistical challenges are more problematic,” Hamilton says, noting SmartDollar is a good fit because the program can work well in a classroom as well as online.

Rudy’s does offer the program in a classroom setting and the company’s scheduling department makes sure that all employees can make a class “because it is so important to us,” Devol says.

So how successful has the program been?

Hamilton says that the 127 Rudy’s employees who have engaged in the SmartDollar program have paid off $522,000 in debt and saved $568,000 over two years.

“In financial wellness we see a lot of financial stress come to work with people, which leads to productivity drop offs, absenteeism and higher medical costs,” Hamilton says.

Along with financial wellness, Rudy’s offers a 401(k) plan and a wellness program for healthy eating.

“Mr. Barker has said that we as an organization, we might sell barbecue but we are in the business of developing our people and the barbecue is going to sell itself,” Devol says. “Without developing our people, we are not serving anyone.”

U.S. falling behind other countries in retirement security

Employee Benefit News, July 25 2017, by Paula Aven Gladych

The United States is slipping when it comes to retirement security.
The U.S. dropped three notches to No. 17 out of 43 countries in a global ranking of retirement security, according to the fifth annual Global Retirement Index ranking from Natixis Global Asset Management.

A number of factors negatively impacted America’s score, including increased longevity, pension fund shortfalls, old-age dependency and related pressure on government resources. One of the biggest takeaways from the report is that the U.S. spends more than most countries on healthcare but is seeing a drop in its life expectancy. In other words, it isn’t getting the best bang for its buck.

Canada ranked No. 11, while Norway was No. 1 and Switzerland was No. 2. The ranking creates an overall retirement security score for each country from 18 performance indicators that address finances, healthcare, material well-being and quality of life. Countries also are ranked by those four sub-indexes.

Dave Lafferty, chief market strategist for Natixis Global Asset Management, says that when one looks at the country’s prospects for retirement security, they have to keep the long-term prospects for economic growth in mind because “retirement is a process of deferral, putting off consumption today for consumption in the future.”

The better the economic growth is, the better people’s retirement savings portfolios do.

“Since the financial crisis, it is slow growth by historical standards,” Lafferty says, but it is slowly picking up steam. Europe also is picking up steam and emerging markets are getting their act together, he adds. Fears of a slowdown in China have faded a little bit.

“There are limitations in potential GDP. Labor force growth is not enormous and productivity is not high,” he says. Jobs have been picking up a little bit but their impact on the economy won’t be much if the country can’t boost its productivity.

Phillippe Waechter, head of economic research for Natixis Asset Management, agrees that there is low productivity momentum in the U.S. and Europe. He points out that in the 1960s there was very high productivity growth so it was easy to create a retirement that was rich for everyone.

“Now it’s more complicated,” Waechter says. “We have very low productivity growth of 0.5% in most industrial countries when you look at the trends. We are not able to transfer revenues from the present to the future and that’s the main point.”
Dependency ratios are quite poor in the U.S. and Japan, according to Lafferty. There are too many people getting older and not enough young people following behind them supporting their longer life in retirement. If the dependency issue didn’t exist, longer life spans would not be a problem, he says, but the two together create a real problem.

Unfortunately, countries can’t change their birth rates overnight to help boost population to help resolve both the dependency ratio and longevity problems. That’s why many countries in Europe have turned toward immigration, trying to attract young people from other countries to move there and help boost their economies.

Italy and Germany have been confronting these same issues, Waechter says. Germany has offered free college education to anyone who wants to move to Germany and take advantage of it. Immigration is one way to boost productivity. In countries like Japan, which are against immigration, they will have to boost productivity through innovation, which is complicated, Waechter says.

Raising the retirement age is one solution to help boost retirement security. Another is to require employees to put money away in their pension plans, not solely rely on employers to fund them.

Given the fact that people are living longer, Waechter says that countries should consider extending the retirement age to 70. Some people spend more years in retirement than they did in the workforce.

Lafferty points out that older people have experience and knowledge going for them and are therefore more productive than their younger counterparts. Keeping on older, more experienced workers, could be an advantage, especially when it comes to mentoring younger workers and passing on institutional knowledge.

He adds that Social Security was introduced when people were living to their early 60s. Now people are living 20 years longer so it makes sense to raise the retirement age.

“The real problem with that is it is not a real vote getter when you’re out campaigning, to tell people they have to work longer,” he says. “It is not a great political solution.”

People live longer when they feel more productive, he says. “As people work longer and maintain their productivity, they maintain their vibrant lifestyle and live longer.”

Why there needs to be a ‘financial fitness revolution’

Employee Benefit News, July 26 2017, by Paula Aven Gladych

It’s an age-old problem when it comes to retirement: There’s a long-term savings gap in the global retirement system that’s making it hard for many people to live healthy and happy lives in their post-work years.

“[The savings gap problem] is one that’s been long in the making and gradually gets worse and worse,” says Jacques Goulet, president of health and wealth at Mercer.

But the good news is there might be some new solutions to fix it. In its new report, “Bold ideas for mending the long term savings gap,” consulting firm Mercer has put forth proposals to improve the $70 trillion global retirement savings deficit.
One idea? Starting “a consumer revolution in financial fitness” by giving employees steady access to financial tools and advice.

“We are putting more and more ownership on the shoulders of individuals, whether it is an employer that has converted ... from defined benefit to defined contribution, or whether it is the government cutting back on benefits or pushing the retirement age off,” Goulet says, adding that it’s now every person’s responsibility to take the reins of their own financial wellbeing, though most are not well-equipped to do that. It’s particularly difficult to figure out how much money a person will need in retirement.

The industry can continue to try and educate people by giving courses in financial literacy, “but my experience is that it does not work,” Goulet says. “That is why we come back to the revolution in financial fitness. What we need to do is engage the consumer in experiences that are a lot more positive, a lot more interesting, that allows them to engage in a simple manner, that they are able to track their progress and they get rewarded along the way.”

Financial tools play a big part. And those tools offered to employees must be high quality because “the consumer or individual is not an economics, demography or financial expert,” Goulet says. “It is not always easy to understand where there are good vs. bad products. Employers and the government are well-positioned to do the vetting.”

**Mandate retirement savings?**

One thing the U.S. retirement industry should consider is making retirement savings compulsory, he says.

“What some countries in the world do that. That overcomes the inertia that might exist when savings is voluntary,” he says.

That could be a hard sell in the U.S., Goulet says, because mandates go against many people’s values “which is totally understandable and agreeable.”

Mercer’s Melbourne Global Pension Index, which the company puts out annually, ranks countries around the world on the strength of their pension systems, according to different criteria. Those that score well have features in their systems that are compulsory, Goulet says. They make savings compulsory and when people enter into retirement, they ensure that they draw down their savings through lifetime income as opposed to taking it in a lump sum.
Another retirement concept that needs to be reevaluated is the concept of a retirement period.

“We need employers and governments to recognize the value of older workers,” Goulet says. “They have experience, they can do mentorships. They bring a lot of value and they are the fastest-growing part of the population, so even in terms of how they will drive the economy.”

He believes that the country needs to embrace the fact that many people would like to continue to work longer. They may not want to continue working the same long schedule or as intensely as they have in the past, but they might be happy with flexible work arrangements if employers are willing.

Some of the ideas put out by Mercer would be well-received in some countries and not well-received in others.

“Should we shy away from delicate debates? Probably not,” he says. “It may lead to different outcomes in different countries. The sheer size of this challenge requires people to be open and willing to look under a bunch of different rocks to see what could be learned from the experience of others.”

**Job insecurity negatively affects employees’ health**

*ebn*

Employee Benefit News, July 25 2017 by Brookie Madison


Employees are experiencing chronic stress response to job uncertainty, which in turn impacts them both physically and psychologically — while also reducing productivity for the employer.

Job-insecure individuals reported work loss days of greater than two weeks, bed-ridden days of greater than two weeks, worsening of general health and greater work-family life imbalance in the past 12 months, according to a new study from Ball State University’s College of Health.

Things such as layoffs, plant closings, outsourcing, mergers, replacement of full-time permanent positions with short-term contracts could all cause employees to feel insecure about their jobs. Those who experience job insecurity are more likely to be obese, sleep less than six hours a day and smoke every day, as well.

“What happens is people either misperceive or there is a real threat to someone’s job and that keeps them in a state of stress and that stress, when it’s chronic, becomes anxiety, depression. Once people have those disorders, you can see physical signs of anxiety,” says BSU’s health education professor and lead author, Jagdish Khubchandani.

Long-term signs of anxiety include ulcers, weight gain, smoking and drinking, diabetes, hypertension, chest pain and coronary heart disease. Emotional disturbances, reduced organizational trust, increased intention to quit, lower job performance — including tardiness and absenteeism — are all ways job insecurity influences an employee’s mental state.
“When people have gone from mentally not on the job to physically not on the job, people start quitting because they feel insecure and they’re always running for different types of jobs. That hurts the employers because it’s a higher amount of turnovers. Then, you have to bring in someone new, train them again, and that’s a loss of productivity,” says Khubchandani.

Job insecurity is higher in males, African-Americans, Hispanics and those that are divorced or separated and those paid by the hour, while those with government jobs and employees of large organizations reported much lower instances of job insecurity. People with lower educational attainment and annual household incomes were more likely to perceive job insecurity than those with higher education and household incomes.

Relief
Flexible work hours, management of shifts, good communication and defining the role of people are ways that employers can relieve workplace stress. Khubchandani also suggests companies offer counseling services, lifestyle and wellness coaches to employees.

“Employers need to learn that they need to invest in employees. That investment doesn't have to be health insurance only. It can be investment on professional development, stress management, anger management and good communication,” says Khubchandani.

Khubchandani suggests companies should put more effort toward preventative care by periodically having screenings of employees’ BMI, tobacco-use habits, alcohol habits and stress management.

“Each organization should look at healthcare costs at the end of the year and then identify what are the top five causes of why they are paying so much. Then start negotiating with the benefits industry,” says Khubchandani.

The study consisted of 17,441 working adults, where 75% were white, 51.5% female, 73.3% worked for a private company and 82.6% were 25 to 64 years old.

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**Community Health**

**Diffusion Of Community Health Workers Within Medicaid Managed Care: A Strategy To Address Social Determinants Of Health**

HealthAffairs Blog
Clinic notes from a Community Health Worker:

A 63 year old client and her 70 year old husband had been evicted from their apartment while they were hospitalized and were living in a motel. I was able to assist the elderly couple in finding a new apartment... I’ve helped other clients find housing, jobs, and medical homes, no longer living on the streets....Another client has been sober for one month, attending church which helped her through the trauma of being a victim of human trafficking...We then helped a woman escape a violent relationship and obtain affordable legal help. We...helped [her son] grapple with his own rages from witnessing family violence while obtaining for him school supplies and new clothing.

Social determinants of health (SDH), including where people live, their economic security, their educational attainment, their access to affordable and nutritious food, and their degree of social inclusion, have a greater impact on health than does the health care system. A recent study surveying patients attending primary care clinics revealed that nearly half experienced adverse social determinants but their providers were unaware because they didn’t ask questions about SDH. Yet, despite the importance and prevalence of adverse SDH in the patient population, our predominant fee-for-service incentive system strongly favors investments in individually focused “downstream” medical care at the expense of population-focused “upstream” prevention and social services, where adverse SDH could be addressed.

Addressing SDH in clinical settings under the current incentive system is a challenge. While primary care providers recognize that social needs are as important as medical needs, they feel ill-equipped to address them. And resources available to them, even in Patient-Centered Medical Homes, are generally insufficient to address the enormity of adverse social determinants once uncovered. Is there a viable health service approach in which “downstream” resources are re-allocated “upstream” to address social needs?

Community Health Workers and Medicaid Managed Care: A New Approach

We found an answer in an expanded role for community health workers (CHWs). They are culturally and linguistically competent individuals from the communities served who focus on identifying and addressing adverse social determinants of health for patients. CHWs are ubiquitous in poor villages of many developing countries, in the US-Mexican Border region, and within Native American communities. But they are usually based out in communities, mostly unknown to the health care system in the U.S.

The integration of CHWs into the health care system in New Mexico began almost a decade ago when a relationship between the University of New Mexico Health Sciences Center (UNMHSC) and the New Mexico Medicaid system was born. As a capitated managed care system, the Medicaid program contracted with insurance companies, which saved money by keeping Medicaid patients healthy and out of hospitals and emergency rooms. However, many of their newly insured Medicaid members, who were automatically assigned to insurance companies and unfamiliar with health insurance, continued to use the emergency room as a primary care provider (PCP) and ran up costs for preventable
emergency department visits and hospitalizations. One Managed Care Organization (MCO) wanted to offer case management to these high-user enrollees but could not find many of them. The MCO approached UNMHSC for help.

The university hired a group of CHWs who quickly found most members because of their intimate knowledge of the community and the trust communities had in them. Surprisingly, the CHWs discovered most members they found didn’t need to meet with the MCO’s case managers. The CHWs in the field could handle members’ needs, which included understanding their benefits, learning the value of having their own PCP, and help with transportation to their assigned clinics. The clinics provided access to food pantries and help with health literacy.

The prevalence of adverse SDH was gauged among patients attending primary clinics at the University of New Mexico and First Choice Community Healthcare, a Federally Qualified Health Center in Albuquerque, NM. Local CHWs helped design a questionnaire asking about the 11 most common social determinants of health. Of the more than 3,000 consecutive patients surveyed, approximately half had at least one adverse social determinant and half of those had more than one. These problems were virtually unknown to the clinic, for they are typically not addressed in a routine clinical encounter.

Word spread to the other MCOs about the value of clinic-integrated CHWs working on social determinants. All reached out to the University of New Mexico for assistance. Bringing CHWs into clinical settings was a challenge, for they have neither diplomas nor certificates and had no formal training with other health professional students. But their presence sold itself to the health care team, which came to rely on the CHWs’ contributions. What’s more, the CHWs taught other health team members about social determinants. As the use of CHWs diffused horizontally across the other four MCOs serving New Mexico’s Medicaid program (known as Centennial Care), interest in the role of CHWs on the health care team moved vertically up to the leadership of the New Mexico Human Services Department’s Medicaid Assistance Division. Medicaid was interested in expanding the model and disseminating its findings across the state to other health care systems.

The NM State Medicaid Division invested directly in the development of the model, and in technical assistance to those organizations implementing the integration of CHWs into their clinical settings. Building upon lessons learned from CHW interventions with high-risk patients, the Integrated Primary Care and Community Support (I-PaCS) initiative was born. The initiative continued to provide very intensive intervention for those with the highest health needs and highest costs. At the same time, it provided comprehensive individual and family support for all patients in poor health (not just those with adverse social determinants) and adopted a population health strategy for the entire population in which CHWs intervened at each level of care, aiming to prevent health status from worsening.

**Figure 1: Levels and types of CHW intervention in Medicaid Managed Care Population**
While the cost of health care skyrockets for those in poor or very poor health, the top 5 percent of patients with the worst health account for 50 percent of the costs. A single-minded focus on that population can reduce costs in the short run but does little to prevent enrollees with neglected risk from becoming high cost in the future. So, in the I-PaCS model, specific interventions to the left of the curve include: screening patients for the social determinants of health, connecting patients with resources to address those social determinants, assisting patients to navigate health and social services systems, and empowering patients to be active members in the process. Each patient is screened for adverse social determinants; those that screen positive are referred to the community health worker for services and depending on their health and social needs of the patient, receive varying levels of CHW support. All the data collected from the screening tools is then compiled and used in summary form to better understand the broad social issues impacting the community served by the clinic, informing a broader community health improvement strategy led by local health extension, community organizations, and those working on policy efforts.

**Diffusion of innovation**

The diffusion of clinically integrated CHWs throughout New Mexico’s Medicaid system was sustained by incorporating the cost into the capitated payment to the MCOs. Moreover, hiring and incorporating CHWs into clinical care became a required component within the contracts of state Medicaid with MCOs. Acknowledging the success of the CHW model, in 2017, New Mexico Medicaid required all managed care organizations to increase their CHW contacts with clients by 20 percent. Because three of the four MCOs are national, the CHW model begun in New Mexico has been deployed in 12 states. This has also led to interest from Federal granting agencies including the Agency for Healthcare Research and Quality (AHRQ), the Health Resources and Services Administration (HRSA), and the Centers for Medicare and Medicaid Services (CMS).

AHRQ’s EvidenceNOW initiative funds seven regional collaboratives which help small-to-moderate sized primary care clinics implement evidence-based cardiovascular disease prevention guidelines in their practices. Based on the New Mexico group’s theory that adverse social determinants of health hinder patient’s adherence to guidelines, many of
these practices also incorporate screening for these determinants, employing CHWs to address discovered needs. HRSA’s Health Careers Opportunity Program in New Mexico supports the decentralized training of CHWs in regional community colleges by subsidizing the tuition and fees of students enrolled in the state’s approved CHW certification curriculum. CMS’ Accountable Health Communities is funding regional consortiums which pair health centers with social service agencies to screen patients for health-related social needs, determining whether addressing these needs improves care quality and reduces cost. New Mexico’s Accountable Health Communities consortium is deploying CHWs to screen for and intervene in addressing these discovered needs and in this way, pairing social services with health centers.

The integrated CHW model has also spread to different types of clinical sites in New Mexico. Pilot programs have placed CHWs in urban hospital emergency rooms, to better link patients with primary care providers and needed local resources to address their social needs. In addition, rural hospitals in resource-poor areas of the state are looking to implement this model, to reduce costs and improve health outcomes. New Mexico’s Bernalillo County has funded two innovative programs based on an even broader use of CHWs — one to reduce child abuse and the other to reduce the high rate of recidivism of inmates released from the county jail.

Drivers of the innovation and its spread

New Mexico’s expansion of its Medicaid program under the ACA brought with it inherent challenges because the state suffers from extreme health professions shortages and extreme poverty. At the same time, Centennial Care contains a strong population health management requirement. These challenges acted as a catalyst, peaking the interest of the MCOs in innovative models that could improve health outcomes while lowering costs, without relying solely upon costly licensed professionals who are in short supply.

These catalytic challenges drove the model and its diffusion toward success. Another key reason for its successful diffusion was that it included a broad set of stakeholders from the beginning. The state Medicaid office, MCOs, and health clinic providers and administrators worked together to conceptualize and design the more integrated CHW model. This was facilitated by a pre-existing, long-term partnership between MCOs and the State Medicaid Office.

Finally, a key external driver to program development was the statewide and national interest in the role of community health workers and the development of certification programs, standardized roles, and dissemination of innovative programs that deployed CHWs in promising ways. Economically deprived rural and urban communities in New Mexico became highly supportive of “their” CHWs. Not only were CHWs seen as community advocates within large health systems, but their pay range brought good jobs to poor communities. In New Mexico, an increased interest in training and certifying CHWs led to more sustainable employment for this workforce.

A health system that ignores the social needs of patients does not just miss an opportunity to improve patient health but also places an avoidable burden on primary care providers. Screening for social determinants at the beginning of every visit uncovers important needs otherwise missed. Immediate referral to a CHW, skilled in assisting the patient in addressing such uncovered needs, expands a primary care clinic’s ability to care for patients.

As the value of CHWs became recognized within the health care system, a growing variety of employers emerged. In addition to Medicaid Managed Care organizations, hospitals, and community health centers, tribal communities and counties now hire CHWs, providing an expanding, sustainable financial resource. Initially focused on serving primary care practices, CHWs now provide services in emergency departments, newborn nurseries, mental health centers, and long-term care facilities.

CHW employment itself addresses a major social determinant — poverty. Most CHWs have only a high school diploma or GED. Yet, they are of such recognized value that their pay is double the state’s minimum wage, bringing needed, good
paying jobs to economically depressed communities. The drivers of the emergence of CHWs as a growing force within health care included a recognition that unaddressed adverse social determinants of health cost health care systems dearly; an acknowledgment that adverse social determinants cannot be addressed adequately by traditional, "downstream" investment alone; an understanding that the effectiveness of CHWs in reducing high health care costs are best achieved by addressing needs of the whole patient population rather than just the highest users; and finally, the advent of a growing alliance between different health-related stakeholders including government, payers, employers, and communities. The above elements created fertile soil for the growth of CHWs within Medicaid Managed Care and within the nation’s health care system.

Authors’ Note

The development and implementation of this clinic-integrated CHW model took place through a collaboration between the University of New Mexico Health Sciences Center and the Southwest Center for Health Innovation. Support from the New Mexico Human Services Department Medicaid Assistance Division, Blue Cross Blue Shield of New Mexico and Molina Healthcare of New Mexico made this collaboration possible. Special thanks to the clinical sites that piloted this model at University of New Mexico Hospital, Hidalgo Medical Services, and First Choice Health Care.

More than 8.3 billion tons of plastics made: Most has now been discarded

ScienceDaily

Date: July 19, 2017
Source: University of Georgia

Summary: Humans have created 8.3 billion metric tons of plastics since large-scale production of the synthetic materials began in the early 1950s, and most of it now resides in landfills or the natural environment, according to a study.
Humans have created 8.3 billion metric tons of plastics since large-scale production of the synthetic materials began in the early 1950s, and most of it now resides in landfills or the natural environment, according to a study published in the journal Science Advances.

Led by a team of scientists from the University of Georgia, the University of California, Santa Barbara and Sea Education Association, the study is the first global analysis of the production, use and fate of all plastics ever made.
The researchers found that by 2015, humans had generated 8.3 billion metric tons of plastics, 6.3 billion tons of which had already become waste. Of that waste total, only 9 percent was recycled, 12 percent was incinerated and 79 percent accumulated in landfills or the natural environment.

If current trends continue, roughly 12 billion metric tons of plastic waste will be in landfills or the natural environment by 2050. Twelve billion metric tons is about 35,000 times as heavy as the Empire State Building.

"Most plastics don't biodegrade in any meaningful sense, so the plastic waste humans have generated could be with us for hundreds or even thousands of years," said Jenna Jambeck, study co-author and associate professor of engineering at UGA. "Our estimates underscore the need to think critically about the materials we use and our waste management practices."

The scientists compiled production statistics for resins, fibers and additives from a variety of industry sources and synthesized them according to type and consuming sector.

Global production of plastics increased from 2 million metric tons in 1950 to over 400 million metric tons in 2015, according to the study, outgrowing most other human-made materials. Notable exceptions are materials that are used extensively in the construction sector, such as steel and cement.

But while steel and cement are used primarily for construction, plastics' largest market is packaging, and most of those products are used once and discarded.

"Roughly half of all the steel we make goes into construction, so it will have decades of use -- plastic is the opposite," said Roland Geyer, lead author of the paper and associate professor in UCSB's Bren School of Environmental Science and Management. "Half of all plastics become waste after four or fewer years of use."

And the pace of plastic production shows no signs of slowing. Of the total amount of plastics produced from 1950 to 2015, roughly half was produced in just the last 13 years.

"What we are trying to do is to create the foundation for sustainable materials management," Geyer said. "Put simply, you can't manage what you don't measure, and so we think policy discussions will be more informed and fact based now that we have these numbers."

The same team of researchers led a 2015 study published in the journal Science that calculated the magnitude of plastic waste going into the ocean. They estimated that 8 million metric tons of plastic entered the oceans in 2010.

"There are people alive today who remember a world without plastics," Jambeck said. "But they have become so ubiquitous that you can't go anywhere without finding plastic waste in our environment, including our oceans."

The researchers are quick to caution that they do not seek the total removal of plastic from the marketplace, but rather a more critical examination of plastic use and its end-of-life value.

"There are areas where plastics are indispensable, especially in products designed for durability," said paper co-author Kara Lavender Law, a research professor at SEA. "But I think we need to take a careful look at our expansive use of plastics and ask when the use of these materials does or does not make sense."

Story Source: Materials provided by University of Georgia. Original written by James Hataway. Note: Content may be edited for style and length.

Lifestyle Medicine News

Almost Half the US Population Has Diabetes or Its Precursor

Medscape

News & Perspective, July 19, 2017, by Pam Harrison

Almost one in 10 US adults has diabetes, while more than one in three has prediabetes, indicates the latest National Diabetes Statistics Report by the Centers for Disease Control (CDC).

As of 2015, 30.3 million adults living in the United States or 9.4% of the population have diabetes, according to the new report.

Moreover, nearly one in four adults living with diabetes, or 7.2 million American adults, are not aware that they have it.

Another 84.1 million have prediabetes, the report indicates.

And nine in 10 adults with prediabetes are not aware they have a condition that places them at high risk to progress to type 2 diabetes within 5 years, according to a statement by the CDC.

This is important, as the authors point out, because individuals with prediabetes can cut their risk of type 2 diabetes in half by being more active and making healthier food choices.

On the other hand, the rate at which new cases of diabetes are being diagnosed remains steady, with an estimated 1.5 million new cases of diabetes being spotted in American adults in 2015.

"Although these findings reveal some progress in diabetes management and prevention, there are still too many Americans with diabetes and prediabetes," Brenda Fitzgerald, MD, director of the CDC said in the statement.

"Now, more than ever, we must step up our efforts to reduce the burden of this serious disease," she added.

Native Americans Have Double the Risk of Diabetes Compared With Whites

The National Diabetes Statistics Report, which comes out approximately every 2 years, was published online July 18, 2017.

As the report notes, the likelihood that an individual will be diagnosed with diabetes increases with age and depends on race or ethnicity.
Of adults aged 18 to 44 years, only 4% were diagnosed with diabetes in 2015.

This rate increased to 17% for individuals aged 45 to 64 years, while for adults aged 65 years and older, 25% were diagnosed with diabetes in 2015.

Diabetes rates were also almost twice as high, at 15.1%, among Native Americans and Alaska Natives compared with non-Hispanic whites, at 7.4%, the report indicates.

Rates of diabetes were 12.7% among non-Hispanic blacks, 12.1% among Hispanics, and 8% among Asians, the authors add.

Diabetes prevalence also varied according to education level: 12.6% of adults with less than a high school education had diabetes compared with 7.2% of those with more than a high school education.

More men, at 36.6%, had prediabetes than women, at 29.3%, although rates of prediabetes were similar across racial and ethnic groups, as well as education levels.

The highest rates of established and new cases of diabetes occurred in the southern and Appalachian areas of the United States.

Cost of Treating Diabetes Is Extremely High

The CDC report also points out that the cost of treating diabetes in the United States is extremely high, at $245 billion, taking into account total medical costs as well as lost work and wages for those with diabetes.
The cost of caring for individuals with diabetes is more than twice the cost of caring for those without diabetes, and the mortality risk is also 50% greater for those with compared to those without diabetes.

Of all diabetes cases diagnosed in American adults, 95% were type 2 diabetes, but in 2011 and 2012, more than 5000 youth were diagnosed with type 2 diabetes in each of those years.

"Consistent with previous trends, our research shows that diabetes cases are still increasing although not as quickly as in previous years," said Ann Albright, PhD, RD, director of the CDC's division of diabetes translation in a statement.

"[But because] diabetes is a contributing factor to so many other serious health conditions, by addressing diabetes, we limit other health problems such as heart disease, stroke, nerve and kidney diseases, and vision loss," she concluded.

The authors have reported no relevant financial relationships.


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**Nearly One in Five American Teens Has Prediabetes or Diabetes**

*Medscape*

News & Perspective, July 19, 2016, by Miriam E Tucker


Nearly one in five American teenagers has an abnormal glucose level, according to new government data.

The findings were published in a research letter in the July 19 issue of the Journal of the American Medical Association by Andy Menke, PhD, an epidemiologist with Social & Scientific Systems (under contract to the US National Institutes of Health) and colleagues.

Using both interview and examination results from 2606 adolescent participants aged 12 to 19 in the 2005–2014 National Health and Nutrition Examination Survey (NHANES), investigators found a nearly 1% prevalence of diabetes — more than a quarter undiagnosed — and a nearly 18% prevalence of prediabetes.

NHANES did not distinguish between type 1 and type 2 diabetes.

Dr Menke told Medscape Medical News that although over 80% of teenagers with diabetes have type 1, "We found a relatively high percentage of young people were unaware of their diabetes, as well as a high prevalence of prediabetes....These youth are likely predominantly people with type 2 diabetes or, for those with prediabetes, at high risk for type 2 diabetes....Our findings suggest that adolescents in the United States are developing type 2 as well as type 1 diabetes."

Both prediabetes and undiagnosed diabetes were more common in male, non-Hispanic black, and Hispanic teens compared with females and non-Hispanic whites.

However, Dr Menke noted, "Our study was not designed to identify risk factors for undiagnosed diabetes or prediabetes in adolescents. Further research needs to be conducted to better identify those adolescents who will benefit from diabetes screening."
In the interim, he said, "physicians may need to better screen the youth at high risk for diabetes based on the guidelines for their adult counterparts and to educate people on the risk factors for type 1 and type 2 diabetes."

Prediabetes, Undiagnosed Diabetes Higher in Minority Teens

NHANES is a series of 2-year stratified, multistage surveys representative of the general civilian US population. It includes in-person surveys in which participants are asked if they had ever been diagnosed with diabetes by a health professional. In addition, there are examinations involving a 75-g oral glucose tolerance test, fasting blood glucose, and HbA1c testing. Diabetes and prediabetes were defined by standard criteria.

"To our knowledge, our study is the first to use all three American Diabetes Association recommended markers to diagnose diabetes in a nationally representative study of US adolescents," Dr Menke noted.

Of the 2606 adolescents included, 62 had diabetes — of whom 20 were undiagnosed — and 512 had prediabetes. The weighted prevalence of diabetes was 0.8%, of which 28.5% was undiagnosed.

The prevalence of prediabetes, 17.7%, was "higher than we anticipated," Dr Menke said.

Prediabetes was more common in males than females (22.0% vs 13.2%).

Compared with white adolescents, in whom the percentages with undiagnosed diabetes was 4.6% and prediabetes was 15.1%, higher rates were seen among black participants (49.9% undiagnosed diabetes and 21.0% prediabetes, respectively) and Hispanics (39.5% and 22.9%).

Neither the prevalence of diabetes nor that of prediabetes changed over time.

According to Dr Menke, "a previous study found 87% of teens with diagnosed diabetes had type 1 diabetes, and this is likely in the ballpark of the percentage with type 1 diabetes in our study."

He told Medscape Medical News that although study participants who reported insulin use were more likely to have type 1 diabetes while those who did not use insulin were more likely to have type 2 diabetes, "there are exceptions for both, so we can't consider insulin use to be accurate criteria to determine diabetes type. Likewise, weight-for-height criteria are not well-established for adolescents and also vary within types of diabetes. This is indeed an area where further research is necessary."

The study was funded by a contract from the National Institute of Diabetes and Digestive and Kidney Diseases. The authors had no relevant financial relationships.

For more diabetes and endocrinology news, follow us on Twitter and on Facebook.

JAMA. 2016;316:344-345. Extract

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Behavioral Changes Effective for Most T2D Patients
But some patients in LOOK Ahead fared worse with intervention

MEDPAGE TODAY
Mastery in Diabetes Management cme/ce, July 17, 2017, by Kristen Monaco, Contributing Writer, MedPage Today
Action Points

- Among a majority of patients with type 2 diabetes, intensive weight loss intervention reduced the risk of adverse cardiovascular outcomes.
- Note that 14% of the study participants reported significantly worse outcomes following such intensive lifestyle intervention.

Among a majority of patients with type 2 diabetes, intensive weight loss intervention reduced the risk of adverse cardiovascular outcomes, a post hoc analysis of the Look AHEAD (Action for Health in Diabetes) trial found.

In the study, led by Aaron Baum, PhD, lead economist at the Arnhold Institute for Global Health in New York City, and colleagues, 86% of the overall population (n=2,101 of 2,451) reduced the risk of composite cardiovascular outcomes via intensive lifestyle modification -- 167 (16%) of 1,046 primary outcome events for intervention versus 205 (19%) of 1,055 for control; absolute risk reduction 3.46%, 95% CI 0.21-6.73%, P=0.038. This group included those with any HbA1c levels and self-reported good general health.

The findings were published online in *The Lancet Diabetes & Endocrinology*.

However, 14% of the study participants (n=350 of 2,451) reported significantly worse outcomes following such intensive lifestyle intervention (27 [16%] of 171 primary outcomes events for intervention versus 15 [8%] of 179 primary outcomes events for control; absolute risk increase 7.41%, 0.60-14.22, P=0.003). These patients were identified as having well-controlled diabetes at baseline (A1c <6.8%) and poor self-reported general health.

"We were surprised to find that weight loss interventions may not be beneficial for all patients," Baum, who is also affiliated with the Icahn School of Medicine at Mount Sinai, told MedPage Today. "The intervention seems to lower the risk of cardiovascular events and mortality for the majority of patients, but it may have had a negative impact on a small subgroup patients, thus rendering the overall average effect neutral."

The original analysis of the 2013 Look AHEAD trial, published in the *New England Journal of Medicine*, was stopped early after a median follow-up of nearly a decade due to the lack of significant findings between the primary outcomes of long-term cardiovascular disease morbidity and mortality with intensive weight loss intervention among people with type 2 diabetes.

The multicenter trial included 5,145 overweight or obese individuals with type 2 diabetes, who were randomized to undergo intensive lifestyle intervention, marked by diet and exercise to attain at least a 7% total weight loss, or a control group, which included diabetes education and support.

In the current analysis, Baum's group used new machine learning techniques to re-address the original data by implementing a causal forest analysis, designed to identify heterogeneous treatment effects.

Baum said that after attending a talk on new machine learning techniques aimed at causal inference problems, Baum said, "it struck me that the newer [machine learning] methods would be well suited for increasing the quantity of knowledge we can learn from the clinical trial data we already have," and that this new type of model was particularly well suited to analyze health disparities.

"From a technical point of view, the method was attractive, because it learns from half of the data -- in this case, looking for combinations of characteristics of the patients who benefited the most from the weight loss intervention, and uses the rest of the data to test those hypotheses and look for complex interactions in the data, thus avoiding multiple hypothesis testing or p-hacking," he added.
A total of 4,901 participants from the original trial were included and randomized into the training set (n=2,450) to identify the factors via the causal forest model, or to a testing set (n=2,451) used to validate the findings. Baum's group employed the same primary outcome definition of composite cardiovascular (CV)-outcome: first occurrence of death from CV-causes, non-fatal myocardial infarction, non-fatal stroke, or hospitalization for angina.

The causal forest analysis divided the testing set into subgroups based upon baseline HbA1c measures (A1c<6.8%: well-controlled; ≥6.8%: moderately or poorly controlled), and general health self-reported with the Short Form-36 survey (score≥48: good health; <48: poor). Self-reported mental health was also assessed using the SF-36 with a mental component summary.

In an accompanying editorial, Edward W. Gregg, PhD, of the Centers for Disease Control and Prevention, and Rena Wing, PhD, of Alpert Medical School of Brown University in Providence, R.I., called the study's method a "novel approach to assessing such heterogeneity," noting, however, that the findings are difficult to interpret.

Gregg and Wing suggested that good self-reported health may be indicative of improved lifestyle intervention adherence, thus rendering improved outcomes, although "the lack of any significant difference between these subgroups in compliance or metabolic risk factors in the supplemental analyses leaves this explanation unsatisfying." Instead, the editorial posed the idea that it may be "simply a chance finding" in regard to the perplexing 14% of those in the study who had worse CV-outcomes with intervention.

"Computer science methods for causal inference will continue to improve," Baum added. "We are working on applying them to targeting hypertension management goals, balancing risk and reward for cancer screenings, and understanding the impacts of insurance expansions."

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Reviewed by Robert Jasmer, MD Associate Clinical Professor of Medicine, University of California, San Francisco and Dorothy Caputo, MA, BSN, RN, Nurse Planner


The Population Health Benefits Of A Healthy Lifestyle: Life Expectancy Increased And Onset Of Disability Delayed

HealthAffairs
Neil Mehta1,* and Mikko Myrskylä2
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2 Mikko Myrskylä is director of the Max Planck Institute for Demographic Research, in Rostock, Germany; a research professor at the London School of Economics and Political Science, in the United Kingdom; and professor of social statistics at the University of Helsinki, in Finland.

Abstract

A key determinant of population health is the behavioral profile of a population. Nearly 80 percent of Americans reach their fifties having smoked cigarettes, been obese, or both. It is unknown to what extent risky behaviors (for example, smoking, having a poor diet, being physically inactive, and consuming an excessive amount of alcohol) collectively are reducing the health and life expectancy of the US population, or what improvements might be achievable in their absence. Using data from the Health and Retirement Study, we studied people ages fifty and older who had never smoked, who were not obese, and who consumed alcohol moderately. Compared to the whole US population, those with such a favorable behavioral profile had a life expectancy at age fifty that was seven years longer, and they experienced a delay in the onset of disability of up to six years. These results provide a benchmark for evaluating the massively damaging effects that behavioral risks have on health at older ages and the importance of prioritizing policies to implement behavioral-based interventions.

Study: Healthy lifestyle can increase life expectancy by 7 years

People who do not smoke, maintain a healthy weight and drink alcohol in moderation can increase their life expectancy significantly.

July 20, 2017, by Amy Wallace

https://www.upi.com/Health_News/2017/07/20/Study-Healthy-lifestyle-can-increase-life-expectancy-by-7-years/5961500565188/

A recent study has found a healthy lifestyle can increase a person's life expectancy by up to seven years. Photo by Edwin & Kelly Tofslie/flickr

Researchers have found having a healthy lifestyle and not engaging in risky behaviors can increase a person's life expectancy by up to seven years.

"Improvements in medical technology are often thought to be the gatekeeper to healthier, longer life," Mikko Myrskylä, director of the Max Planck Institute for Demographic Research in Germany, said in a news release. "We showed that a healthy lifestyle, which costs nothing, is enough to enable individuals to enjoy a very long and healthy life."
"A moderately healthy lifestyle is enough to get the benefits. Avoiding becoming obese, not smoking, and consuming alcohol moderately is not an unrealistic goal."

The study, published July 20 in Health Affairs, of more than 14,000 people in the United States between the ages of 50 and 89 from 1998 to 2012 found that people who never smoked and who were not obese lived four to five years longer than the general population.

Researchers also found that the extended life expectancy was free of disability and that individuals who consumed alcohol in moderation lived seven more years than the general population -- with a total life expectancy surpassing the Japanese, who are renowned for their long life expectancy.

"The most positive result is that the number of years that we have to live with physical limitations does not increase as we gain more years through healthy lifestyle. Instead, healthy lifestyle is associated with a strong increase in physically fit years. In other words, the years we gain through a healthy lifestyle are years in good health," Myrskylä said.

The study found men who were not overweight, never smoked and drank in moderation lived an average of 11 years longer than men who smoked, were overweight and drank excessively. The gap for women was even greater at 12 years.

"Our results show how important it is to focus on prevention. Those who avoid risky health behaviours are achieving very long and healthy lives. Effective policy interventions targeting health behaviors could help larger fractions of the population to achieve the health benefits observed in this study," Myrskylä said.

Lifestyle Factors Predict Independent Aging in Older Men
Never smoking, high adherence to Mediterranean diet linked to independent aging

Physician's Weekly
HealthDay News, July 14, 2017

Lifestyle factors are associated with independent aging for men aged 85 years and older, according to a study published online July 7 in the Journal of the American Geriatrics Society.

Kristin Franzon, M.D., from Uppsala University in Sweden, and colleagues conducted a cohort study involving 1,104 Swedish men (mean age, 71 years), of whom 369 were assessed for independent aging 16 years later. Information was obtained on lifestyle and adherence to a Mediterranean-like diet. Lack of diagnosed dementia, Mini-Mental State Examination score of ≥25, non-institutionalized, independent in personal activities of daily living, and ability to walk outdoors alone defined independent aging at a mean age of 87 years.

The researchers found that 57 percent of the men survived to age 85 years, and at a mean age of 87 years, 75 percent displayed independent aging. There was an association for independent aging with never smoking versus current smoking (odds ratio, 2.20) and for high versus low adherence to a Mediterranean-like diet (odds ratio, 2.69). Associations with independent aging were also seen for normal weight or overweight and waist circumference of 102 cm or less. There were similar correlations for survival.
"Lifestyle factors such as never smoking, maintaining a healthy diet, and not being obese at age 71 were associated with survival and independent aging at age 85 and older in men," the authors write.

One author disclosed financial ties to the nutrition industry.

Abstract

Associations of Weight Gain From Early to Middle Adulthood With Major Health Outcomes Later in Life

Yan Zheng, MD, PhD1,2; JoAnn E. Manson, MD, DrPH3,4,5; Changzheng Yuan, MD, ScD1; et al Matthew H. Liang, MD, MPH6,7,8,9; Francine Grodstein, ScD3,4; Meir J. Stampfer, MD, DrPH1,3,4; Walter C. Willett, MD, DrPH1,3,4; Frank B. Hu, MD, PhD1,3,4

http://jamanetwork.com/journals/jama/article-abstract/2643761

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Key Points

Question  What is the association of weight gain from early to middle adulthood with health outcomes later in life?
Findings  During a follow-up of 18 years in 92,837 US women and 15 years in 25,303 US men, compared with participants who maintained a stable weight (weight loss ≤2.5 kg or gain <2.5 kg), those who gained a moderate amount of weight (≥2.5 kg to <10.0 kg) had increased incidence of type 2 diabetes (absolute rate difference/100,000 person-years of 98 in women and 111 in men), cardiovascular disease (61 in women), obesity-related cancer (37 in women and 42 in men), and mortality (51 among women who never smoked).

Meaning  Among women and men, moderate weight gain from early to middle adulthood was associated with significantly increased risk of major chronic diseases and mortality.

Abstract

Importance  Data describing the effects of weight gain across adulthood on overall health are important for weight control.

Objective  To examine the association of weight gain from early to middle adulthood with health outcomes later in life.

Design, Setting, and Participants  Cohort analysis of US women from the Nurses’ Health Study (1976-June 30, 2012) and US men from the Health Professionals Follow-Up Study (1986-January 31, 2012) who recalled weight during early adulthood (at age of 18 years in women; 21 years in men), and reported current weight during middle adulthood (at age of 55 years).

Exposures  Weight change from early to middle adulthood (age of 18 or 21 years to age of 55 years).

Main Outcomes and Measures  Beginning at the age of 55 years, participants were followed up to the incident disease outcomes. Cardiovascular disease, cancer, and death were confirmed by medical records or the National Death Index. A composite healthy aging outcome was defined as being free of 11 chronic diseases and major cognitive or physical impairment.

Results  A total of 92,837 women (97% white; mean [SD] weight gain: 12.6 kg [12.3 kg] over 37 years) and 25,303 men (97% white; mean [SD] weight gain: 9.7 kg [9.7 kg] over 34 years) were included in the analysis. For type 2 diabetes, the adjusted incidence per 100,000 person-years was 207 among women who gained a moderate amount of weight (≥2.5 kg to <10 kg) vs 110 among women who maintained a stable weight (weight loss ≤2.5 kg or gain <2.5 kg) (absolute rate difference [ARD] per 100,000 person-years, 98; 95% CI, 72 to 127) and 258 vs 147, respectively, among men (ARD, 111; 95% CI, 58 to 179); hypertension: 3415 vs 2754 among women (ARD, 662; 95% CI, 545 to 782) and 2861 vs 2366 among men (ARD, 495; 95% CI, 281 to 726); cardiovascular disease: 309 vs 248 among women (ARD, 61; 95% CI, 38 to 87) and 383 vs 340 among men (ARD, 43; 95% CI, −14 to 109); obesity-related cancer: 452 vs 415 among women (ARD, 37; 95% CI, 0.5 to 94). Among those who gained a moderate amount of weight, 3651 women (24%) and 2405 men (37%) achieved the composite healthy aging outcome. Among those who maintained a stable weight, 1528 women (27%) and 989 men (39%) achieved the composite healthy aging outcome. The multivariable-adjusted odds ratio for the composite healthy aging outcome associated with moderate weight gain was 0.78 (95% CI, 0.72 to 0.84) in women and 0.88 (95% CI, 0.79 to 0.97) in men. Higher amounts of weight gain were associated with greater risks of major chronic diseases and lower likelihood of healthy aging.

Conclusions and Relevance  In these cohorts of health professionals, weight gain during adulthood was associated with significantly increased risk of major chronic diseases and decreased odds of healthy aging. These findings may help counsel patients regarding the risks of weight gain.
Obesity and Excessive Weight Gain in Young Adults: New Targets for Prevention

Editorial, July 18, 2017, William H. Dietz, MD, PhD

http://jamanetwork.com/journals/jama/fullarticle/2643743

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Original Investigation: Weight Gain During Adulthood and Major Health Outcomes Later in Life
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The need to focus on the prevention of obesity and excessive weight gain in young adults is convincingly illustrated in the study by Zheng and colleagues1 in this issue of JAMA. Using data from 92 837 women in the Nurses’ Health Study (NHS) and 25 303 men in the Health Professionals Follow-Up Study (HPFS) who recalled weight at young adulthood (at age of 18 years in women and age of 21 years in men) and reported current weight at middle adulthood (age of 55 years), the authors found that approximately 23% of women and 13% of men gained 20 kg or more between the ages of 18 and 55 years in women and between the ages of 21 and 55 years in men. In both groups, the incidence of type 2 diabetes, hypertension, cardiovascular disease, cataracts, severe osteoarthritis, and mortality was increased with weight gain in a dose-response fashion, and was greatest among those who gained 20 kg or more. Obesity-related cancers in both women and men were associated with moderate weight gain during adulthood.

In addition, the likelihood of healthy aging (measured using a composite index of the absence of multiple chronic diseases, no cognitive decline, and no physical limitations) was significantly lower among men and women who gained more than 20 kg. For example, the multivariable-adjusted odds ratio, including adjustment for smoking and baseline weight, for the composite healthy aging outcome associated with a weight gain of more than 20 kg compared with a stable weight (ie, weight loss $\leq 2.5$ kg or gain $<2.5$ kg) was 0.28 (95% CI, 0.26-0.31) in women and 0.45 (95% CI, 0.39-0.52) in men. Physical inactivity, unhealthy dietary habits, history of never smoking, and development of chronic diseases were more common among men and women who gained more weight.

Young adulthood has been a neglected period of study in the development of obesity. Data from the National Health and Nutrition Examination Survey (NHANES) 2013-2014, a nationally representative cross-sectional survey of the US population, indicated that the prevalence of obesity was approximately 9% among 2- to 5-year-old children, 17% among 6- to 11-year-old children, 20% among 12- to 19-year-old adolescents,2 and 34% among 20- to 39-year-old adults.3 Moreover, the ethnic disparities in the prevalence of obesity may begin in the transition between adolescence and young adulthood. For example, the divergence of the median body mass index (calculated as weight in kilograms divided by height in meters squared) in black girls from that in white girls may begin as early as the age of 9 years.4 Ethnic disparities in the prevalence of obesity appear to increase further in young adults with little change thereafter.5 Data from NHANES 2013-2014 indicate that the prevalence of obesity ranged from 19% to 23% among 12- to 19-year-old males,2 but increased to 29% in 20- to 39-year-old non-Hispanic whites, 33% in non-Hispanic blacks, and 39% in Hispanics.3 The comparable range for 12- to 19-year-old women was 20% to 24%,2 but among 20- to 39-year-old women, the prevalence increased to 33% in non-Hispanic whites, 43% in Hispanics, and 57% in non-Hispanic blacks.3

In addition to the study by Zheng et al,1 other studies have shown that early adulthood is not only a period of risk for the development of obesity, but also a period of risk for excessive weight gain. A 10-year follow-up of participants included in the first NHANES conducted between 1971 and 1975 reported that 4% of men and 8% of women gained 5
units or more in body mass index between the ages of 25-34 years and 35-44 years. Rates of excessive weight gain were higher among black women, and even higher among those who were overweight at baseline. Among young adults aged 18 to 30 years enrolled in the 1985-1986 Coronary Artery Risk Development in Young Adults (CARDIA) study and remeasured periodically until 1995-1996, excessive weight gain (defined as >20 kg) occurred in 6% and 9%, respectively, of white men and women and 15% and 22% of black men and women. The rates of excessive weight gain in the NHS and HPFS may reflect a continued secular trend in excessive weight gain. Furthermore, because men and women in the NHS and HPFS were predominately white, the findings of Zheng et al suggest that high rates of excessive weight gain during young adulthood may be a generalizable phenomenon.

Efforts to prevent obesity have focused on children and adolescents. However, the 2-fold difference in the prevalence of obesity between the ages of 6-11 years (17%) and 20-39 years (34%), rates of excessive weight gain in young adults, and the increased morbidity and mortality associated with excessive weight gain indicate that efforts to prevent and control obesity in young adults should be accorded a high priority. The challenge will be that many individuals, particularly men between the ages of 20 and 39 years feel healthy, and have no medical problems that precipitate a visit to a physician.

Aside from the differences between black adults and non-Hispanic white adults, successful prevention will require more information on the timing, demographics, behaviors, and life-course transitions that could contribute to excessive weight gain in this age group. Longitudinal studies of nationally representative populations are essential to identify the timing and determinants of the development of obesity and excessive weight gain within the 20- to 39-year-old age range that could become the target for preventive interventions. Life-course transitions may be more frequent in young adults than at any other age and may presage the development of obesity. For example, childbirth occurs frequently during early adulthood. Weight gain during pregnancy in excess of the Institute of Medicine recommendations is associated with increased rates of postpartum weight retention, and appears to occur more frequently among low-income black women and may contribute to their higher prevalence of obesity. A Cochrane review has shown that interventions focused on diet, exercise, or both reduce excessive weight gain during pregnancy, and may therefore reduce postpartum weight retention. Other life-course transitions, such as leaving home to live independently, first full-time job, marriage, childbearing, or divorce could all contribute. Although other factors such as immigration status, smoking cessation, depression, or the use of antipsychotic drugs have all been associated with obesity, it seems likely that these could only account for a small fraction of the prevalence of excessive weight gain. Identification of those factors that disproportionally affect young adult black and Hispanic women and Hispanic men must become a high priority.

Among young adult parents, effective prevention of excessive weight gain may also reduce the likelihood of obesity developing in spouses and children. Obesity spreads along social and family networks. Furthermore, in treatment studies of childhood obesity that involved children and parents, children's weight loss was correlated with parental weight loss (r = 0.39), and successful weight loss by children has been accompanied by a weight loss of 12% by their parents. However, no published studies could be identified that have examined the natural history of synchronous changes in weight among parents and children. Longitudinal studies that link weight changes in parents and their children could demonstrate that a family-based weight control strategy would benefit both.

In addition to the need for longitudinal studies to identify the timing and targets for the prevention of obesity and excessive weight gain in young adults, a compelling case will need to be made for the development of effective interventions. In young adults, the costs of excessive weight gain, the cost savings that could be achieved by the prevention of obesity and excessive weight gain, and the potential halo effect of the prevention of obesity in young parents on the prevention of weight gain in their children could provide vital support for targeted prevention efforts. Because many young adult women are seen regularly for care, identification of excessive weight gain, particularly during pregnancy and the postpartum period, should become a focus for counseling. Clinicians who provide care primarily for
adults as well as primary care clinicians who provide care for adults, children, and families could incorporate questions about weight trajectories of other family members that suggest the need for family-based interventions.

Broader venues for intervention efforts could include a supplemental nutrition plan for the Women, Infants, and Children program that provides nutritional counseling for pregnant women and for women, infants, and children up to the age of 4 years. Sustained productivity and reduced absenteeism among employees with healthy weights might incentivize employers with long-term workforces to invest in prevention efforts directed at families. Beyond clinical interventions, identification and implementation of environmental changes that effectively promote weight maintenance are essential for population-based efforts.

The prevalence of obesity emphasizes that it will not be possible to provide effective treatment for all of those affected. Therefore, efforts to prevent and control this widespread disease must be renewed. Reducing and preventing obesity and excessive weight gain in young adults provide a new target, and one that could offer an effective transgenerational approach for prevention.

References
Meal frequency and timing linked to BMI
New information on how the timing of meals impacts weight gain or loss

ScienceDaily
Date: July 20, 2017
https://www.sciencedaily.com/releases/2017/07/170720094844.htm
Source: Loma Linda University Adventist Health Sciences Center
Summary: Timing and frequency of meals play a role in predicting weight loss or gain, suggests new research.

A study by researchers from Loma Linda University School of Public Health and the Czech Republic has found that timing and frequency of meals play a role in predicting weight loss or gain.

Using information gleaned from more than 50,000 participants in the Adventist Health Study-2 (AHS-2), the researchers discovered four factors associated with a decrease in body mass index: eating only one or two meals per day; maintaining an overnight fast of up to 18 hours; eating breakfast instead of skipping it; and making breakfast or lunch the largest meal of the day. Making breakfast the largest meal yielded a more significant decrease in BMI than did lunch.

The two factors associated with higher BMI were eating more than three meals per day -- snacks were counted as extra meals -- and making supper the largest meal of the day.

As a practical weight-management strategy, Hana Kahleova, MD, PhD, recommends eating breakfast and lunch, skipping supper, avoiding snacks, making breakfast the largest meal of the day and fasting overnight for up to 18 hours. A postdoctoral research fellow at LLUSPH when the study was conducted, Kahleova is now director of clinical research for the Physicians Committee for Responsible Medicine in Washington, DC, and is currently on sabbatical from the Institute for Clinical and Experimental Medicine in Prague, Czech Republic, as a postdoctoral research fellow and diabetes consultant physician.

Kahleova says the findings confirm an ancient nutritional maxim: "Eat breakfast like a king, lunch like a prince, and dinner like a pauper."

Titled "Meal frequency and timing are associated with Body Mass Index in the Adventist Health Study-2," the study was co-written by Gary Fraser, MBChB, PhD, a professor at LLU Schools of Medicine and Public Health, and director of AHS-2. It was published as an online advance on July 12 and will appear in the Sept. 2017 edition of the Journal of Nutrition.

Fraser said that irrespective of meal pattern, there was, on average, an increase in weight gain year by year until participants reached the age of 60. After age 60, most participants experienced a weight loss each year.

"Before age 60 years, those eating calories earlier in the day had less weight gain," Fraser said, adding that after age 60, the same behavior tended to produce a larger rate of weight loss than average. "Over decades, the total effect would be very important."

The team employed a technique called linear regression analysis and adjusted their findings to exclude demographic and lifestyle factors that might skew the results.

Story Source: Materials provided by Loma Linda University Adventist Health Sciences Center. Note: Content may be edited for style and length.
Statins can lower your heart disease risk—but a healthy diet is just as effective, AHA says

July 14, 2017
https://www.advisory.com/daily-briefing/2017/07/14/unsaturated-aha

Eating less saturated fat and replacing it with unsaturated fat can reduce an individual's risk of developing cardiovascular disease (CVD) as much as cholesterol-lowering statin drugs, according to guidance published this month by the American Heart Association (AHA).

The latest guidance does not represent a departure from AHA's previous recommendations, according to the Baltimore Sun. However, the guidance takes into account the latest findings on the effects diet can have on CVD risk.

Guidance details

The guidance is based on an analysis of new evidence—including meta-analyses of observational studies and randomized clinical trials—on the effects of dietary fat on CVD risk.

AHA said evidence shows that replacing saturated fats with unsaturated fats leads to a similar reduction in an individual's risk of developing CVD as taking a statin treatment. AHA found individuals who lowered their intake of saturated fats and replaced that intake with unsaturated fats reduced their CVD risk by about 30 percent—which is similar to the reduction produced by statins.

According to AHA, a lower intake of saturated fat—coupled with a higher intake of both monounsaturated and polyunsaturated fat—is linked to lower rates of CVD, as well as other major causes of death. AHA said replacing saturated fats with unsaturated fats lowers low-density lipoprotein (LDL) cholesterol, or so-called "bad cholesterol," which causes atherosclerosis.

AHA said, "Taking into consideration the totality of the scientific evidence," it "strongly" concludes "that lowering intake of saturated fat and replacing it with unsaturated fats, especially polyunsaturated fats, will lower the incidence of CVD."

AHA added, "This recommended shift from saturated to unsaturated fats should occur simultaneously in an overall healthful dietary pattern," such as the:

- Dietary Approaches to Stop Hypertension (DASH) diet; or
- Mediterranean diet, as featured in the 2013 AHA/American College of Cardiologylifestyle guidelines and the 2015 to 2020 Dietary Guidelines for Americans.
Michael Miller, director of the University of Maryland Medical Center's Center for Preventive Cardiology, said AHA's new guidance "tries to put it all in perspective—the view from 10,000 feet—but sometimes food can still be controversial." Miller said the guidance could be helpful to physicians when they are advising patients. He said, "If you're good most of the time, allow yourself one unhealthy breakfast, lunch, and dinner a week. But don't go nuts and eat a 24-ounce steak."

Dana Simpler, an internal medicine physician at Mercy Medical Center, said a poor diet can have dire consequences, adding that AHA's new guidance missed an opportunity to warn people about the extent to which their food matters. Simpler said, "Simply substituting saturated fats (bacon, red meat, butter) with unsaturated fats (vegetable oils) reduces heart attacks by 30 percent, but, what about the other 70 percent that still have life-threatening heart disease?"

Seth Martin, co-director of Johns Hopkins Hospital's Advanced Lipid Disorders Center, said he "like[s] the idea of replacing something with something," because "perfection" is difficult to achieve when it comes to a healthy diet. He said he encourages patients to adopt the DASH or Mediterranean diets, which center on low-fat, plant-based, and whole-grain foods (Cohn, Baltimore Sun/Sacramento Bee, 6/25; Sacks et al., Circulation, 6/15).

Cardiovascular programs face increasing pressure to deliver high-value, patient-centered care for an increasingly complex patient population. To achieve this goal, many CV service lines are developing comprehensive disease programs for high-priority patient populations.

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**Improved diet quality may reduce risk for death**

*Healio Cardiology* today

July 12, 2017, In the Journals, Perspective, by Andrew M. Freeman

[https://www.healio.com/cardiology/chd-prevention/news/online/%7B512d2d9a-9b82-422c-abfc-134d10182675%7D/improved-diet-quality-may-reduce-risk-for-death](https://www.healio.com/cardiology/chd-prevention/news/online/%7B512d2d9a-9b82-422c-abfc-134d10182675%7D/improved-diet-quality-may-reduce-risk-for-death)


Patients who improved their diet quality during a 12-year period had reduced risk for all-cause and CV mortality, according to a study published in The New England Journal of Medicine.

“Overall, our findings underscore the benefits of healthy eating patterns, including the Mediterranean diet and the [Dietary Approaches to Stop Hypertension] diet,” Mercedes Sotos-Prieto, PhD, assistant professor of food and nutrition science at Ohio University Heritage College of Osteopathic Medicine in Athens, said in a press release. “Our study indicates that even modest improvements in diet quality could meaningfully influence mortality risk, and conversely, worsening diet quality may increase the risk.”

See Also

- Improving diet-quality scores can reduce risk for CVD
Researchers analyzed data from 47,994 women from the Nurses’ Health Study aged 30 to 55 years and 25,745 men from the Health Professionals Follow-Up Study aged 40 to 75 years. Participants with a history of CVD at or before baseline were excluded. Changes in dietary scores were reviewed from 1986 to 1998, and the risk for total and cause-specific death was analyzed from 1998 to 2010.

**Diet-quality scores**

Participants completed a food frequency questionnaire at baseline and every 4 years, which was used to calculate three diet-quality scores: Alternate Healthy Eating Index, Alternate Mediterranean Diet score and the Dietary Approaches to Stop Hypertension (DASH) score. Higher scores in all three criteria were related to a healthier diet.

Those who greatly improved their diet quality were more likely to have a lower baseline diet score, to be younger, to consume less alcohol and to be more active than those with minimal change in diet quality. Participants who improved their diet quality reported an increased consumption of vegetables, whole grains and omega-3 fatty acids, along with a decreased intake of sodium.

During 12 years, the pooled risk for all-cause mortality in participants with a 13% to 33% improvement in diet quality was lower compared with those with a 0% to 3% improvement according to changes in the Alternate Mediterranean Diet score (HR = 0.84; 95% CI, 0.78-0.91), the Alternate Healthy Eating Index score (HR = 0.91; 95% CI, 0.85-0.97) and the DASH score (HR = 0.89; 95% CI, 0.84-0.95).

**Reduced risk for death**

Participants whose diet-quality scores increased by 20 percentile points had reduced risk for all-cause death by 8% to 17% across all three scores, and reduced risk for CV death by 7% to 15% according to the Alternate Healthy Eating Index score and the Alternate Mediterranean Diet score.

At 12 years, those with the largest score improvements from baseline had a 23% lower risk for all-cause death with the Alternate Mediterranean Diet score (95% CI, 12-32), 15% reduced risk with the Alternate Healthy Eating Index score (95% CI, 3-25) and 28% lower risk with the DASH score (95% CI, 16-38) compared with those with consistently low diet scores.

Participants with high scores throughout follow-up had a lower risk for death with the Alternate Mediterranean Diet score (11%; 95% CI, 5-18), Alternate Healthy Eating Index score (14%; 95% CI, 8-19) and the DASH score (9%; 95% CI, 2-15) compared with those with consistently low diet scores.

“Taken together, our findings provide support for the recommendations of the 2015 Dietary Guidelines Advisory Committee that it is not necessary to conform to a single diet plan to achieve healthy eating patterns,” Sotos-Prieto and colleagues wrote. “These three dietary patterns, although different in description and composition, capture the essential elements of a healthy diet. Common food groups in each score that contributed most to improvements were whole grains, vegetables, fruits and fish or [omega]-3 fatty acids.” – by Darlene Dobkowski

Disclosure: Sotos-Prieto reports receiving grants from Fundacion Alfonso Martin Escudero during the conduct of the study. Please see the full study for a list of the other researchers’ relevant financial disclosures.

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Diet-quality scores

Participants completed a food frequency questionnaire at baseline and every 4 years, which was used to calculate three diet-quality scores: Alternate Healthy Eating Index, Alternate Mediterranean Diet score and the Dietary Approaches to Stop Hypertension (DASH) score. Higher scores in all three criteria were related to a healthier diet.

Those who greatly improved their diet quality were more likely to have a lower baseline diet score, to be younger, to consume less alcohol and to be more active than those with minimal change in diet quality. Participants who improved their diet quality reported an increased consumption of vegetables, whole grains and omega-3 fatty acids, along with a decreased intake of sodium.

During 12 years, the pooled risk for all-cause mortality in participants with a 13% to 33% improvement in diet quality was lower compared with those with a 0% to 3% improvement according to changes in the Alternate Mediterranean Diet score (HR = 0.84; 95% CI, 0.78-0.91), the Alternate Healthy Eating Index score (HR = 0.91; 95% CI, 0.85-0.97) and the DASH score (HR = 0.89; 95% CI, 0.84-0.95).

Reduced risk for death

Participants whose diet-quality scores increased by 20 percentile points had reduced risk for all-cause death by 8% to 17% across all three scores, and reduced risk for CV death by 7% to 15% according to the Alternate Healthy Eating Index score and the Alternate Mediterranean Diet score.

At 12 years, those with the largest score improvements from baseline had a 23% lower risk for all-cause death with the Alternate Mediterranean Diet score (95% CI, 12-32), 15% reduced risk with the Alternate Healthy Eating Index score (95% CI, 3-25) and 28% lower risk with the DASH score (95% CI, 16-38) compared with those with consistently low diet scores.

Participants with high scores throughout follow-up had a lower risk for death with the Alternate Mediterranean Diet score (11%; 95% CI, 5-18), Alternate Healthy Eating Index score (14%; 95% CI, 8-19) and the DASH score (9%; 95% CI, 2-15) compared with those with consistently low diet scores.

“Taken together, our findings provide support for the recommendations of the 2015 Dietary Guidelines Advisory Committee that it is not necessary to conform to a single diet plan to achieve healthy eating patterns,” Sotos-Prieto and colleagues wrote. “These three dietary patterns, although different in description and composition, capture the essential elements of a healthy diet. Common food groups in each score that contributed most to improvements were whole grains, vegetables, fruits and fish or [omega]-3 fatty acids.” – by Darlene Dobkowski

Disclosure: Sotos-Prieto reports receiving grants from Fundacion Alfonso Martin Escudero during the conduct of the study. Please see the full study for a list of the other researchers’ relevant financial disclosures.
This further strengthens some of the more recent work, which suggests that there are key dietary components that seem to continually improve outcomes overall. They reduce death and CVD.

These are predominately plant-based. If you look at this study, it talks a lot about the Alternative Healthy Eating Index, which measures things like intakes of vegetables, fruits, whole grains, limited sweets and limited red meat. When people follow that type of diet, they do better. There was recent work in the last year about how these healthful food components improve health outcomes.

This study shows us that when people eat better for a longer period of time or if people go from a significantly less good diet to a much better diet, they do better. This has very important health implications because it continues to underscore the importance of long-term not just diet, but a lifestyle of eating well. I suspect it’s difficult to perfectly capture because there are a lot of confounders, but the people who tend to push themselves to eat better and limit the less-good foods also probably exercise more and smoke less. Of course, many of these things were adjusted for in this study with their multivariate analysis and some is hard to fully capture.

I have a feeling that at some point, the insurance companies are going to start to pay attention here, because as you can imagine, the people who do best — and therefore the ones that they can make the most money from — are the ones who eat the best.

A recent publication of ours in The American Journal of Medicine, (Devries S, et al. Am J Med. 2017;doi:10.1016/j.amjmed.2017.04.043) showed an enormous gap in knowledge for health care providers on nutrition and lifestyle. Physicians get little if any training whatsoever during our schooling and training, and so we keep finding out that lifestyle seems to confer the best improvement.

If you look at some of the decreases in mortality that were quoted in the study here, a 20% increase in diet scores was associated with up to a 17% reduction in mortality.

These are not really achievable with most medicines that we use regularly. We have to better equip all health care providers with the knowledge and tools they need to counsel their patients, and on top of that, actually live this type of a lifestyle.

This study included doctors and nurses, as these were the cohorts from the Nurses’ Health Study and Health Professionals Follow-Up Study. I would argue that health care providers are some of the worst when it comes to eating well, and it’s something that we have to really strive to not only personally practice, but to learn more about so that we can counsel other patients by showing them how effective it is.

All three of the dietary recommendations from the U.S. Dietary Guidelines for Americans — one’s a plant-based diet, one’s a Mediterranean diet and one is the ‘Healthy’ American diet — are predominantly plant-based diets rich in fruits and vegetables, whole grains and legumes with limited amounts of meats and cheeses. It would be exciting to see a little bit more detail on specific dietary choices. For instance, could we repeat this exact analysis following people who are fully plant-based? Could we repeat this analysis with eliminating particular food groups and seeing what happens when we get rid of dairy products, which have been controversial, and when we eliminate eggs, which have been sort of controversial?

This study lays a lot of the groundwork for sustained healthful behaviors. We always talk about when people smoke cigarettes as pack-years. We often ask patients, ‘How many years did you smoke a pack a day for?’ Now we’re starting to find out that there seems to be an effect for obesity-years in the same vein. There seems to be an effect for how long were you eating healthy. I have a feeling what this is starting to show is it’s not just what you do in the short term, but what you also do in the long term.
The Alternative Healthy Eating Index participants did better, but how does that translate into actual advice for a patient? That’s where the next frontier is: translating eating healthier and healthy lifestyles into tangible menus and plans that patients can follow. Then we can see what really could happen. A lot of this work has been done, just not on such a large scale.

The evidence is becoming irrefutable, as a diet predominantly of plant-based foods seems to do well by people. The key take-home points are that eating well for a lifetime is important and that it’s not just a diet, but rather an entire lifestyle that’s important. We need to do a lot better now and train our health care providers and our team to reinforce that information.

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Disclosures: Freeman reports no relevant financial disclosures

**Healthful plant-based diet may decrease risk for CHD**

*Healio Cardiology Today*
July 17, 2017, In the Journals


Participants who ate a healthier plant-based diet had a decreased risk for CHD, according to a study published in the Journal of the American College of Cardiology.

“When we examined the associations of the three food categories with heart disease risk, we found that healthy plant foods were associated with lower risk, whereas less healthy plant foods and animal foods were associated with higher risk,” Ambika Satija, ScD, a postdoctoral fellow at the Harvard T.H. Chan School of Public Health, said in a press release. “It’s apparent that there is a wide variation in the nutritional quality of plant foods, making it crucial to take into consideration the quality of foods in a plant-based diet.”

See Also
- [Plant-based diet lowers risk for CVD mortality](#)
- [Southern-style diet linked to higher risk for stroke](#)
- [Lifestyle therapies to decrease atherogenic cholesterol and...](#)

Researchers reviewed data from 73,710 women from the Nurses’ Health Study, 92,329 women from the [Nurses’ Health Study II](#) and 43,259 men from the [Health Professionals Follow-Up Study](#) who did not have chronic diseases at baseline. Participants completed a semiquantitative food frequency questionnaire every 2 to 4 years.

Plant-based diet indices
Three kinds of a plant-based diet were developed based on questionnaire responses: plant-based diet index, healthful plant-based diet index and unhealthful plant-based diet index. The overall plant-based diet index included mainly plant-based foods with no animal-based foods, including dairy, fish and meat. The healthful plant-based diet included everything from the overall plant-based diet without less healthy foods such as refined grains, potatoes, sugar-sweetened beverages and fruit juices. The unhealthful plant-based diet featured less healthful plant-based foods known to be associated with elevated risk for certain diseases.

Throughout 4,833,042 person-years of follow-up, CHD occurred in 8,631 participants. A pooled multivariable analysis showed that an overall plant-based diet index was inversely linked to CHD (HR comparing extreme deciles = 0.92; 95% CI, 0.83-1.01). The association was stronger in the healthful plant-based diet index (HR comparing extreme deciles = 0.75; 95% CI, 0.68-0.83). The unhealthful plant-based diet index had a positive association with CHD (HR comparing extreme deciles = 1.32; 95% CI, 1.2-1.46).

The links between the risk for CHD and either overall plant-based diet index or healthful plant-based diet index were similar by age, sex, family history of CHD and BMI.

Diet recommendations

“Dietary guidelines and lifestyle interventions could recommend increasing intake of healthy plant foods while reducing intake of less healthy plant foods and certain animal foods for improved cardiometabolic health,” Satija and colleagues wrote.

The healthful plant-based diet index “means both a challenge and an opportunity for cardiology,” Kim Allan Williams Sr., MD, professor of cardiovascular disease at Rush University Medical Center in Chicago, past president of the American College of Cardiology and a Cardiology Today Editorial Board Member, and Hena Patel, MD, a cardiologist at Rush University Medical Center, wrote in a related editorial. “Until recently, as a group, cardiologists have not delved deeply into nutrition, treating CVD’s downstream effects rather than obliterating its roots, leaving primary and secondary prevention opportunities on the table. It is time that we educate ourselves on dietary patterns, risk and outcomes and focus more on ‘turning off the faucet’ instead of ‘mopping up the floor.’” – by Darlene Dobkowski

Disclosures: This study was supported by research grants from NIH. Patel, Satija and Williams report no relevant financial disclosures. Please see the study for all other authors’ relevant financial disclosures.

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**Artificial sweeteners may increase risk for weight gain, heart disease**

Internal Medicine, Nutrition and Fitness, July 17, 2017, by Alaina Tedesco

https://www.healio.com/internal-medicine/nutrition-and-fitness/news/online/%7B269bc7e7-e288-4eae-b47b-a3f807e9e10f%7D/artificial-sweeteners-may-increase-risk-for-weight-gain-heart-disease


Individuals who routinely consume nonnutritive sweeteners may have an increased risk for long-term weight gain, obesity, diabetes, high BP and heart disease, according to new research published in the Canadian Medical Association Journal.
“Obesity is a major public health challenge that contributes to type 2 diabetes and cardiovascular disease,” Meghan B. Azad, PhD, from George & Fay Yee Center for Healthcare Innovation, University of Manitoba, Canada, and colleagues wrote. “Evidence that sugar consumption is fueling this epidemic has stimulated the increasing popularity of nonnutritive sweeteners, including aspartame, sucralose and stevioside.”

To determine whether regular consumption of nonnutritive sweeteners is associated with long-term adverse cardiometabolic effects, Azad and colleagues searched several databases for randomized controlled trials (RCTs) that assessed interventions for nonnutritive sweeteners and cohort studies that evaluated the consumption of such sweeteners among adults and adolescents. They identified 30 cohort studies (n = 405,907) and seven RCTs (n =1,003) including more than 400,000 individuals who were followed for an average of 10 years and 6 months, respectively.

BMI was not significantly affected by consumption of nonnutritive sweeteners (mean difference –0.37 kg/m²; 95% CI –1.1 to 0.36) according to data from the RCTs. In the RCTs, nonnutritive sweeteners also did not pose any consistent effects on other measures of body composition such as weight and obesity.

However, data from the cohort studies indicated a modest increase in BMI as a result of consuming nonnutritive sweeteners (mean correlation 0.05, 95% CI 0.03-0.06). In addition, the cohort studies showed that there was an association between nonnutritive sweetener consumption and increases in weight and waist circumference, as well as a greater prevalence of obesity, hypertension, metabolic syndrome, type 2 diabetes and cardiovascular events.

The researchers noted that studies with diabetes as an outcome demonstrated publication bias.

“Despite the fact that millions of individuals routinely consume artificial sweeteners, relatively few patients have been included in clinical trials of these products,” Ryan Zarychanski, MD, MSc, coauthor from the University of Manitoba, said in a related press release. “We found that data from clinical trials do not clearly support the intended benefits of artificial sweeteners for weight management.”

While evidence from small RCTs suggested inconsistent associations between the consumption of nonnutritive sweeteners and reductions in body weight, BMI or waist circumference, data from larger cohort studies with longer follow-up periods indicated that each of these measures as well as obesity, hypertension, metabolic syndrome, type 2 diabetes, stroke and CVD events were significantly related to nonnutritive sweetener intake, according to the researchers.

“Caution is warranted until the long-term health effects of artificial sweeteners are fully characterized,” Azad said in the release.

“Given the widespread and increasing use of artificial sweeteners, and the current epidemic of obesity and related diseases, more research is needed to determine the long-term risks and benefits of these products,” she added.

Azad and researchers from the Children’s Hospital Research Institute of Manitoba are currently conducting a new study to determine how maternal consumption of artificial sweeteners affects weight gain, metabolism and gut bacteria in offspring

Disclosure: The researchers report no relevant financial disclosures.

Study may explain how artificial sweeteners actually make you gain weight
A new study could point to one of the mechanisms that show how artificial sweeteners, like those used in sugar-free soda, promote fat accumulation (Credit: norgallery/Depositphotos)

Do artificial sweeteners make you gain weight? This question has been hotly debated by scientists for decades with study after study showing strange correlations between a tendency to obesity and consumption of low-calorie sweeteners. A new study could have uncovered one of the biological mechanisms behind this counter-intuitive phenomenon.

Ever since the introduction of modern artificial sweeteners to our shelves in the 1980s there has been debate around their safety and ultimate efficacy as a weight-loss agent. Several large scale studies over the past 30 years have displayed positive correlations between weight gain and artificial sweetener use.

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While these studies did not imply a direct cause and effect, many researchers tried to come up with ways to explain the seemingly anomalous results. After all, why would consumption of lower-calorie foodstuffs result in weight gain? It didn't really make rational sense, leading to behavioral explanations being bandied about suggesting those who consumed artificial sweeteners over-compensated their calorie consumption elsewhere.

Other explanations speculated that artificial sweeteners confused the body's regular metabolic processes by being sweet but lacking calories. When your body doesn't get the caloric follow up from foods that taste sweet it could interfere with the normal hunger signals. This potentially resulted in low-calorie sweeteners making you more hungry than you would be otherwise.

All these explanations still relied on the individual ultimately not moderating their overall food intake, be it through miscalculation of caloric intake or uncontrollable hunger signals. But a new study from a team at George Washington University may be finally homing in on a biological reason that could explain why artificial sweeteners tend to correlate with weight gain.

The research concentrated on the artificial sweetener sucralose (used in Splenda, Zerocal, Sukrana, SucraPlus, Candys, Cukren, and Nevella), and tested its effects directly on stem cells taken from human fat tissue. When the cells were exposed to a concentration of sucralose equivalent to that of someone drinking four cans of diet soda a day, an increased accumulation of fat droplets in the cells was observed, as was a higher expression of genes that are seen to be markers of inflammation and fat production.

The next experiment compared samples of abdominal fat from subjects who consumed low-calorie sweeteners to subjects who did not. In the fat biopsy samples of those who consumed low-calorie sweeteners they saw evidence of increased glucose transport into cells.
The team also noted a 2.5-fold higher expression of sweet-taste receptors in the fat tissue of the subjects that consumed the sweeteners. The suspicion is that the higher expression of these sweet-taste receptors in the fat cells plays a role in allowing the increased glucose transport into the cells.

The research concludes by claiming that this metabolic dysregulation causes cellular mechanisms to produce more fat, and distressingly they saw the effects more apparent in obese subjects than those of normal weight.

"Many health-conscious individuals like to consume low-calorie sweeteners as an alternative to sugar," says the study's principle investigator, Associate Professor Sabyasachi Sen. "However, there is increasing scientific evidence that these sweeteners promote metabolic dysfunction."

The research is still in its early stages and still needs to be confirmed on a broader scale, but it could bring us closer to understanding why many studies show artificial sweeteners don't contribute to weight loss.

The research will be presented on Monday April 10th at ENDO 2017, the Endocrine Society's 99th annual meeting.

Source: The Endocrine Society

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**Could artificial sweeteners be bad for your brain?**

*Harvard Health Publications*

Posted June 7, 2017, by Robert H. Shmerling, MD, Faculty Editor, Harvard Health Publications

http://www.health.harvard.edu/blog/could-artificial-sweeteners-be-bad-for-your-brain-2017060711849

Sometimes it seems like people trying to choose a healthy diet and watch their weight can’t catch a break.

Past studies have linked the consumption of sugar-sweetened drinks with cardiovascular disease, high blood pressure, and obesity. So it’s easy to understand the appeal of diet soft drinks and other artificially sweetened beverages. If you drink two cans of Coke per day, switching to diet sodas could reduce your calorie intake by 8,400 calories each month. As long as you don’t add in new sources of calories, over time that could add up to some serious loss of excess weight.

But now, a study has raised the possibility that artificial sweeteners in diet beverages may increase the risk of dementia and stroke.

Can diet beverages really be bad for your brain?

Researchers analyzed health data from nearly 3,000 adults who had filled out diet surveys, and determined their incidence of stroke or dementia over 10 years. The findings were alarming.

Compared with people who said they didn’t consume diet drinks, those who had at least one per day suffered three times more strokes, and were three times more likely to develop dementia. Consumption of regular (non-diet) soft drinks was not linked to a higher risk of these brain problems. And the results were unchanged when accounting for other important factors such as gender, diet, smoking, and physical activity.

Of course, there’s more to the story
Before you despair or give up your favorite diet beverage forever, keep in mind that a study of this sort has some major limitations that can lead to faulty conclusions. For example:

It’s impossible to account for every factor that could affect the results. For example, maybe people with diabetes or a family history of diabetes chose sugar-free soft drinks more often than people without diabetes would. So it could be their diabetes and family history, not the diet soft drink consumption, that was responsible for their higher rates of stroke and dementia.

This type of study cannot establish cause and effect. Even if there is a higher rate of brain disease in people who drink more diet soft drinks, we can’t be sure that the diet soft drinks were the cause.

This study did not look at the overall health effects of diet soft drinks; it’s possible they are still a healthier choice than sugar-sweetened beverages.

This study was conducted when most artificially sweetened beverages contained saccharin (Sweet’N Low, Sweet Twin), acesulfame-K (Sunett, Sweet One), or aspartame (NutraSweet, Equal). Newer sweeteners, such as sucralose (as in Splenda) were unlikely to have been included.

While the risk of stroke or dementia was higher among those consuming diet soft drinks, only about 3% of the studied population had strokes and about 5% developed dementia. So, while a higher risk was observed among diet beverage drinkers, the overall risk in those who did or did not drink diet beverages was relatively low.

This study only looked at artificially sweetened soft drinks. It didn’t look at use of artificial sweeteners in foods or beverages other than soft drinks.

To understand how concerned we should be and how artificial sweeteners might cause these health problem (or others), additional research will be needed.

In the meantime...

I have to admit, this study has made me rethink my own habits. Would it be better if I started adding sugar to my coffee rather than my current routine of adding sucralose? I’m not sure. And this study gives me no guidance.

But if you drink a lot of diet soft drinks, this study should give you pause — maybe moderation is in order. Or maybe drinking plain water wouldn’t be such a bad idea

As Workouts Intensify, a Harmful Side Effect Grows More Common

The New York Times
July 17, 2017, by Anahad O’connor
Christina D’Ambrosio, a teacher, suffered rhabdomyolysis after a grueling spin class. Credit Sam Hodgson for The New York Times

Three years ago, Christina D’Ambrosio went to her first spin class, pedaling fast on a stationary bike to the rhythms of popular music as an instructor shouted motivation.

But Ms. D’Ambrosio, who exercises regularly, found the hourlong class was harder than she anticipated. By the end her legs were sore and wobbly.

“I thought my body just wasn’t used to that kind of muscle ache because it was my first class,” said Ms. D’Ambrosio, a kindergarten teacher from Pleasantville, N.Y.

Over the next two days, her legs throbbed with excruciating pain, her urine turned a dark shade of brown, and she felt nauseated. Eventually she went to a hospital, where she was told she had rhabdomyolysis, a rare but life-threatening condition often caused by extreme exercise. It occurs when overworked muscles begin to die and leak their contents into the bloodstream, straining the kidneys and causing severe pain.

After a two-week hospital stay, Ms. D’Ambrosio was released and has since recovered. Her case was highlighted in April in The American Journal of Medicine along with two other cases of spinning-induced rhabdomyolysis treated by the same doctors.

Related Coverage
•  Down for the Count After a Hard Workout JAN. 4, 2014
•  Why Are Americans So Fascinated With Extreme Fitness? OCT. 14, 2014

The report noted that at least 46 other cases of people developing the condition after a spin class were documented in the medical literature, 42 of them in people taking their first class. The report cautioned that the condition was very rare, and not a reason to avoid high-intensity exercise. But the authors said their goal was to raise public awareness so that people who begin a tough new workout program will ease into it to lower their risk of injury.

“I would never discourage exercise, ever,” said Alan Coffino, the chairman of medicine at Northern Westchester Hospital and a co-author of the new study. “Spin class is a great exercise. But it’s not an activity where you start off at full speed. And it’s important for the public to realize this and for trainers to realize this.”

Rhabdo, as many experts call it, has long been documented among soldiers, firefighters and others whose professions can be physically demanding. An Army study in 2012 estimated that about 400 cases of the condition are diagnosed among active-duty soldiers each year. On occasion there have also been large clusters of college athletes hospitalized with it after particularly grueling workouts.

But doctors say they are now seeing more of it among weekend warriors driven in part by the popularity of high-intensity workouts. Spinning in particular has gained a huge following; large chains like FlyWheel, SoulCycle and others report millions of rides and tens of millions in annual sales. Studies show that high-intensity exercise offers myriad health benefits, but for a small subset of people, many of them beginners, rhabdo can crop up and quickly turn ugly.

In 2014, doctors at NewYork-Presbyterian Weill Cornell Medical Center published a report on two patients who arrived at the emergency room with rhabdo shortly after their first spin class. One was a 24-year-old woman hobbled by pain, her legs swollen and feeling “as tight as drums.” She was rushed to surgery, where doctors sliced her thighs open to relieve a dangerous buildup of pressure.
Another study found that between 2010 and 2014, there were 29 emergency room visits for exercise-induced rhabdo at NewYork-Presbyterian alone. Weight lifting, CrossFit, running and P90X were the reasons for some visits. But the most common one was spinning. Dr. Todd S. Cutler, an internist at the hospital and lead author of the study, said the patients all fit a similar profile.

“These are people who are not unfit,” Dr. Cutler said. “They are being pushed too hard, and they’re not trained to do this, and so they get really bad muscle trauma.”

There is some evidence that certain medications, including statins, stimulants and antipsychotic drugs, as well as genetic susceptibilities may contribute to the condition, said Patricia Deuster, a professor of military and emergency medicine at the Uniformed Services University of the Health Sciences.

But in general it occurs when people simply do not give their muscles time to adjust to an aggressive new exercise, experts say. A little damage to muscles is a good thing because that stimulates them to grow and adapt to stress. But when the stress is too great, fibers are destroyed. When that happens they break apart and release compounds that can be harmful to the liver, such as a protein called myoglobin, which causes brown or tea-colored urine, a classic symptom of rhabdo.

While almost any intense activity can cause rhabdo, it almost always strikes people who are doing something new. That is why people should always progress from light to moderate and then vigorous intensity when doing a new exercise, said Eric Rawson, chair of the department of health, nutrition and exercise science at Messiah College in Pennsylvania.

“You can be fit, and I can come up with a workout that you are unaccustomed to, and that could be what causes rhabdo,” he said.

Even elite athletes are not immune. Amy Purdy, a bronze-medalist Paralympic snowboarder and “Dancing With the Stars” contestant, went to an exercise class last year after taking three weeks off from her training regimen. The class consisted of a circuit of challenging exercises, she said, including dozens of pull-ups.

“About halfway through I realized my arms were completely fatigued,” she said.

The next morning she could not straighten her left arm. Then it became sore, stiff and swollen, prompting her to go to a hospital. She remained there for eight days as doctors flushed her kidneys with water, she said. She was diagnosed with rhabdo, and when she wrote about the experience on social media she was inundated with responses.

“Thousands of people have reached out to me on my Instagram page who have had it as well,” she said. “Almost everyone was fit before, got it from pull-ups and is trying to figure out the way to get back into fitness without risking a recurrence.”

Two things can help you avoid rhabdo, said Joe Cannon, an exercise physiologist. Before starting a new program, do a less intense version of it first. That means riding a stationary bike at a moderate pace before starting a spin class, or doing just one set of a weight lifting exercise rather than multiple sets and repetitions.

But the most important advice is to know your limits: Don’t be afraid to leave a class or to say no to a trainer if you are struggling.

“One thing I’ve noticed when people tell me they’ve gotten rhabdo in the gym is that they gave up their personal power,” said Mr. Cannon, author of “Rhabdo: The Scary Side Effect of Exercise You’ve Never Heard Of.” “They kept doing what the instructor told them to do because they did not want to look weak.”
That was the case for Nancy Weindruch, a communications executive at the Council for Responsible Nutrition, a trade group in Washington. In 2015 Ms. Weindruch, who exercised regularly, attended a spin class with her sister, but was not prepared for the instructor’s fast pace and directions to “push past your limits.”

“It went from zero to 60 very quickly,” she said. “Within minutes I knew that I was in over my head. But I swallowed my pride and kept going.”

Three days later, after unbearable pain in her legs, she was admitted to a hospital with rhabdomyolysis and was kept there for six days. Ms. Weindruch eventually returned to exercise, but now she sticks to activities like walking, yoga and the elliptical machine.

“I never thought that exercise could be dangerous,” she said. “But it can be when your body is not prepared for really intense levels.”

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**Why You Should Be Lifting Heavy**

Fit Life, June 30, 2016, by Pete McCall, Contributor

[https://www.acefitness.org/acefit/healthy-living-article/60/6002/why-you-should-be-lifting-heavy](https://www.acefitness.org/acefit/healthy-living-article/60/6002/why-you-should-be-lifting-heavy)

Insanity is often described as doing the same thing over and over, yet expecting different results. This definition could apply to many traditional fitness enthusiasts, who have followed the same workout program for years and wonder why they have stopped experiencing results.

The general adaptation syndrome describes how the human body responds to an exercise stimulus. There is the shock phase, when the exercise stimulus is first applied. This is followed by an adaptation phase of approximately eight to 12 weeks, where the body experiences its greatest response to the exercise stimulus. This leads to the exhaustion phase, when the exercise program stops having the desired effect. This is the basic science behind periodization, which is the practice of adjusting workout intensity on a regular, systematic basis to avoid plateaus.

One sure way to break through a plateau is to change some or all of the variables in the workout program. These variables include: exercise selection, intensity, repetitions, sets, rest interval, tempo (speed of movement) and frequency (the number of exercise sessions in a specific period of time). To stimulate almost immediate changes in your body, increase the amount of weight (thereby increasing the intensity) you use in your workouts. If you find yourself not making any gains or simply want a different exercise program, here are six ways using heavy weights can help you make the changes you want to see in your body.
1. Lifting heavy can cause muscles to grow.

Heavy resistance can recruit and engage more of the type II muscle fibers responsible for generating muscle force. When you lift a heavy weight, you may feel your muscles shaking. This is because your nervous system is working to engage more motor units and muscle fibers to produce the force required to move a weight. Type II muscle fibers are generally responsible for the size and definition of a muscle, so activating more of these fibers can lead help provide immediate results.

2. Lifting heavy improves intramuscular coordination, which is important for improving overall strength.

Intermuscular coordination is the ability of a number of different sections of muscle to work together to produce a movement. Intramuscular coordination is the ability of the fibers that comprise a particular muscle to work together to generate a force. Because it requires more force to contract a muscle, using a heavy resistance can improve the intramuscular coordination in a specific section of muscle, which will also help you become more efficient at generating strength.

3. Lifting heavy can help muscles get stronger without getting bigger.

Sarcoplasmic hypertrophy describes how the sarcoplasm of a muscle increases in size as a result of lifting weights at a moderate to high intensity for a higher number of repetitions (e.g., 10 to 15). Myofibrillar hypertrophy describes how muscle fibers become thicker and denser in response to strength training. Using heavy weights focuses on myofibrillar hypertrophy, resulting in muscle that is thicker and stronger, but not necessarily larger. When lifting an optimal amount of heavy resistance, you should only be able to perform five or fewer repetitions while maintaining good form.

4. Lifting heavy weights can help reduce your biological age.

If you’re over the age of 35, you should definitely be using extremely heavy resistance two to four times a week for periods of four to eight weeks at a time. When adult males hit their mid-30s, they will naturally produce less testosterone unless there is a stimulus that causes the body to produce it. Testosterone is a steroid hormone and is responsible for repairing damaged muscle fibers, which can increase the size and strength output of a muscle. Heavy resistance training is one type of stimulus that can cause males to produce testosterone and help increase bone density, both of which are important markers of biological age. Heavy resistance training can also help women over the age of 35 increase their levels of growth hormone, which is important for developing lean muscle and burning fat.

5. Lifting heavy can help increase your resting metabolism.

One pound of skeletal muscle expends approximately 5 to 7 calories a day at rest. Adding 5 to 7 pounds of muscle can increase your resting metabolism (how efficiently your body produces and uses energy) up to 50 calories a day. This might not sound like a lot, but over the course of a year that is a difference of approximately two-thirds of a pound of fat that you can burn while doing absolutely nothing.
6. Lifting heavy stuff makes you look really cool.

Which gives you bragging rights amongst your friends. The downside is that you will have more requests to help friends or family move furniture, but that’s just the price you have to pay for being ridiculously strong.

Using heavier resistance can be intimidating, because it is a lot harder and the applied force will cause muscle damage. (This is one of the ways that muscles grow; to learn more about muscle growth click here). One side effect of lifting heavy is delayed onset muscle soreness, or DOMS. If you have ever felt DOMS, you know how uncomfortable it can be. While it seems counterintuitive to perform light activity when you’re sore, it can help you recover quicker, which will enable you to do the higher volume of exercise necessary for building muscle and making changes in the body.

**Machine training** can be the safest approach for using extremely heavy weights. For best results, plan on using weights that make five repetitions incredibly challenging (you should not be able to do a sixth rep) and change your program after 10 or 12 weeks so that you’re changing the stimulus to your body. If you want to make sure that you get the best results from your time in the gym, considering hiring an ACE Certified Personal Trainer to help adjust your program so that you are safe when increasing the amount of resistance you use.

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**Interrupted sleep may lead to Alzheimer’s, new studies show**

_The Washington Post_

Health & Science, July 18, 2017, by Tara Bahrampour

[https://www.washingtonpost.com/national/health-science/interrupted-sleep-may-lead-to-alzheimers-new-studies-show/2017/07/17/42fc3736-6b22-11e7-96ab-5f38140b38cc_story.html](https://www.washingtonpost.com/national/health-science/interrupted-sleep-may-lead-to-alzheimers-new-studies-show/2017/07/17/42fc3736-6b22-11e7-96ab-5f38140b38cc_story.html)

Getting a solid night’s sleep is crucial not only for feeling good the next day — there is increasing evidence that it may also protect against dementia, according to new research presented Tuesday at the Alzheimer’s Association International Conference in London.

Three studies by researchers at Wheaton College in Illinois found significant connections between breathing disorders that interrupt sleep and the accumulation of biomarkers for Alzheimer’s disease. Treating the problems with dental appliances or CPAP machines that force air into airways could help lower the risk of dementia or slow its progress, the researchers said.
People with sleep-disordered breathing experience repeated episodes of hypopnea (under-breathing) and apnea (not breathing) during sleep. The most common form, obstructive sleep apnea, occurs in around 3 in 10 men and 1 in 5 women, according to the Alzheimer’s Association.

It occurs when the upper airway closes fully or partially while efforts to breathe continue, and it can wake a person 50 or 60 times a night, interrupting the stages of sleep necessary for a restful night. It often starts in middle age, before clinical signs of Alzheimer’s tend to appear.

In one study of 516 cognitively normal adults 71 to 78 years old, those with sleep-disordered breathing had greater increases in beta-amyloid deposits — one of the biomarkers — over a three-year period. This was true regardless of whether they had the APOE-e4 gene considered a risk factor for Alzheimer’s.

A second study found that obstructive sleep apnea was associated with increases in amyloid buildup in older people with mild cognitive impairment (MCI), and a third found such an association in both normal and MCI subjects.

While correlation between sleep apnea and dementia has been documented in the past, these are among the first longitudinal studies to look at the relationship between sleep disruption and the biomarkers commonly associated with Alzheimer’s disease, said Megan Hogan, one of the Wheaton researchers.

Noting that past research has found that the brain clears up deposits of amyloid plaque during sleep, Hogan hypothesized that apnea may impede this process.

“During sleep . . . your brain has time to wash away all the toxins that have built up throughout the day. Continually interrupting sleep may give it less time to do that,” she said.

It may be in the deepest stages of sleep that the clearing-up takes place, said Ronald C. Petersen, director of the Mayo Clinic Alzheimer’s Disease Research Center and the Mayo Clinic Study of Aging. “If you’re only making it to Stage 1 or Stage 2, and then you start choking or snoring or whatever, and you wake yourself up and you do it again and again, you may not even be aware of it, but you . . . may be accumulating this bad amyloid in the brain rather than clearing it,” he said.

In recent research, people repeatedly jolted awake during the night showed immediate increases in amyloid buildup, Petersen said. And if the sleep disruption continued for a couple of weeks, subjects showed increases in the tau protein tangles that also are associated with Alzheimer’s.

Repeated deprivation of oxygen to the brain that occurs during apnea also may contribute to amyloid buildup, as oxygen regulates an enzyme that plays a role in creating amyloid, Hogan said.

It is not yet clear whether the relationship between apnea and dementia is causative — “whether people with very early levels of brain disease are having trouble sleeping, or whether people having trouble sleeping are more likely to develop brain disease,” said Keith N. Fargo, director of scientific programs and outreach at the Alzheimer’s Association. He noted that animal studies have suggested it could go both ways.

“Ultimately it doesn’t matter what the direction is for this to have an effect on your life,” he said. “If you’re waking up your partner multiple times a night or you’re tired all day, then you really, really need to go get checked by your doctor, because it could be a sign of something serious. Or if it’s not, just treating the apnea could help with your day-to-day cognition.”

A next step in confirming that sleep disruption causes amyloid buildup could be to conduct an intervention with CPAP machines and see if their use reduces the incidence of amyloid buildup, Hogan and Fargo said.
You're not yourself when you're sleepy

ScienceDaily
Date: July 17, 2017
Source: Perelman School of Medicine at the University of Pennsylvania
https://www.sciencedaily.com/releases/2017/07/170717120048.htm

Summary: More than a third of Americans don’t get enough sleep, and growing evidence suggests it’s not only taking a toll on their physical health through heart disease, diabetes, stroke, and/or other conditions, but hurting their mental health as well.

"Poor sleep is associated with a particularly serious sign of depression, suggests new research."

Poor sleep is associated with a particularly serious sign of depression, suggests new research.
Credit: © igorp17 / Fotolia

More than a third of Americans don’t get enough sleep, and growing evidence suggests it’s not only taking a toll on their physical health through heart disease, diabetes, stroke, and/or other conditions, but hurting their mental health as well.

According to a recent study led by Postdoctoral Fellow Ivan Vargas, PhD, in the journal Cognitive Therapy and Research, those who are sleep deprived lose some of their ability to be positive-minded people. That may not sound serious, but medical experts say an inability to think positively is a serious symptom of depression that could be dangerous if left unaddressed. An estimated 16.1 million adults experienced a major depressive episode in 2014.

"In general, we have a tendency to notice positive stimuli in our environment," said Vargas. "We tend to focus on positive things more than anything else, but now we're seeing that sleep deprivation may reverse that bias."

In their study, Vargas and his team took 40 healthy adults, and randomized them to either 28 consecutive hours awake, or a full eight hours of sleep. All participants participated in a computer test measuring their accuracy and response time at identifying happy, sad and neutral faces to assess how they pay attention to positive or negative information.

The team found that those who were acutely sleep deprived were less likely to focus on the happy faces. They didn't necessarily focus more on the negative, but were less likely to focus on the positive. The study may have implications for those experiencing depression and/or anxiety.

There are many symptoms of depression -- including feeling sad and no longer being able to enjoy things you typically would, but poor sleep is associated with a particularly serious sign of the condition.

"Depression is typically characterized as the tendency to think and feel more negatively or sad, but more than that, depression is associated with feeling less positive, less able to feel happy," Vargas says, "Similarly, if you don't get enough sleep, it reduces your ability to attend to positive things, which over time may confer risk for depression."
Interestingly enough, in the present study, those with a history of insomnia symptoms were less sensitive to the effects of the sleep loss. The authors believe this might be because those with a history of insomnia symptoms have more experience being in sleep-deprived conditions and have developed coping methods to modulate the effect of sleep loss.

Vargas and colleagues recently presented a related study at SLEEP 2017, the 31st Annual Meeting of the Associated Professional Sleep Societies LLC, on the association of insomnia and suicide, finding that people who suffer from insomnia are three times more likely to report thoughts of suicide and death during the past 30 days than those without the condition.

The study comes amid a growing body of knowledge associating sleep disorders and depression. For example, ongoing research presented this year at SLEEP 2017 from a multi-center NIH-sponsored "Treatment of Insomnia and Depression" study (abstract 0335 here) suggests that cognitive-behavioral therapy for insomnia (CBT-I) may help achieve depression remission in those suffering from both depression and insomnia who sleep at least 7 hours each night. (A clinical practice guideline published in 2016 in Annals of Internal Medicine recommends CBT-I (not sleep medications) as the initial treatment for chronic insomnia.

Additionally, a new study in the journal Child Development furthers our understanding of the connection between late night cell phone use, mental health, and disrupted sleep, finding that using a cell phone at night can increase depression in teenagers and lower their self-esteem.

Story Source: Materials provided by Perelman School of Medicine at the University of Pennsylvania. Original written by Greg Richter. Note: Content may be edited for style and length.


'Life's Simple 7' Adherence in 20s Tied to Better Brain Health Later
Following lifestyle recommendations in young adulthood pays off later, researchers say

Physician's Briefing
July 20, 2017, HealthDay News
http://www.physiciansbriefing.com/Article.asp?AID=724760

People with heart-healthy habits in their 20s tend to have larger, healthier brains in their 40s, according to a study published online July 19 in Neurology.

Michael Bancks, Ph.D., of the Northwestern University Feinberg School of Medicine in Chicago, and colleagues reviewed data on 518 people participating in a long-range heart health study. The participants, now an average age of 51, had been followed for three decades. They received follow-up exams every two to five years, and underwent
magnetic resonance imaging (MRI) 25 years after entering the study. The research team rated each participant based on how well they followed each of "Life's Simple 7" at the start of the study. The researchers then compared those scores against the MRIs performed in middle age, to see whether living healthy as a young adult mattered years later.

The team found that twenty-somethings who closely followed the guidelines from the American Heart Association had brains in middle age that appeared more than a decade younger than those who didn't follow the guidelines at all. Each 1-point improvement in a young person's heart-healthy lifestyle score was "essentially the same as one year less in brain aging," Bancks told HealthDay. "As the score increases, you see a better result for brain structure." Smoking had a stronger association with smaller brain volume than the other lifestyle factors.

The Life's Simple 7 guidelines promote heart health by urging people to maintain a healthy blood pressure, control cholesterol levels, reduce blood glucose, engage in regular physical activity, eat better, lose weight, and either quit or avoid smoking.

Research shows how physical exercise prevents dementia
Findings show physical activity can influence brain metabolism and prevent the increase in a certain metabolite.

July 21, 2017, by Amy Wallace
https://www.upi.com/Health_News/2017/07/21/Research-shows-how-physical-exercise-prevents-dementia/3921500647043/

A new study by German researchers shows that physical exercise may help prevent dementia in old age. File photo by Shutterstock/UPI/Image Point Fr

July 21 (UPI) -- Researchers at Goethe University in Frankfurt, Germany, have discovered exactly how physical exercise may prevent dementia in old age.

The study, published in the August edition of Nature, examined the effects of regular exercise on brain metabolism and memory in 60 participants age 65 to 85.

The participants were analyzed through the Sport and Metabolism in Older Persons, or SMART, study by assessing movement-related parameters, cardiopulmonary fitness and cognitive performance.

Researchers used magnetic resonance tomography, or MRT, and magnetic resonance spectroscopy, or MRS, to measure brain metabolism and structure.

About half of the study participants were then assigned to either take part in 30-minute training on exercise bikes as part of a 12-week program, and were examined again after its completion.

The study revealed that physical activity did influence brain metabolism by preventing an increase in choline, a metabolite that rises as a result of an increased loss of nerve cells.
Researchers found physical exercise caused a stable cerebral choline concentration in the group that participated in bike training. Choline levels rose in the control group.

Researchers conclude that physical exercise not only improves physical fitness but may also protect cells.

**Hybrid MIND Diet May Preserve Cognition, Cut Dementia Risk**

Medscape


LONDON – A hybrid diet that is aimed at preserving brain health may be key in maintaining cognition and reducing dementia risk, new research suggests.

Encouraging findings from two studies of the MIND diet were presented here at the Alzheimer's Association International Conference (AAIC) 2017. "MIND" is an acronym for Mediterranean-DASH (Dietary Approaches to Stop Hypertension) Intervention for Neurodegenerative Delay.

The Mediterranean diet emphasizes fish, fruits, and vegetables, with olive oil as the main source of fat. DASH is a low-sodium diet that encourages consumption of foods rich in nutrients such as potassium and calcium magnesium that help lower blood pressure.

The MIND diet was developed by Martha Claire Morris, PhD, a nutritional epidemiologist at Rush University, Chicago, Illinois, and colleagues. It is "targeted toward dementia prevention," lead author Claire T. McEvoy, PhD, RD, University of California, San Francisco, told Medscape Medical News.

**Protective Effect on Cognition**

The MIND diet includes 10 "brain-healthy" food groups consisting of green leafy vegetables, other vegetables, nuts, berries, beans, whole grains, fish, poultry, olive oil, and wine. It excludes red meat, butter, margarine, cheese, pastries, sweets, and fried or fast food.

In a study published in 2015 in Alzheimer's and Dementia, the MIND diet lowered the risk for Alzheimer's disease by 53% in participants who rigorously adhered to it and by 35% in those who followed it moderately well.

In one of the new studies presented at the Alzheimer's Association International Conference (AAIC) 2017, investigators led by Dr McEvoy examined the cross-sectional association between cognitive performance and adherence to the MIND diet and to the Mediterranean diet.

The study included 5907 cognitively intact, community-dwelling adults (mean age, 68 years) from the Health and Retirement Study, a representative sample of the US population.

From food frequency questionnaires, researchers generated scores for the Mediterranean diet (range, 0 to 55) and the MIND diet (0 to 15), with higher scores indicating better adherence.

To assess cognition, the researchers used a composite test score of global cognitive function (range, 0 to 27), with poor performance defined as less than one standard deviation below the population mean.
After adjusting for factors that might affect cognition, including age, sex, race, low education, obesity, hypertension, diabetes, depression, smoking, physical activity, and energy intake, the analysis showed that adherence to either diet appeared to protect cognition.

Compared to those with a low score on the Mediterranean diet, participants with mid-range and high scores were significantly less likely to have a poor cognitive performance (odds ratio [OR], 0.82; 95% confidence interval [CI], 0.68 - 0.99; P = .03 and OR, 0.60; 95% CI, 0.49 - 0.75; P < .001, respectively).

Results were similar for the MIND diet. Compared to those with a low score, participants with a mid-range score had a significantly lower risk for poor cognitive performance (OR, 0.82; 95% CI, 0.68 - 0.99; P = .03), as did those with a high score (OR, 0.65; 95% CI, 0.53 - 0.80; P < .001).

Controlling for socioeconomic status "slightly attenuated the results, but they are still very significant," said Dr McEvoy.

Most Promising Approach

There is currently little robust evidence linking diet to cognition. Although some research has shown that the Mediterranean diet has "profound effects" on the vascular system, "there are no clinical trials out there looking at brain health outcomes," Dr McEvoy said.

Population-based studies show mixed results, and many of these studies were conducted "in very specific population groups, like females or older or white people."

The next step is to carry out clinical trials to test the effects of the MIND diet on brain health, said Dr McEvoy.

One Third of Dementia May Be Preventable With Lifestyle Change

Medscape

Coverage from the Alzheimer's Association International Conference (AAIC) 2017, July 20, 2017, by Sue Hughes


LONDON — More than one third of global dementia cases may be preventable by addressing nine lifestyle factors that affect an individual's risk, according to the findings of a new comprehensive report from The Lancet Commission on Dementia Prevention, Intervention, and Care.

The report, presented today at the Alzheimer's Association International Conference (AAIC) 2017 and simultaneously published in The Lancet, was compiled by 24 international experts in the field of dementia who reviewed the available literature in the field and conducted a new meta-analysis that included some risk factors not considered in previous similar analyses.

They found that nine lifestyle factors are responsible for 35% of dementia burden. These factors include not completing secondary education in early life; hypertension; obesity and hearing loss in midlife; and smoking, depression, physical inactivity, social isolation, and diabetes in later life.

"We only considered risk factors for which there was enough data to draw meaningful conclusions, so we are probably underestimating the importance of lifestyle, but we can certainly say it makes a large contribution," said lead author, Professor Gill Livingston, MD, University College London, United Kingdom.
The far-reaching report also addresses interventions and care strategies for patients with dementia and cognitive impairment.

"We have laid out recommendations simply for clinicians on what they can do in terms of treatment," Professor Livingston said. "We have outlined treatment pathways which are highly evidenced based."

10 Key Messages in the Report

1. The number of people with dementia is increasing globally, although incidence in some countries has decreased.

2. Be ambitious about prevention. Recommendations include active treatment of hypertension; increasing childhood education, exercise, social engagement; reducing smoking and better management of hearing loss, depression, diabetes, and obesity.

3. Treat cognitive symptoms. To maximize cognition, people with Alzheimer's disease or dementia with Lewy bodies should be offered cholinesterase inhibitors at all stages, or memantine for severe dementia. Cholinesterase inhibitors are not effective in mild cognitive impairment.

4. Individualize dementia care. Good dementia care should be tailored to unique individual and cultural needs, preferences, and priorities and should incorporate support for family carers.

5. Care for family carers. Family carers are at high risk for depression. Effective interventions to reduce the risk for depression and treat the symptoms should be made available.

6. Plan for the future. People with dementia and their families value discussions about the future and decisions about possible attorneys to make decisions. Clinicians should consider capacity to make different types of decisions at diagnosis.

7. Protect people with dementia. These patients require protection from self-neglect, vulnerability (including to exploitation), managing money, driving, or using weapons. Risk assessment and management at all stages of the disease are essential but should be balanced against the person's right to autonomy.

8. Manage neuropsychiatric symptoms, such as agitation, low mood, or psychosis. Treatment should usually be psychological, social, and environmental, with pharmacologic management reserved for individuals with more severe symptoms.

9. Consider end of life. One third of older people die with dementia, so it is essential that professionals working in end-of-life care consider whether patients have dementia — they might be unable to make decisions about their care and treatment or express their needs and wishes.

10. Technological interventions have the potential to improve care delivery but should not replace social contact.

Emphasis on Lifestyle

"This is a more accurate estimation of the risks for dementia associated with lifestyle factors than we've had before, and we have included more risk factors than have been considered before," Professor Livingston told Medscape Medical News.
For example, she said, they have included social isolation and hearing, which haven’t been covered before, "and we also looked at the whole life course — when these things make a difference. These two things are groundbreaking. We were also able to look at how these risk factors interact with each other when several of them occur together."

They considered all the meta-analyses already available, and where there were none, they did their own, she noted. "There wasn’t a meta-analysis on hearing so we did one, and we found that hearing loss doubled the risk of developing dementia 9 to 17 years later."

Professor Livingston said the new report would be influential in developing future international public health policy. "Our results show it is never too early or never too late to make lifestyle changes that will make a difference."

Noting that around 47 million people are living with dementia globally and that the number is set to almost triple to 131 million by 2050 — with the number of cases increasing most in low- and middle-income countries — she said, "We need to act now to start bringing these numbers down. Addressing these lifestyle factors now could transform future society."

Nine Risk Factors and Their Individual Contribution to Global Dementia

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Contribution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midlife hearing loss</td>
<td>9</td>
</tr>
<tr>
<td>Early life education</td>
<td>8</td>
</tr>
<tr>
<td>Later life smoking</td>
<td>5</td>
</tr>
<tr>
<td>Later life depression</td>
<td>4</td>
</tr>
<tr>
<td>Later life physical inactivity</td>
<td>3</td>
</tr>
<tr>
<td>Later life social isolation</td>
<td>2</td>
</tr>
<tr>
<td>Midlife hypertension</td>
<td>2</td>
</tr>
<tr>
<td>Later life diabetes</td>
<td>1</td>
</tr>
<tr>
<td>Midlife obesity</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

Because of the lack of data, the study did not include dietary factors, alcohol use, visual impairment, air pollution, or sleep. "So the contribution of lifestyle is probably quite a bit more than 35%, but we’re just going with what the evidence has shown," Professor Livingston said.

To put the 35% figure in perspective, the ApoE4 gene is responsible for 7%, the report notes. "Having said that, those with the ApoE4 gene are known to be at significantly increased additional risk and therefore these people in particular should be doing everything they can to address these factors which will reduce their risk," Professor Livingston said.
Another interesting finding from the report is that being fluent in more than one language did not appear to independently affect risk. "We found when we put all the data together that being bilingual was not protective, although people commonly think it is," Professor Livingston commented. "It is probably the education that goes with it that accounts for the findings previously reported."

Commenting on the new report for Medscape Medical News, Maria Carrillo, PhD, Alzheimer's Association chief science officer, called it "the most comprehensive overview of data on prevention, intervention, and care ever conducted.

"It has pulled together all the information we've been hearing about for the past few years," Dr Carillo said. "It is important to realize that we can do something about the Alzheimer's burden now."

The findings on lifestyle factors "give us incredible hope," she added. "What we need to do now is establish what the recipe looks like for the combination of the nine items that have been found relevant, which of these findings are the most actionable, then make the public health recommendations and make sure these reach groups that need them the most — those with the lowest socioeconomic status."

She said the Lancet Commission had contributed important new information on individual risk factors. "We didn't have solid data on hearing loss before, and they have confirmed the risk of smoking — there has been so much back and forth about this," she noted. "They also make an overarching recommendation for more aggressive treatment of hypertension. These are all very actionable — get a hearing aid, stop smoking, pay more attention to blood pressure."

Dr Carrillo pointed out that developing the recipe for more specific public health recommendations will come from new interventional studies now starting around the world. These include the FINGER US randomized study announced this week, which is systemically testing multiple lifestyle changes in a large US population.

This study is building on the previous FINGER study conducted in Finland, which showed that addressing a variety of risk factors simultaneously can have cognitive benefits for people at risk for cognitive impairment and Alzheimer's disease.

Comparisons With NAS Report

The Lancet report comes just a few weeks after the release of a similar US report on Alzheimer's from the US National Academies of Sciences, Engineering, and Medicine (NAS), called "Preventing Cognitive Decline and Dementia: A Way Forward."

That report concluded that: "At present, there is not sufficient strength of evidence to justify large-scale investing in public health activities aimed at preventing dementia." However, it qualified this by saying, "Some results may be viewed as potential added benefits to already identified public health interventions." These were improved blood pressure management for people with hypertension and increasing physical activity.

So why the difference in recommendations from these two major reviews? Representatives from both groups told Medscape Medical News that they approached the issue from different perspectives, with the NAS report focusing on evidence of benefit shown in interventional studies whereas the Lancet report had a wider focus and included more emphasis on epidemiologic data.

Lon Schneider, MD, Keck School of Medicine, University of Southern California, Los Angeles, a member of The Lancet team, said, "Our report was probably more comprehensive on the possibilities for prevention and, yes, we were probably more aggressive in our interpretation of what can be done."

Ron Petersen, MD, Mayo Clinic, Rochester, Minnesota, who was part of the NAS committee, added: "We were more focused on intervention studies, and we placed more weight on randomized controlled trials and on Alzheimer's disease
itself, whereas this new Lancet report has placed more emphasis on prevention based on epidemiological studies. They have also taken a broader view encompassing all cognitive impairment and dementia — not just Alzheimer’s."

"Their projections are very interesting but are more hypothetical than ours," he added. "We do not disagree with them and welcome this new report — it will help drive funding for further research and action in tackling this enormous problem of cognitive impairment and dementia in the aging population around the world."

The Lancet Commission was partnered by University College London, the Alzheimer’s Society UK, the Economic and Social Research Council, and Alzheimer’s Research UK. These organizations provided financial and practical help but had no role in the writing of the manuscript.


Lancet. Published online July 20, 2017. [Abstract]

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**Good Diet, Exercise While Pregnant Could Cut C-section Risk**

These healthy habits also lower odds for other obstetric complications, study shows

July 19, 2017, by Kathleen Doheny, HealthDay Reporter


Eating a healthy diet and exercising during pregnancy isn't just good for the developing baby.

A new analysis of 36 studies including a total of more than 12,500 women suggests these behaviors can also lower a mom-to-be's chances of having a Cesarean-section delivery or developing diabetes while pregnant.

Overall, healthy habits reduced the risk of needing a C-section by about 10 percent, said study author Shakila Thangaratinam. She's a professor of maternal and perinatal health at Queen Mary University of London.

A healthy lifestyle also reduced a woman's risk of developing diabetes during pregnancy -- known as gestational diabetes -- by 24 percent, the findings showed.

Not surprisingly, healthy habits also trimmed the possibility of excess weight gain during pregnancy.

"Based on all the evidence to date, what we found was a healthy diet and moderate physical activity in pregnancy does reduce the risk of increased [excessive] weight gain, and this benefit is actually accessible to every pregnant woman, regardless of [pre-pregnancy] body weight," Thangaratinam said.

However, it's difficult to define exactly what a healthy diet should be or what moderate exercise would be best during pregnancy, she noted, since each study looked at diet and exercise a bit differently.

In general, the diets encouraged eating more fiber, more fish and olive oil, and no sugary drinks. The studies looked at pregnant women who did stationary bicycling, swimming, dancing and toning exercises, she added.
Thangaratinam recommends 150 minutes of moderate activity a week, with aerobic exercise and two muscle-strengthening sessions.

A healthy diet and regular exercise wasn't linked to outcomes such as stillbirth or having an underweight or overweight baby, or whether an infant needed to be in the neonatal intensive care unit, the research team found.

That should be reassuring, Thangaratinam said, because many women are fearful of exercising during pregnancy, thinking it will harm the baby.

The findings are valuable, said Margie Davenport, an assistant professor of physical education and recreation at the University of Alberta in Canada, who has done research in this area. More than half of women gain above or below the weight gain recommendations, she said, and that increases the risk of C-sections, gestational diabetes and other problems.

The study reinforces both the safety and benefits of having a healthy, active lifestyle during pregnancy, Davenport said.

"Currently, only 15 percent of women are active during pregnancy due, at least in part, to a fear that continuing to exercise may be harmful," Davenport explained.

While the study results provide reassurance about the safety of exercise, "all women should speak with their health care professional prior to beginning or continuing to exercise during pregnancy," she said.

One expert noted a limitation of the study.

Eighty percent of the women included in the analysis were white and more than half were of a higher social class, said Marlene Goldman, professor emerita of obstetrics and gynecology at Dartmouth-Hitchcock Medical Center, in Hanover, N.H.

"Studies like this really don't confirm anything," Goldman said. "I would say it suggests a pretty small effect."

But she added that the findings do offer some reassurance that a healthy diet and exercise may actually confer some benefits, at least in the women studied.

In an accompanying journal editorial, Marian Knight, a University of Oxford professor of maternal and child health, and a colleague noted that maternal obesity and excessive weight gain in pregnancy are linked with complications for both mother and baby. The remaining challenge, the editorial writers said, is to research what kind of physical activity is best during pregnancy.

The study was published online July 19 in the BMJ.

More information

To learn more about a healthy pregnancy, visit the U.S. National Institutes of Health.

SOURCES: Shakila Thangaratinam, Ph.D., professor, maternal and perinatal health, Queen Mary University of London; Margie Davenport, Ph.D., assistant professor, physical education and recreation, University of Alberta, Edmonton, Canada; Marlene Goldman, professor emerita, obstetrics and gynecology, Dartmouth-Hitchcock Medical Center, Hanover, N.H.; July 13, 2017, BMJ

Last Updated: Jul 20, 2017

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As Your Weight Creeps Up, So Does Your Risk of Heart Failure
But losing a few pounds might help decrease the damage, cardiologist suggests

HealthDay
July 19, 2017, by Steven Reinberg, HealthDay Reporter

Gaining even a little weight can increase your chances of developing heart failure, a new study finds.

Adding pounds can change the structure of your heart and its ability to pump blood. But losing weight can reverse this potentially deadly process, the researchers said.

"People who gain weight, even as little as 5 percent, are more likely to have thickening of the left side of their heart, which is a well-established indicator of heart failure," said lead researcher Dr. Ian Neeland.

These people "were also more likely to have decreases in their heart's pumping ability," Neeland said. He is an assistant professor of internal medicine at the University of Texas Southwestern Medical Center, in Dallas.

People who lose weight actually improve their hearts by decreasing the thickness of the heart muscle, and that probably lowers their risk for heart failure, he added.

Weight gain in the belly, where fat accumulates around the organs, may produce hormones that can harm the heart and cause inflammation, Neeland said.

Weight gain also puts a strain on the heart, causing it to pump harder, which causes the heart muscle to thicken. "Thick hearts can't compensate for the change and can ultimately fail," he said.

Preventing weight gain is an important way to protect heart health. "The heart is very dynamic, it's very plastic. So small changes over time make big differences," Neeland said.

At the start of the study, more than 1,200 men and women, average age 44, who didn't have heart disease -- or any other condition that put them at high risk for heart disease -- had MRI scans of their heart and several body fat measurements. These were done again seven years later.

The investigators found that people who increased their weight by as little as 5 percent were more likely to have thickening and enlargement of the left ventricle (the left lower chamber of the heart), which is an indicator of future heart failure.

In addition, the study participants were more likely to have small decreases in their heart's pumping ability, Neeland said.

These changes in the heart's structure and function remained even after the researchers took into account other factors that can affect the heart, including high blood pressure, diabetes, smoking and alcohol use.

People who lost weight, however, were more likely to have a decrease in the thickness of their heart muscle, Neeland said.
The researchers also found that how much someone weighed at the start of the study didn't have an effect on changes in their heart.

Neeland said that even people of normal weight can damage their heart if they gain weight over time.

Dr. Byron Lee, a professor of medicine and director of the electrophysiology laboratories and clinics at the University of California, San Francisco, said, "Gaining weight is bad for you, period." Lee was not involved with the new study, but is familiar with the findings.

"In this study, we find out another reason why gaining even a few pounds over time has negative effects on the heart," Lee said. "Patients need to realize that keeping fit is better than any medication a doctor can give them for their long-term health."

The report was published online July 19 in the Journal of the American Heart Association.

More information: To learn more about heart failure, visit the American Heart Association.

SOURCES: Ian Neeland, M.D., assistant professor, internal medicine, University of Texas Southwestern Medical Center, Dallas; Byron Lee, M.D., professor, medicine, and director, electrophysiology laboratories and clinics, University of California, San Francisco; July 19, 2017, Journal of the American Heart Association, online

Wellness Program Benefits Mentally Ill Who Have Obesity


The life expectancy of people with serious mental illness is 25 to 30 years less than that of the general population. The main cause of this early death is heart disease associated with factors that can be changed, such as obesity and tobacco use. People with serious mental illness experience rates of obesity nearly double those in the general population, as well as higher rates of severe obesity at or above the Body Mass Index of 40.

A series of studies by Dartmouth College Prevention Research Center (PRC) shows that a program called InSHAPE is helping people with serious mental illness and severe obesity to lose weight and to be more physically fit. The wellness program was developed by Ken Jue, former chief executive officer for Monadnock Family, a community mental health center in rural New Hampshire. He noticed the patients were dying in middle age because of heart disease. "The idea for the InSHAPE program came to me when I was sitting in a funeral service and it dawned on me that it was my fifth or sixth funeral in a very short period of time," says Jue.

InSHAPE was tested in trials in rural New Hampshire and urban Boston. This study spanning 3 trials and 7 years looked at fitness among participants with serious mental illness and obesity. About half of the participants showed reduced risk
for heart disease with pounds lost or improved scores on a 6-minute walk test. The participants included those with serious mental illness ranging from schizophrenia, to major depression, and bipolar diagnoses.

Coaching Assistance

What's unique about InSHAPE is the focus on an individual health coach trained in fitness, motivational strategies, and nutrition and in working with people with mental illness. The InSHAPE participants:

° Meet weekly at the gym or local fitness facility
° Work on individual nutrition and fitness plans
° Become more socially engaged in the community
° Learn to eat nutritious food and shop for healthy groceries on a tight budget

What's Next

Dartmouth scientists are leading a study of InSHAPE in 48 mental health organizations nationwide to determine how such programs can be implemented in mental health organizations.

Resources:

- About CDC’s Prevention Research Center Program
- InSHAPE Lifestyle Program Research Brief
- About the Dartmouth Prevention Research Center
- American Journal of Preventive Medicine

References:

Exercise and Diet 'Key to a Healthy Pregnancy'

Medscape

News & Perspective, July 21, 2017, by Peter Russell

Half of all women of childbearing age worldwide are overweight or obese, and a new study underlines the importance of a healthy lifestyle during pregnancy to avoid complications for mothers and their babies.
The research, published in The BMJ, says that healthy eating and exercise can limit excess weight gain and lower the chances of having a caesarean section.

Moreover, the benefits are consistent, regardless of a woman's age, ethnicity, body mass index (BMI) and any existing medical conditions, say researchers.

Health Risks of Maternal Obesity

Obesity and weight gain during pregnancy are risky for both mums-to-be and their offspring. Children born to obese mothers are more likely to be obese themselves with the extra risk of developing heart disease, diabetes and other conditions later in life.

Researchers from the International Weight Management in Pregnancy (i-WIP) Collaborative Group investigated the effects of improved diet and boosting physical activity during pregnancy on weight gain and outcomes such as caesareans, stillbirths and newborn admissions to intensive care units.

They analysed results from 36 high quality trials involving 12,526 women.

Some of the women got help improving their diet and exercise levels. These included having access to a dietitian, attending antenatal classes for advice on diet and lifestyle, or going to exercise classes.

Less Weight Gain

Compared to those women who did not receive this help, those who ate better and exercised more gained 0.7 kg (1.5 lbs) less weight.

They were also 9% less likely to have a caesarean, report the researchers from the International Weight Management in Pregnancy Collaborative Group, which is examining weight management interventions for pregnant women.

No effect was seen on other birth outcomes, including stillbirths or admission to special baby care units.

The authors say one drawback to their investigation is that most of the women were white, with a tendency to be well-educated.

Health Initiatives

In a linked editorial, Marian Knight, professor of maternal and child population health at the University of Oxford, and Charlie Foster, senior lecturer for physical activity at Bristol University, write: "The researchers note that at trial entry, 46% of women took no exercise or were sedentary, and perhaps this is where public health initiatives need to focus in the future."

They recommend that "future studies could explore a possible role for strength and balance training in improving pregnancy outcomes, and consider whether pregnancy could be a window of opportunity to change physical activity patterns among women and their families in the longer term".

Dr Virginia Beckett from the Royal College of Obstetricians and Gynaecologists (RCOG) tells us in an emailed statement: "We know that maternal obesity and excessive weight gain during pregnancy leads to an increased risk of women requiring caesarean sections. Overweight women are also more likely to develop health conditions such as gestational diabetes, high blood pressure and pre-eclampsia, and blood clots. In addition, obesity during pregnancy has been linked to an increased risk of miscarriage, stillbirth, neonatal death, premature babies and severe bleeding after birth.
"While most women should put on weight during pregnancy, consuming too many calories can be detrimental to the mother and baby.

"This study demonstrates the importance of maintaining a healthy weight before and during pregnancy through eating a well-balanced diet and taking part in regular exercise. Maintaining a healthy body weight will reduce the risk of complications for both mother and baby, and give children the best start in life."

SOURCES:
1. Effect of diet and physical activity based interventions in pregnancy on gestational weight gain and pregnancy outcomes: meta-analysis of individual participant data from randomised trials, The International Weight Management in Pregnancy (i-WIP) Collaborative Group, The BMJ
2. Diet and exercise in pregnancy: Lifestyle interventions are safe in pregnancy, and help control weight gain, Knight M, Foster C, The BMJ
3. Royal College of Obstetricians and Gynaecologists (RCOG)

WebMD Health News © 2017
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New CDC report: More than 100 million Americans have diabetes or prediabetes
Diabetes growth rate steady, adding to health care burden

For Immediate Release: Weekday, July 18, 2017
Contact: Media Relations, (404) 639-3286

More than 100 million U.S. adults are now living with diabetes or prediabetes, according to a new report released today by the Centers for Disease Control and Prevention (CDC). The report finds that as of 2015, 30.3 million Americans – 9.4 percent of the U.S. population – have diabetes. Another 84.1 million have prediabetes, a condition that if not treated often leads to type 2 diabetes within five years.
The report confirms that the rate of new diabetes diagnoses remains steady. However, the disease continues to represent a growing health problem: Diabetes was the seventh leading cause of death in the U.S. in 2015. The report also includes county-level data for the first time, and shows that some areas of the country bear a heavier diabetes burden than others.

“Although these findings reveal some progress in diabetes management and prevention, there are still too many Americans with diabetes and prediabetes,” said CDC Director Brenda Fitzgerald, M.D. “More than a third of U.S. adults have prediabetes, and the majority don’t know it. Now, more than ever, we must step up our efforts to reduce the burden of this serious disease.”
Diabetes is a serious disease that can often be managed through physical activity, diet, and the appropriate use of insulin and other medications to control blood sugar levels. People with diabetes are at increased risk of serious health complications including premature death, vision loss, heart disease, stroke, kidney failure, and amputation of toes, feet, or legs.

The National Diabetes Statistics Report, released approximately every two years, provides information on diabetes prevalence and incidence, prediabetes, risk factors for complications, acute and long-term complications, mortality, and costs in the U.S.

Key findings from the National Diabetes Statistics Report

The report finds that:

- In 2015, an estimated 1.5 million new cases of diabetes were diagnosed among people ages 18 and older.
- Nearly 1 in 4 four adults living with diabetes — 7.2 million Americans — didn’t know they had the condition. Only 11.6 percent of adults with prediabetes knew they had it.
- Rates of diagnosed diabetes increased with age. Among adults ages 18-44, 4 percent had diabetes. Among those ages 45-64 years, 17 percent had diabetes. And among those ages 65 years and older, 25 percent had diabetes.
- Rates of diagnosed diabetes were higher among American Indians/Alaska Natives (15.1 percent), non-Hispanic blacks (12.7 percent), and Hispanics (12.1 percent), compared to Asians (8.0 percent) and non-Hispanic whites (7.4 percent).

Other differences include:

- Diabetes prevalence varied significantly by education. Among U.S. adults with less than a high school education, 12.6 percent had diabetes. Among those with a high school education, 9.5 percent had diabetes; and among those with more than a high school education, 7.2 percent had diabetes.
- More men (36.6 percent) had prediabetes than women (29.3 percent). Rates were similar among women and men across racial/ethnic groups or educational levels.
- The southern and Appalachian areas of the United States had the highest rates of diagnosed diabetes and of new diabetes cases.

“Consistent with previous trends, our research shows that diabetes cases are still increasing, although not as quickly as in previous years,” said Ann Albright, Ph.D., R.D., director of CDC’s Division of Diabetes Translation. “Diabetes is a contributing factor to so many other serious health conditions. By addressing diabetes, we limit other health problems such as heart disease, stroke, nerve and kidney diseases, and vision loss.”

CDC partnerships to prevent diabetes

To reduce the impact of prediabetes and type 2 diabetes, CDC established the National Diabetes Prevention Program (National DPP), which provides the framework for type 2 diabetes prevention efforts in the U.S.

Based on the landmark Diabetes Prevention Program research findings funded by the National Institutes of Health (NIH), the National DPP includes an evidence-based, year-long, behavior change program to improve eating habits and increase physical activity to lose a modest amount of weight and significantly reduce the risk of type 2 diabetes.

To raise awareness and help people with prediabetes know where they stand and how to prevent type 2 diabetes, CDC, the American Diabetes Association (ADA), and the American Medical Association (AMA), partnered with the Ad Council to launch the first national public service advertising (PSA) campaign about prediabetes. These humorous PSAs in English and Spanish encourage people to take a short online test at DoIHavePrediabetes.org to learn their risk.
Diabetes Rate Greatest Among Transportation Workers

Well-Being, July 26, 2017, by Dan Witters and Diana Liu

Story Highlights
  • Transportation workers have highest diabetes rate at 10.3%
  • They also have the greatest risk of new onset diabetes
  • Physicians have the lowest diabetes rate and the lowest new onset risk

WASHINGTON, D.C. -- U.S. transportation workers led all major occupation types by a large margin in their 2016 diabetes rate, at 10.3%. This is double the rate seen among physicians (5.1%), the occupation with the lowest reported prevalence. Farmers/Fishers/Foresters reported the second-highest rate, at 8.5.

Diabetes Prevalence by Occupation Type

"Has a doctor or nurse ever told you that you have diabetes?" (% yes)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Diabetes rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>10.3</td>
</tr>
<tr>
<td>Farming, fishing or forestry</td>
<td>8.5</td>
</tr>
<tr>
<td>Service</td>
<td>7.7</td>
</tr>
<tr>
<td>Clerical or office</td>
<td>7.7</td>
</tr>
<tr>
<td>Business owner</td>
<td>7.5</td>
</tr>
<tr>
<td>Manufacturing or production</td>
<td>7.5</td>
</tr>
<tr>
<td>Other healthcare professional</td>
<td>6.8</td>
</tr>
<tr>
<td>Nurse</td>
<td>6.8</td>
</tr>
<tr>
<td>Occupation</td>
<td>Diabetes rate</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Installation or repair</td>
<td>6.2</td>
</tr>
<tr>
<td>Teacher (K-12)</td>
<td>6.2</td>
</tr>
<tr>
<td>Manager, executive or official</td>
<td>6.0</td>
</tr>
<tr>
<td>Professional (except teachers and healthcare)</td>
<td>5.7</td>
</tr>
<tr>
<td>Sales</td>
<td>5.5</td>
</tr>
<tr>
<td>Construction or mining</td>
<td>5.5</td>
</tr>
<tr>
<td>Physician</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Gallup-Sharecare Well-Being Index, Jan. 2-Dec. 30, 2016

These results are based on more than 90,000 interviews with U.S. workers conducted throughout 2016 as a part of the *Gallup-Sharecare Well-Being Index*. The Well-Being Index does not differentiate between Type 1 and Type 2 diabetes, but instead asks: "Has a doctor or nurse ever told you that you have diabetes?"

Diabetes remains an ongoing public health problem in the U.S. Researchers estimate that about one in three Americans born in the year 2000 will be diagnosed with diabetes in their lifetime, and the percentage of Americans with the disease will at least double from current levels by the year 2050. Diabetes prevalence by occupation highlights opportunities for employers to implement diabetes prevention and management programs tailored to their workforces.

Overall, in 2016, 11.6% of U.S. adults reported having been diagnosed with diabetes. The average diabetes rate was lower among workers (6.8%), who tend to be younger and in better health than the general population (which includes retirees and the unemployed).

Workers with health insurance are more likely to be diagnosed with diabetes than those without coverage, probably because those with coverage are more likely to routinely see a doctor. However, the large majority of workers have health insurance, and the rates of insurance coverage do not vary enough by occupational category to explain the differences in diabetes diagnoses.

**Transportation Workers Also at Greatest Risk for New Onset Diabetes**

In addition to having the highest current diabetes rate, transportation workers are also at greatest risk of being diagnosed with the disease in the future. Workers in manufacturing/production, installation/repair and construction/mining round out the top four occupations most at risk of new diabetes diagnoses.

This is based on an analysis of several key risk factors for developing diabetes. Chief among these is obesity, which quadruples the risk of diabetes across most age groups -- particularly those aged 25 to 64, who are generally in their prime working years. Other risk factors include smoking, heavy drinking, a poor diet and a sedentary lifestyle.

The four industries that have the highest risk of developing diabetes have poor performance on these key behavioral risk factors. For example:
Transportation workers have by far the highest obesity level at 40.3%, followed by manufacturing/production workers at 31.2%.

Construction/Mining workers have the highest smoking rate at 30.2% and the highest percentage of heavy drinking (15+ alcoholic drinks per week) at 10.1%, while installation/repair workers have the second-highest smoking rate at 27.2%.

Transportation workers trail only clerical/office workers for the lowest percentage of getting at least three days of 30+ minutes of exercise per week.

Other factors, such as age, race/ethnicity and genetic predisposition can all increase the chances of any given individual developing diabetes. This may explain why some occupation types such as construction/mining have workers with a high risk of developing the disease, but low diabetes rates currently -- and vice versa in the case of farmers/fishers/foresters. It is also important to note that the diagnosis of diabetes for some respondents may have occurred many years before they were interviewed, and accordingly, their health status and behaviors today are not necessarily the same as they were at the time of their diagnosis. Regardless, making behavioral changes that are within one's control is critical for preventing new onset of diabetes and managing the disease once it is diagnosed.

### Diabetes Rate and Rates of Associated Risk Factors by Occupation Type

<table>
<thead>
<tr>
<th>Occupation Type</th>
<th>Risk level of new onset diabetes</th>
<th>Obese %</th>
<th>15+ alcoholic drinks per week %</th>
<th>Smoker %</th>
<th>&lt;3 days exercise last week %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>Highest</td>
<td>40.3</td>
<td>5.1</td>
<td>26.7</td>
<td>48.6</td>
</tr>
<tr>
<td>Manufacturing or production</td>
<td>Above average</td>
<td>31.2</td>
<td>6.0</td>
<td>26.2</td>
<td>44.4</td>
</tr>
<tr>
<td>Installation or repair</td>
<td>Above average</td>
<td>27.4</td>
<td>8.7</td>
<td>27.2</td>
<td>41.9</td>
</tr>
<tr>
<td>Construction or mining</td>
<td>Above average</td>
<td>25.4</td>
<td>10.1</td>
<td>30.2</td>
<td>38.2</td>
</tr>
<tr>
<td>Service</td>
<td>Average</td>
<td>27.8</td>
<td>4.0</td>
<td>23.3</td>
<td>44.3</td>
</tr>
<tr>
<td>Manager, executive or official</td>
<td>Average</td>
<td>27.6</td>
<td>4.9</td>
<td>14.9</td>
<td>43.7</td>
</tr>
<tr>
<td>Clerical or office</td>
<td>Average</td>
<td>28.4</td>
<td>2.1</td>
<td>14.0</td>
<td>50.4</td>
</tr>
<tr>
<td>Sales</td>
<td>Average</td>
<td>25.0</td>
<td>4.5</td>
<td>17.6</td>
<td>44.9</td>
</tr>
<tr>
<td>Farming, fishing or forestry</td>
<td>Average</td>
<td>26.0</td>
<td>6.1</td>
<td>17.9</td>
<td>33.2</td>
</tr>
<tr>
<td>Nurse</td>
<td>Average</td>
<td>27.2</td>
<td>1.4</td>
<td>11.7</td>
<td>44.3</td>
</tr>
<tr>
<td>Other healthcare professional</td>
<td>Average</td>
<td>25.4</td>
<td>2.7</td>
<td>11.9</td>
<td>42.5</td>
</tr>
<tr>
<td>Business owner</td>
<td>Below average</td>
<td>22.5</td>
<td>5.7</td>
<td>15.4</td>
<td>41.2</td>
</tr>
<tr>
<td>Professional (except teachers and healthcare)</td>
<td>Below average</td>
<td>23.2</td>
<td>4.4</td>
<td>10.8</td>
<td>42.8</td>
</tr>
<tr>
<td>Teacher (K-12)</td>
<td>Below average</td>
<td>25.3</td>
<td>2.0</td>
<td>5.2</td>
<td>44.5</td>
</tr>
</tbody>
</table>
Risk level of new onset diabetes

<table>
<thead>
<tr>
<th>Physician</th>
<th>Lowest</th>
<th>15+ alcoholic drinks per week</th>
<th>Smoker</th>
<th>&lt;3 days exercise last week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
</tbody>
</table>

Gallup-Sharecare Well-Being Index, Jan. 2-Dec. 30, 2016

Implications

U.S. workplaces are not immune from the slow but steady rise in the diabetes rate over the last decade. The prevalence of diabetes for some job types -- in particular transportation and farming/fishing/forestry -- is alarmingly high and can be costly. The estimated annual cost of diabetes to the U.S. economy because of financial burden, healthcare utilization and lost productivity in the workplace is $245 billion per year, according to a 2013 American Diabetes Association report.

This cost is likely disproportionately higher for the transportation industry, given its workers' exceptionally high diabetes rate and elevated risk of future diabetes diagnoses. Employers in the manufacturing/production, installation/repair and construction/mining industries also face daunting challenges with high percentages of workers who -- regardless of factors that are outside of their control such as age or genetics -- are substantially increasing their chances of getting diabetes. And while workers in some industries such as construction/mining are younger than average and consequently less likely than most counterparts to already have diabetes, their choices and current overall health substantially elevate their odds of eventually being diagnosed.

Practical solutions can help curtail this trend. Population health programs such as the Blue Zones Project in the Beach Cities, California, have a proven track record of reducing above-normal weight and smoking while boosting exercise and healthy eating, resulting in reduced diabetes prevalence among residents. Employers, too, can play a decisive role in the lives of their workers -- including remote workers -- by establishing incentives, recognition systems and a workplace culture designed to promote active living and healthy choices.

"There is a pressing need for diabetes education outside the traditional walls of the hospital," says Shelia Holcomb, vice president of Sharecare Diabetes Solutions. "Weight management, nutrition and physical activity programs in the workplace are important topics to help prevent and manage Type 2 diabetes. Employers, especially those who have high-risk populations, should collaborate with their local hospital or health system to bring pre-diabetes and diabetes education to their workforces, thus improving the health and performance of their employees and reducing their future healthcare costs."

More broadly, Gallup research has found that workers with high well-being are significantly less likely than those with poor well-being to gain new onset diabetes 18 months later. Furthermore, this relationship was found across five key areas of well-being (purpose, social, financial, community and physical). This underscores the need for employers to help their workers thrive in all aspects of well-being, rather than physical wellness alone, to combat the rise of diabetes and its associated costs in their workplaces.

Read more about the state of diabetes in the U.S. in Gallup and Sharecare's Face of Diabetes report.

Survey Methods

Results are based on telephone interviews conducted Jan. 2- Dec. 30, 2016, as part of the Gallup-Sharecare Well-Being Index survey, with a random sample of 91,424 workers aged 18 and older, living in all 50 U.S. states and the District of
Columbia. For each reported group, the margin of sampling error ranges from a high of ±3.0 percentage points for those in the sales industry to a low of ±0.5 points for transportation workers at the 95% confidence level. All reported margins of sampling error include computed design effects for weighting.

For the risk factor analysis, Gallup and Sharecare applied a unique weight derived from a regression model to account for each of the risk factors' differing influence on diabetes occurrences and then computed an overall future risk level for each occupation type (regardless of current diabetes prevalence).

Each sample of national adults includes a minimum quota of 60% cellphone respondents and 40% landline respondents, with additional minimum quotas by time zone within region. Landline and cellular telephone numbers are selected using random-digit-dial methods.

Learn more about how the [Gallup-Sharecare Well-Being Index](https://www.gallup.com/services/60875) works.

### Sample Sizes of Occupational Categories

<table>
<thead>
<tr>
<th>Occupational Category</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>19,158</td>
</tr>
<tr>
<td>Farming, fishing or forestry</td>
<td>10,352</td>
</tr>
<tr>
<td>Service</td>
<td>3,674</td>
</tr>
<tr>
<td>Clerical or office</td>
<td>6,377</td>
</tr>
<tr>
<td>Business owner</td>
<td>7,332</td>
</tr>
<tr>
<td>Manufacturing or production</td>
<td>12,922</td>
</tr>
<tr>
<td>Other healthcare professional</td>
<td>5,997</td>
</tr>
<tr>
<td>Nurse</td>
<td>3,939</td>
</tr>
<tr>
<td>Installation or repair</td>
<td>3,041</td>
</tr>
<tr>
<td>Teacher (K-12)</td>
<td>2,913</td>
</tr>
<tr>
<td>Manager, executive or official</td>
<td>2,620</td>
</tr>
<tr>
<td>Professional (except teachers and healthcare)</td>
<td>3,833</td>
</tr>
<tr>
<td>Sales</td>
<td>1,277</td>
</tr>
<tr>
<td>Construction or mining</td>
<td>2,729</td>
</tr>
<tr>
<td>Physician</td>
<td>5,266</td>
</tr>
</tbody>
</table>

*Gallup-Sharecare Well-Being Index, Jan. 2-Dec. 30, 2016*
Obesity Quadruples Diabetes Risk for Most U.S. Adults

Well-Being, April 6, 2017, by Dan Witters and Diana Liu

Story Highlights
- Obesity linked to diabetes across all age groups
- Among obese adults, increased risk of diabetes highest from ages 35 to 39
- Obesity elevates diabetes risk more for women than for men

WASHINGTON, D.C. -- Obese adults between the ages of 25 and 64 are at least four times more likely to have been diagnosed with diabetes than those who are normal weight, according to the Gallup-Healthways Well-Being Index. By their mid-to-late 30s, 9.3% of adults who are obese have been diagnosed with diabetes, compared with 1.8% among those who are normal weight.

These results are based on nearly 500,000 interviews conducted in the U.S. from 2014 through 2016 as part of the Gallup-Healthways Well-Being Index.

Unlike some government estimates of obesity, the Gallup-Healthways Well-Being Index uses respondents’ self-reported height and weight to calculate body mass index (BMI) and subsequent weight classes. It does not involve clinical measurements that typically result in higher obesity estimates. A BMI of 30 or higher results in an obese classification. Additionally, the Well-Being Index does not discern between Type 1 and Type 2 diabetes, but rather asks: "Has a doctor or nurse ever told you that you have diabetes?"
In 2016, 28.4% of all U.S. adults were classified as obese, and 11.6% reported having been diagnosed with diabetes. Researchers from the Centers for Disease Control and Prevention (CDC) have estimated that about one in three Americans born in the year 2000 will be diagnosed with diabetes in their lifetime, and that the percentage of Americans with the disease will at least double from current levels by the year 2050.

Not all individuals who are obese will develop diabetes, and some who are normal weight will get the disease. Factors other than obesity status or age could increase the risk of developing diabetes, including physical inactivity, race and ethnicity, and genetic predisposition.

Still, the odds of having been diagnosed with diabetes are substantially higher among those who are obese than among those who are overweight or normal weight, and remain elevated between the ages of 25 and 64. The peak years of elevated risk are between ages 35 and 39. At this stage in life, obese individuals are over five times more likely than their normal weight counterparts to have been diagnosed with diabetes.

**Women Have Higher Diabetes Risk Because of Obesity**

In 2016, women were only slightly more likely than men to report having been diagnosed with diabetes -- 11.7% to 11.4%, respectively. Women who are obese, however, are more likely than obese men to have diabetes across all age groups up to age 60, at which point both groups converge.

The increased diabetes risk is considerably higher for obese women than for obese men across most age groups. For example, obese women aged 50 to 54 are six times more likely than women who are normal weight to have diabetes, while obese men of the same age are only about three times more likely than their normal weight counterparts to have diabetes.
The results of this analysis cannot establish a causal relationship between obesity and diabetes, as individuals are not asked to confirm the age at which they were diagnosed with diabetes and their height and weight at the time of the diagnosis. Some who were obese when interviewed may have been normal weight at an earlier age when they were diagnosed with diabetes, and some who were normal weight (or overweight) at the time of the interview may have been obese at the point of their diagnosis.

The results do, however, add to a significant body of research that demonstrates the unambiguous link between the two diseases: Those who are obese carry a significantly higher risk of developing diabetes.

**Implications**

Obesity has climbed steadily in the U.S. since 2008, increasing nearly three percentage points to 28.4% in 2016. This means there are now 7 million more U.S. adults who are obese than would have been the case if the rate had held steady at the 2008 level.

Diabetes, in turn, has climbed by one point since 2008, to 11.6%. Every three-point increase in the U.S. obesity rate is associated with a roughly one-point increase in the diabetes rate.

The findings from this analysis show the strength of the relationship between obesity and diabetes, even for young adults. By their mid-to-late 20s, obese individuals are already four times more likely than their normal weight counterparts to have been diagnosed with diabetes. This increased risk only grows over the next decade before peaking between the ages of 35 and 39. As such, communities, businesses and healthcare providers should pursue efforts to curtail obesity at the earliest possible time and with increased urgency.

The costs of obesity are substantial. In unplanned absenteeism alone, obesity and associated chronic conditions have been estimated to cost the U.S. economy $153 billion annually. This economic impact is likely exacerbated given that the obesity-diabetes link is greatest among adults in their prime working years.
Curtailing the relentless climb of obesity and associated chronic conditions such as diabetes can be accomplished. Hospitals can put in place diabetes management programs to help people who have already been diagnosed, as well as diabetes prevention programs for those who are at risk.

"The best diabetes management programs are comprehensive -- delivering professional education, inpatient glycemic management, outpatient prevention, and self-management education and support -- and they engage multidisciplinary teams for coordinated care," said Sheila Holcomb, vice president, Sharecare Diabetes Solutions. "They focus on metrics such as achieving glycemic targets and reducing average length of inpatient stays."

Additionally, at the community level, initiatives like the Blue Zones Project -- an organization that specializes in transforming communities across the U.S. into higher well-being places -- has compiled many success stories.

For example, between 2010 and 2015 the California Beach Cities (Redondo Beach, Manhattan Beach and Hermosa Beach) had a 9.2-point decline in adults who were either overweight or obese, coupled with a 1.1-point decline in diabetes. This was done in part through close planning and cooperation with the Beach Cities Health District to transform both the physical structure of each community and the culture itself, resulting in a population that is healthier and better informed about what is needed to best pursue a life well-lived.

See the Gallup-Healthways report on U.S. diabetes prevalence across states and communities here.

These data are available in Gallup Analytics.

Survey Methods

Results are based on telephone interviews conducted Jan. 2, 2014-Dec. 30, 2016, as part of the Gallup-Healthways Well-Being Index, with a random sample of 484,350 adults aged 18 and older, living in all 50 U.S. states and the District of Columbia. The smallest sample size for all adults is for those who were classified as obese and aged 25 to 29 (n=5,789); the largest sample size is for those classified as normal weight and aged 18 to 24 (n=21,372). These sample sizes were reduced by roughly half when parsed by gender. The margin of sampling error for each reported BMI class within each age group is no more than ±0.2 percentage points in most cases. All reported margins of sampling error include computed design effects for weighting.

Each sample of national adults since Sept. 1, 2015, included a minimum quota of 60% cellphone respondents and 40% landline respondents, with additional minimum quotas by time zone within region. Prior sampling dating back to Jan. 2, 2014, involved a 50% split between cellphone and landline interviews. Landline and cellular telephone numbers are selected using random-digit-dial methods.

Learn more about how the Gallup-Healthways Well-Being Index works.

Why Type 2 Diabetes Is on the Rise in Children and Teens
Here's what parents can do to help slash that risk.

July 25, 2017, by Vanessa Caceres, Contributor
Newly diagnosed cases of Type 2 diabetes in children and teens increased by about 4.8 percent each year between 2002 and 2012. (Getty Images)

With the rise in Type 2 diabetes among adults, you may wonder if there’s also an increase among children and young adults. Turns out, there sure is.

A large study called SEARCH for Diabetes in Youth found that newly diagnosed cases of Type 2 diabetes in children and teens increased by about 4.8 percent in each year of the study’s period between 2002 and 2012.

[Read: 12 Ways to Better Manage Your Child's Diabetes.]

What’s driving this increase? “Prior to the 1980s, Type 2 diabetes was extremely uncommon in children and adolescents,” says diabetologist and certified diabetes educator Dr. Fran Cogen, interim co-chief of the Division of Endocrinology and Diabetes, director of the Childhood and Adolescent Diabetes Program at Children’s National Health System and professor of pediatrics at George Washington University School of Medicine and Health Sciences in the District of Columbia. “Unfortunately, the rate has increased as our lifestyles have become increasingly sedentary, and we’ve seen an explosion of processed, high-sugar and fast-food options.” Couple that with lower physical activity and more time in front of screens, and that’s a recipe for an increased diabetes risk.

Poor diet choices and lower levels of physical activity increase the risk for obesity, which is the most powerful determinant of Type 2 diabetes in childhood, adolescence and young adulthood, says Dr. Michael Freemark, professor of pediatrics and chief of the Division of Pediatric Endocrinology and Diabetes at Duke University Medical Center in Durham, North Carolina. In fact, several large population studies have found that childhood obesity that continues in the teen years can increase the risk for adult-onset Type 2 diabetes four- to 28-fold, Freemark says. “It’s therefore not surprising that the global rise in the prevalence of childhood Type 2 diabetes has coincided with a dramatic increase in childhood obesity,” he says.

There’s also a genetic role in Type 2 diabetes. In other words, if you have a parent or sibling who has it, there’s a greater chance that you’ll develop the disease as well.

It can be confusing to try and track Type 2 diabetes symptoms, especially in children. Sometimes, there are no symptoms. However, increased thirst, urination, bedwetting and unexplained weight loss could indicate Type 2 diabetes. Another symptom in children is a darkening around the neck and underarms, which is a sign of insulin resistance, says Dr. Robert Rapaport, professor of pediatrics and chief of the Division of Pediatric Endocrinology and Diabetes at the Icahn School of Medicine at Mount Sinai in New York. Insulin resistance is when your body can’t respond correctly to the insulin it produces.

Other possible symptoms of Type 2 diabetes include early puberty, especially in at-risk population groups such as African-Americans and American Islanders, Rapaport says. An increasing number of Staphylococcus skin infections or vaginal yeast infections in girls also can be signs of Type 2 diabetes.

Of course, depending on your child’s age, you may not spot all of the symptoms easily, and your child may not share them or even be aware of them.

Parents may not always have Type 2 diabetes on their minds. “That’s one of the scariest factors of the disease. In many cases, it’s not even on a parent’s radar,” Cogen says.

[Read: What Are the Differences Among Type 1, Type 2 and Gestational Diabetes?]
Even in parents who are aware of diabetes risks, it’s hard to overcome factors like the convenience of fast food, the lack of time to prepare healthier food at home and the higher cost of certain fresh foods. “Parents may also fail to connect the dots between their own family histories of metabolic disease and the child’s risk of obesity and Type 2 diabetes,” Freemark explains.

If you suspect your child has symptoms of Type 2 diabetes, make sure to visit your family doctor or pediatrician. Their office can consider screening for diabetes. When a child is very overweight or has signs of insulin resistance, health professionals are more likely to check blood sugar and possibly hemoglobin A1C level, Freemark says. If there’s a family history of diabetes or signs of polycystic ovary syndrome in teenage girls (including menstrual irregularity and having acne or excess facial hair), there’s a greater chance that they will get their blood sugar tested. A pediatric endocrinologist may need to help care for a child or teen with abnormal results.

Here are some ways to help lower your child’s risk for Type 2 diabetes:

As a family, plan to eat healthier and exercise more. “The key is to make small, incremental changes that the whole family can participate in so no one feels isolated or singled out,” Cogen says. These small changes can help your child lose weight if that’s a problem, and that lowers the chance of developing Type 2 diabetes. Healthier habits are especially important when there’s a long family history of diabetes, but there shouldn’t be the impression that anyone will inevitably develop Type 2 diabetes. “Operating as a team, a family, is much more likely to be successful,” she adds.

Find out about healthier food choices. These include lean meats, vegetables and fruits and fewer concentrated sweets, sugars, high-density starchy foods, saturated fats and fried and fast foods, Freemark says.

[See: The 12 Best Diets to Prevent and Manage Diabetes.]

Educate your children as they get older. This creates awareness that will help them when they are adults. For example, research finds that young adult women should have a healthy weight even before they get pregnant to reduce the chances of diabetes both for themselves and their future children, Freemark says. By arming them with information as a teen or young adult, they can make better choices.

Although the increase in Type 2 diabetes in children and teens may seem daunting, there is a silver lining, Freemark says. The risk for Type 2 diabetes in people who were overweight or obese as children but not as adults was no higher than the Type 2 diabetes risk in adults who were never overweight. In other words, you can cut your risk if you lose weight earlier in life. “This encouraging finding suggests that reversal of childhood obesity may prevent subsequent development of Type 2 diabetes,” he says.

One-third of dementia cases could be prevented, report says

July 20, 2017, by Ashley Welch, CBS News

One-third of cases of dementia worldwide could potentially be prevented through better management of lifestyle factors such as smoking, hypertension, depression, and hearing loss over the course of a lifetime, according to a new report.
Across the globe, about 47 million people were living with Alzheimer’s and other forms of dementia in 2015. That number is projected to triple by the year 2050 as the population ages. Health care costs associated with dementia are enormous, with an estimated $818 billion price tag in 2015.

The new study, published in The Lancet and conducted by the first Lancet Commission on Dementia Prevention and Care, brought together 24 international experts to review existing dementia research and provide recommendations for treating and preventing the devastating condition.

"Dementia is the greatest global challenge for health and social care in the 21st century," lead study author Professor Gill Livingston, of University College London, told CBS News. "The purpose of the commission was therefore to address it by consolidating the huge strides and emerging knowledge as to what we should do to prevent dementia and intervene and care for people with dementia."

There is currently no drug treatment to prevent or cure dementia. But the report highlights the impact of non-drug interventions and identifies nine modifiable risk factors through various stages of life — beginning in childhood — that affect the likelihood of developing dementia.

### Worried about Alzheimer’s? Ways to reduce your risk

To reduce the risk, factors that make a difference include getting an education (staying in school until over the age of 15); reducing high blood pressure, obesity and diabetes; avoiding or treating hearing loss in mid-life; not smoking; getting physical exercise; and reducing depression and social isolation later in life. About 35 percent of dementia cases are attributable to these factors, the analysis found. Removing them could then theoretically prevent 1 in 3 cases.

In contrast, finding a way to target the major genetic risk factor, a gene called the apolipoprotein E (ApoE) ε4 allele, would prevent less than 1 in 10 cases – or about 7 percent.

"There's been a great deal of focus on developing medicines to prevent dementia, including Alzheimer's disease," commission member Lon Schneider, M.D., a professor of psychiatry and the behavioral sciences at the Keck School of Medicine of USC, said in a statement. "But we can't lose sight of the real major advances we've already made in treating dementia, including preventive approaches." Schneider presented the findings at the Alzheimer's Association International Conference (AAIC) 2017.

Of the nine risk factors, the researchers identified the three most common ones that could be targeted for dementia prevention.

The first is increasing education in early life, which the report estimated could reduce the total number of dementia cases by 8 percent if all people worldwide continued their education until over the age of 15.

The researchers note that not completing secondary education could raise dementia risk by reducing what's referred to as "cognitive reserve." It's believed that education and other mentally stimulating tasks help the brain strengthen its networks so it can continue to function at a higher level even if it starts to decline later in life.

For the first time, the researchers also identified hearing loss as a major modifiable risk factor for dementia. They estimated that reducing hearing loss in mid-life could also reduce the number of dementia cases by 9 percent if all people were treated.
Livingston notes that research surrounding hearing loss and dementia is still in early stages and the link likely has something to do with the social isolation that can come with losing the ability to hear.

"They may work in similar ways as they reduce the chance of interactions and conversations, which are like exercise for the brain and enrich it and predispose to depression," she said.

It's not clear from medical research yet whether using hearing aids can counteract this risk.

Additionally, the researchers found the number of dementia cases worldwide could be reduced by 5 percent if all people stopped smoking. It's particularly important to stop smoking later in life, they say, to reduce neurotoxins and improve heart health, which in turn improves brain health.

Other interventions likely to reduce dementia rates include increased physical activity and treating high blood pressure and diabetes.

The study authors say the report can offer guidance on ways to reduce the risk of dementia throughout life and improve the care for those living with the disease.

"This includes providing safe and effective social and health care interventions in order to integrate people with dementia within their communities," Schneider said. "Hopefully this will also ensure that people with dementia, their families and caregivers, encounter a society that accepts and supports them."

It's important to note that lifestyle interventions will not delay or prevent all dementia cases. But the researchers say they are hopeful that the report will help shift more focus to concrete steps that can be taken to help avoid the disease.

"We hope that this report will feed into individual nations' dementia policies and public health strategies, be used by individual clinicians to inform and improve their practice, and through media publicity inform the general public of what they can do to help avoid dementia, which is the most feared illness in old age."

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Summary: Everyone knows that exposure to pollution during rush hour traffic can be hazardous to your health, but it's even worse than previously thought. In-car measurements of pollutants that cause oxidative stress found exposure levels for drivers to be twice as high as previously believed.

A dashboard view from a vehicle taking measurements of certain types of pollutants during rush hour in Atlanta. Credit: Duke University

The first in-car measurements of exposure to pollutants that cause oxidative stress during rush hour commutes has turned up potentially alarming results. The levels of some forms of harmful particulate matter inside car cabins was found to be twice as high as previously believed.

Most traffic pollution sensors are placed on the ground alongside the road and take continuous samples for a 24-hour period. Exhaust composition, however, changes rapidly enough for drivers to experience different conditions inside their vehicles than these roadside sensors. Long-term sampling also misses nuanced variabilities caused by road congestion and environmental conditions.

To explore what drivers are actually exposed to during rush hour, researchers from Duke University, Emory University and the Georgia Institute of Technology strapped specially designed sampling devices into the passenger seats of cars during morning rush hour commutes in downtown Atlanta.

The devices detected up to twice as much particulate matter as the roadside sensors. The team also found that the pollution contained twice the amount of chemicals that cause oxidative stress, which is thought to be involved in the development of many diseases including respiratory and heart disease, cancer, and some types of neurodegenerative diseases.

The results were published on June 27 in the journal Atmospheric Environment.

"We found that people are likely getting a double whammy of exposure in terms of health during rush-hour commutes," said Michael Bergin, professor of civil and environmental engineering at Duke. "If these chemicals are as bad for people as many researchers believe, then commuters should seriously be rethinking their driving habits."

For the experiment, Roby Greenwald, a research assistant professor at Emory at the time, built a sampling device that draws in air at a similar rate to human lungs to provide detectable levels of pollution. The device was then secured to the passenger seats of more than 30 different cars as they completed more than 60 rush hour commutes.

Some drivers took highway routes while others stuck to busy thoroughfares in downtown Atlanta. While other details like speed and having windows rolled down varied, all of the sampling found more risk in air exposure than previous studies conducted with roadside sampling devices.

"There are a lot of reasons an in-car air sample would find higher levels of certain kinds of air pollution," said Heidi Vreeland, a doctoral student in Bergin's lab and first author of the paper. "The chemical composition of exhaust changes very quickly, even in the space of just a few feet. And morning sun heats the roadways, which causes an updraft that brings more pollution higher into the air."
Reactive oxygen species found by this study can cause the body to produce chemicals to deal with the reactive oxygen. Particulate matter causes the same response. In combination, the exposure triggers an overreaction that can be destructive to healthy cells and DNA.

Oxidative stress -- the phenomenon antioxidant foods are supposed to address -- is thought to play a role in a wide range of diseases including Asperger's syndrome, ADHD, cancer, Parkinson's disease, Alzheimer's disease, atherosclerosis, heart failure and heart attack, sickle cell disease, autism, infection, chronic fatigue syndrome and depression.

"There's still a lot of debate about what types of pollution are cause for the biggest concern and what makes them so dangerous," Bergin said. "But the bottom line is that driving during rush hour is even worse than we thought."

"My two cents is that this is really an urban planning failure," said Greenwald, who is now an assistant professor of environmental health at Georgia State University. "In the case of Atlanta, the poor air quality on the highways is due to the fact that 6 million people live in the metro area, and most of them have little choice but to get into an automobile to go to work or school or the store or wherever. Auto-centric transportation plans do not scale well to cities of this size, and this is one more example of how traffic negatively affects your health."

Story Source: Materials provided by Duke University. Note: Content may be edited for style and length.


**Physical Activity, Healthy Diet Improve Survival in Colorectal Cancer: Study at ASCO**

Results from a collaborative study across the United States indicate that patients with colon cancer who had a healthy body weight, engaged in physical activity, and ate a healthy diet had longer survival.

Published Online: July 19, 2017, by Surabhi Dangi-Garimella, PhD

A COLLABORATIVE STUDY, conducted at various cancer institutions across the United States, evaluated the impact of following the 2012 American Cancer Society Nutrition and Physical Activity Guidelines1 for Cancer Survivors and concluded that patients with colon cancer who had a healthy body weight, who engaged in physical activity, and ate a healthy diet had longer overall (OS) and disease-free survival (DFS). Results from the 7-year median follow-up were presented at the 2017 American Society of Clinical Oncology (ASCO) Annual Meeting in Chicago.2

More than 1.3 million individuals in the United States have been diagnosed with colorectal cancer (CRC). With the ACS’ release of its guidelines for CRC survivors, the authors were curious to find out if they improved outcomes among patients who adhered to them. The prospective study included 992 patients with stage III colon cancer who received adjuvant chemotherapy between 1999 and 2001. Researchers assessed lifestyle twice and assigned a score, known as the McCullough score, that quantified patient adherence to the guidelines (Table) in the context of their body mass index, physical activity, and a diet of vegetables, whole grains, and red or processed meats. While alcohol was included in the guideline for cancer prevention, it was not included in the survivor guide. However, the authors included it in calculating the McCullough score.

The study documented 335 recurrences and 299 deaths (43 without recurrence) during the follow-up period. Patients who scored between 5 and 6 points (91; 9%) had a 42% lower risk of death (HR, 0.58; 95% CI, 0.34-0.99) compared with those who scored between 0 and 1 (262; 26%). The higher-scoring group of patients also had a better DFS (HR, 0.69; 95% CI, 0.45-1.06) compared with their lower-scoring counterparts. Including alcohol intake in the score further reduced the hazard if the patients were moderate consumers.

Based on their results, the authors concluded that patients with CRC with higher lifestyle scores had a lower risk of death. Meaning, those who had a healthy body weight; engaged in regular physical activity; ate a diet rich in fruits, vegetables, whole grains, and low in processed and red meats; and drank small to moderate amounts of alcohol had longer DFS and OS compared with those patients who did not.

REFERENCES

Here's Why a Soda With That Burger Is Especially Fattening

High-sugar drinks combined with protein triggers extra fat storage by body, study finds

July 21, 2017, by Dennis Thompson, HealthDay Reporter
Combining a sugary soda with your burger or fried chicken can really prime your body to pack on more pounds, a new study suggests.

Folks who had a sweetened drink with a high-protein meal stored more unused fat, compared to others who ate the same food with a sugar-free beverage, laboratory tests revealed.

Their bodies did not burn about a third of the additional calories provided by the sugary drink, researchers found.

The participants also burned less fat from their food, and it took less energy overall to digest the meal.

"If we are adding extra carbohydrates on top of what's already in a meal, that will definitely have an effect on the body being able to use fat as an energy source, and it will more than likely go into energy storage," said lead researcher Shanon Casperson. She's a research biologist with the U.S. Department of Agriculture.

Sodas, sweetened coffee and iced tea drinks, fruit drinks, energy beverages and the like are leading sources of added sugar in the American diet, according to the U.S. Centers for Disease Control and Prevention. Six in 10 kids and half of adults drink at least one sugary beverage each day.

Food contains three major types of nutrients -- carbohydrates, fats and protein. Casperson and her team wanted to see how extra carbs in the form of a sugary drink would affect metabolism of fats and proteins.

For the study, 27 healthy-weight adults were placed in a sealed "metabolic room" that carefully tracked how much oxygen was inhaled and carbon dioxide was exhaled, Casperson said. Urine samples were also collected.

"With those three variables, we are able to calculate the amount of nutrients they use" as well as the calories they burn every minute, Casperson said.

Participants spent two full days in the sealed room. On one day they ate two meals containing 15 percent protein, and on the other they ate two meals with 30 percent protein. The meals consisted of bread, ham, cheese, potatoes and butter, and each provided 17 grams of fat and 500 calories.

Each day, the participants had a sugary cherry-flavored drink with one meal and a sugar-free cherry drink with the other meal, Casperson said.

The sugar-sweetened drink decreased fat oxidation -- the process that kick-starts the breakdown of fat molecules -- by 8 percent, the researchers discovered.

Also, the sweetened drink consumed with a 15 percent protein meal decreased fat oxidation by an average 7.2 grams, while the same sugary drink with a 30 percent protein meal decreased fat oxidation by 12.6 grams.

The researchers think the extra load of carbohydrates in a soda might reduce the body's need to process dietary fat for energy, since fat is more difficult to burn than sugar.

"It's easier for the body to use carbohydrates as an energy source," Casperson said. "When you provide the body with carbohydrates, it's going to use that first." Unburned fat then winds up deposited somewhere in a person's body, such as the belly or hips.

The study provides much-needed nuance to the understanding of fast-food nutrition, said Erika Renick. She's a bariatric dietitian with the Comprehensive Weight Loss Center at Staten Island University Hospital in New York City.

"While this was a small sample size, the study backs up what recent research has been pointing to -- that adding protein to meals helps to keep us full and that sugary drinks can influence our food cravings," Renick said.
"However, this study takes it a step further by suggesting that pairing sugar-sweetened drinks with protein-rich meals can encourage weight gain more than we originally understood," Renick continued.

"This specific combination seems to decrease how well our bodies burn fat," she said. "More research would need to be done, but steering people away from this combination could potentially be another tool when counseling people on weight management."

Casperson isn't sure why adding extra protein to a meal seemed to affect the reduction in fat burning. "That's something we need to look at in future research," she said.

The study appears July 20 in the journal BMC Nutrition.

More information: For more on sugar-sweetened drinks, visit the U.S. Centers for Disease Control and Prevention.

SOURCES: Shanon Casperson, Ph.D., research biologist, U.S. Department of Agriculture; Erika Renick, R.D., bariatric dietitian, Comprehensive Weight Loss Center, Staten Island University Hospital, New York City; BMC Nutrition, July 20, 2017

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Overweight, obese adolescents at greater risk for colorectal cancer

July 24, 2017, by Alexandra Todak


BACKGROUND: This study examined the association between body mass index (BMI) in late adolescence and the risk of colon and rectal cancer. ... Being overweight or obese in adolescence appeared linked to a greater risk for subsequent colon cancers in men and women, according to study results published in Cancer.

See Also

- Overweight adolescents at increased risk for liver disease in...
- Hypertension often missed in overweight, obese adolescents
- NAFLD linked to metabolic impairments in obesity, type 2...

Obesity, but not overweight, in adolescence also increased the risk for subsequent rectal cancer.

“This is a huge cohort with a minimum follow-up of 10 years, and all individuals had measured BMI, not just reported or recalled,” Zohar Levi, MD, of the Rabin Medical Center and Tel Aviv University in Israel, said in a press release. “This is the largest study ever, including both men and women, and it had the power to prove the importance of BMI at age 17 on events later in life.”
The potential impact of adolescent overweight and obesity on chronic disease later in life has been a growing concern. Although adult obesity has been linked to an increased risk for colorectal cancer in men and women, data on adolescent obesity and risk for colorectal cancer have been conflicting.

Levi and colleagues evaluated data from 1.08 million Jewish men and 707,212 Jewish women who underwent health examinations when aged 16 to 19 years (mean age at baseline examination, 17.4 years) between 1967 and 2002. According to CDC classification, 7.8% of the population was overweight and 3% were obese.

Researchers followed these individuals and linked them to the national cancer registry through 2012. Median follow-up was 23.3 years.

During that time, 2,967 incidence cases of colorectal cancer occurred, including 1,977 among men — or 1,403 colon cancers and 574 rectum cancers — and 990 among women, 764 of which were in the colon and 226 in the rectum.

Median age was 40.6 years at the end of follow-up and 49.4 years at colorectal cancer diagnosis.

Researchers observed a greater risk for colon cancer in men who were overweight (HR = 1.53; 95% CI, 1.28-1.84) and obese (HR = 1.54; 95% CI, 1.15-2.06) and women who were overweight (HR = 1.54; 95% CI, 1.22-1.93) and obese (HR = 1.51; 95% CI, 0.89-2.57).

The trend became significant after a BMI of 23.4 kg/m2 in men and 23.6 kg/m2 in women.

A greater risk for rectal cancer only occurred for obese men (HR = 1.71; 95% CI, 1.11-2.65) and women (HR = 2.03; 95% CI, 0.9-4.58). The trend became significant after a BMI of 29.6 kg/m2 in men and 30.6 kg/m2 in women.

Limitations of the analysis included the young age of the cohort and a lack of data on diet, physical activity, smoking and family history.

“Several explanations have been suggested for the association of a higher BMI with colorectal cancer,” the researchers wrote. “These include downregulation of adiponectin; upregulation of leptin, interleukin-6 and tumor necrosis factor alpha; increased insulin and insulin-like growth factor 1; the impact of nonalcoholic steatohepatitis; low-grade inflammation; and an altered immune response.”

Disclosure: The researchers report no relevant financial disclosures.

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Study Finds 90% of American Men Overfat

**ScienceDaily**

Date: July 24, 2017
Source: Frontiers in Public Health

Summary: Researchers reported earlier this year in the journal Frontiers of Public Health that up to 76 percent of the world's population may be overfat. Now these same researchers have focused their efforts on data from 30 of the top developed countries, with even more alarming findings that up to 90 percent of adult males and 50 percent of children may be overfat.
Does your waist measure more than half your height?

If so, you may be part of the global overfat pandemic. A recent article, published in Frontiers in Public Health, suggests it to be even more prevalent in developed countries where up to 90 percent of adult males and 50 percent children may suffer from this condition. In the top overfat countries, 80 percent of women fall into this category.

The problem is particularly pervasive in the English-speaking countries of the United States and New Zealand, but also in Iceland and even Greece where people are generally thought to be healthy. This trend may be bad news for developing countries as well, since they have followed the trend of developed nations in the growing overfat pandemic.

The term overfat refers to the presence of excess body fat that can impair health, and may include even normal-weight non-obese individuals. Excess body fat, especially abdominal fat, is associated with increased risk of chronic diseases, increased morbidity and mortality, and reduced quality of life.
Researchers Philip Maffetone, Ivan Rivera-Dominguez and Paul B. Laursen reported earlier this year in the journal Frontiers of Public Health that up to 76 percent of the world's population may be overfat. Now these same researchers have focused their efforts on data from 30 of the top developed countries, with even more alarming findings.

In addition, a recent rise in the incidence of abdominal adiposity, the unhealthiest form of excess body fat, has been observed in both adults and children, indicating a direct link to insulin-resistance, the body's natural propensity to convert and store carbohydrate foods as fat.

The relationship between the overfat condition and poor health is a spectrum or progression in which the vicious cycle of excess body fat, insulin resistance and chronic inflammation lie at one end, causing abnormal blood fats (cholesterol and triglycerides) and glucose, and elevated blood pressure, which then produces a variety of common diseases at the other end.

Being overfat is linked to hypertension, dyslipidemia, coronary heart disease, stroke, cancer, Type 2 diabetes, gallbladder disease, osteoarthritis and gout, pulmonary diseases, sleep apnea and others.

Many physically active people, including professional athletes in various sports and active U.S. military personnel, also may fall into the overfat category.

Traditional means of assessment, such as stepping on a scale or calculating Body Mass Index (BMI), are ineffective at determining whether someone is overfat. Instead, researchers recommend taking a measure of the waistline (at the level of the belly button) and comparing it to height: The waist measure should be less than half a person's


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**Epigenetics between the generations: We inherit more than just genes**

*ScienceDaily*

Science News from research organizations

Date: July 17, 2017,

Source: Max-Planck-Gesellschaft

https://www.sciencedaily.com/releases/2017/07/170717100548.htm

Summary: We are more than the sum of our genes. Epigenetic mechanisms modulated by environmental cues such as diet, disease or our lifestyle take a major role in regulating the DNA by switching genes on and off. It has been long debated if epigenetic modifications accumulated throughout the entire life can cross the border of generations and be inherited to children or even grandchildren. Now researchers show robust evidence that not only the inherited DNA itself but also the inherited epigenetic instructions contribute in regulating gene expression in the offspring.
Egg-cell of a female fruit fly with the egg cell in which H3K27me3 was made visible through green staining. This cell, together with the sperm, will contribute to the formation of the next generation of flies. In the upper right corner, a maternal and paternal pre-nucleus are depicted before their fusion during fertilization. The green colouration of H3K27me3 appears exclusively in the maternal pre-nucleus, indicating that their epigenetic instructions are inherited into the next generation. Credit: MPI of Immunobiology a. Epigenetics/ F. Zenk

We are more than the sum of our genes. Epigenetic mechanisms modulated by environmental cues such as diet, disease or our lifestyle take a major role in regulating the DNA by switching genes on and off. It has been long debated if epigenetic modifications accumulated throughout the entire life can cross the border of generations and be inherited to children or even grandchildren.

Now researchers from the Max Planck Institute of Immunobiology and Epigenetics in Freiburg show robust evidence that not only the inherited DNA itself but also the inherited epigenetic instructions contribute in regulating gene expression in the offspring. Moreover, the new insights by the Lab of Nicola Iovino describe for the first time biological consequences of this inherited information. The study proves that mother’s epigenetic memory is essential for the development and survival of the new generation.

In our body we find more than 250 different cell types. They all contain the exact same DNA bases in exactly the same order; however, liver or nerve cells look very different and have different skills. What makes the difference is a process called epigenetics. Epigenetic modifications label specific regions of the DNA to attract or keep away proteins that activate genes. Thus, these modifications create, step by step, the typical patterns of active and inactive DNA sequences for each cell type. Moreover, contrary to the fixed sequence of 'letters' in our DNA, epigenetic marks can also change throughout our life and in response to our environment or lifestyle. For example, smoking changes the epigenetic makeup of lung cells, eventually leading to cancer. Other influences of external stimuli like stress, disease or diet are also supposed to be stored in the epigenetic memory of cells.

It has long been thought that these epigenetic modifications never cross the border of generations. Scientists assumed that epigenetic memory accumulated throughout life is entirely cleared during the development of sperms and egg cells. Just recently a handful of studies stirred the scientific community by showing that epigenetic marks indeed can be transmitted over generations, but exactly how, and what effects these genetic modifications have in the offspring is not yet understood. "We saw indications of intergenerational inheritance of epigenetic information since the rise of the epigenetics in the early nineties. For instance, epidemiological studies revealed a striking correlation between the food supply of grandfathers and an increased risk of diabetes and cardiovascular disease in their grandchildren. Since then, various reports suggested epigenetic inheritance in different organisms but the molecular mechanisms were unknown," says Nicola Iovino, corresponding author in the new study.

Epigenetics between the generations

He and his team at the Max Planck Institute of Immunobiology and Epigenetics in Freiburg, Germany used fruit flies to explore how epigenetic modifications are transmitted from the mother to the embryo. The team focused on a particular modification called H3K27me3 that can also be found in humans. It alters the so-called chromatin, the packaging of the DNA in the cell nucleus, and is mainly associated with repressing gene expression.
The Max Planck researchers found that H3K27me3 modifications labeling chromatin DNA in the mother’s egg cells were still present in the embryo after fertilization, even though other epigenetic marks are erased. "This indicates that the mother passes on her epigenetic marks to her offspring. But we were also interested, if those marks are doing something important in the embryo," explains Fides Zenk, first author of the study.

**Inherited epigenetic marks are important for embryogenesis**

Therefore the researchers used a variety of genetic tools in fruit flies to remove the enzyme that places H3K27me3 marks and discovered that embryos lacking H3K27me3 during early development could not develop to the end of embryogenesis. "It turned out that, in reproduction, epigenetic information is not only inherited from one generation to another but also important for the development of the embryo itself," says Nicola Iovino.

When they had a closer look into the embryos, the team found that several important developmental genes that are normally switched off during early embryogenesis were turned on in embryos without H3K27me3. "We assumed that activating those genes too soon during development disrupted embryogenesis and eventually caused the death of the embryo. It seems, virtually, that inherited epigenetic information is needed to process and correctly transcribe the genetic code of the embryo," explains Fides Zenk.

**Implications for the theory of heredity and human health**

With these results the study by the Max Planck researchers is an important step forward and shows clearly the biological consequences of inherited epigenetic information. Not only by providing evidence that epigenetic modifications in flies can be transmitted down through generations, but moreover by revealing that epigenetic marks transmitted from the mother are a fine-tuned mechanism to control gene activation during the complex process of early embryogenesis.

The international team in Freiburg is convinced that their findings have far-reaching implications. "Our study indicates that we inherit more than just genes from our parents. It seems to be that we also get a fine-tuned as well as important gene regulation machinery that can be influenced by our environment and individual lifestyle. These insights can provide new ground for the observation that at least in some cases acquired environmental adaptations can be passed over the germ line to our offspring," explains Nicola Iovino. Further, since the disruption of epigenetic mechanisms may cause diseases such as cancer, diabetes and autoimmune disorders, these new findings could have implications for human health.

Story Source: [Materials](http://www.max-Planck-Gesellschaft.de) provided by Max-Planck-Gesellschaft. Note: Content may be edited for style and length.


Your dog may be more than your furry companion -- new research suggests it may also be an effective personal trainer.

The study found that dog walking gives a significant boost to older adults' exercise levels year-round.

Researchers looked at more than 3,000 older adults in England. Dog owners who walked their pooch got an average of 30 minutes more physical activity a day than other participants.

The dog walking-linked boost in activity was especially noticeable in the winter when days are shorter, colder and wetter, the study authors said.

"We found that dog walkers were much more physically active and spent less time sitting overall. We expected this, but when we looked at how the amount of physical activity participants undertook each day varied by weather conditions, we were really surprised at the size of the differences between those who walked dogs and the rest of the study participants," said study lead author Yu-Tzu Wu, of the University of Cambridge.

And, project leader Andy Jones said, "We were amazed to find that dog walkers were on average more physically active and spent less time sitting on the coldest, wettest and darkest days than non-dog owners were on long, sunny and warm summer days." He is a professor at Norwich School of Medicine, at the University of East Anglia.

"The size of the difference we observed between these groups was much larger than we typically find for interventions, such as group physical activity sessions that are often used to help people remain active," Jones added in a university news release.

The researchers noted that owning a dog is not a good idea for all older adults due to the demands of looking after a pet, but said their findings suggest new ideas to increase physical activity.

"Physical activity interventions typically try and support people to be active by focusing on the benefits to themselves, but dog walking is also driven by the needs of the animal. Being driven by something other than our own needs might be a really potent motivator and we need to find ways of tapping into it when designing exercise interventions in the future," Jones said.

The findings were published July 24 in the Journal of Epidemiology and Community Health.

More information: The U.S. National Institute on Aging has more about exercise.

SOURCE: University of East Anglia, United Kingdom, news release, July 24, 2017
Are You a Carboholic? Why Cutting Carbs Is So Tough

The New York Times

July 19, 2017, by Gary Taubes


Credit Juliette Borda

I’ve been eating a high-fat, carb-restricted diet for almost 20 years, since I started as an experiment when investigating nutrition research for the journal Science. I find it’s easy for me to maintain a healthy weight when I eat this way. But even after two decades, the sensation of being on the edge of a slippery slope is ever-present.

The holidays and family vacations are a particular problem. Desserts and sweets, it seems, will appear after every lunch and dinner, and I’m not particularly good at saying no when everyone else is partaking. The more sweets I eat, the more we eat as a family, the longer it takes upon returning home before that expectation of a daily treat fades away.

What I’ve realized is that eating a little of a tasty dessert or a little pasta or bread fails to satisfy me. Rather it ignites a fierce craving for more, to eat it all and then some. I find it easier to avoid sugar, grains and starches entirely, rather than to try to eat them in moderation. The question is why.

To begin to answer that question requires understanding that researchers are generally divided not only on what causes obesity, but also why we have cravings and often fail to stay on diets.

The conventional thinking, held by the large proportion of the many researchers and clinicians I’ve interviewed over the years, is that obesity is caused by caloric excess. They refer to it as an “energy balance” disorder, and so the treatment is to consume less energy (fewer calories) and expend more. When we fail to maintain this prescription, the implication is that we simply lack will power or self-discipline.

“It’s viewed as a psychological issue or even a question of character,” says Dr. David Ludwig, who studies and treats obesity at Harvard Medical School.

The minority position in this field — one that Dr. Ludwig holds, as do I after years of reporting — is that obesity is actually a hormonal regulatory disorder, and the hormone that dominates this process is insulin. It directly links what we eat to the accumulation of excess fat and that, in turn, is tied to the foods we crave and the hunger we experience. It’s been known since the 1960s that insulin signals fat cells to accumulate fat, while telling the other cells in our body to burn carbohydrates for fuel. By this thinking these carbohydrates are uniquely fattening.

Since insulin levels after meals are determined largely by the carbohydrates we eat — particularly easily digestible grains and starches, known as high glycemic index carbohydrates, as well as sugars like sucrose and high-fructose corn syrup —
diets based on this approach specifically target these carbohydrates. If we don’t want to stay fat or get fatter, we don’t eat them.

This effect of insulin on fat and carbohydrate metabolism offers an explanation for why these same carbohydrates, as Dr. Ludwig says, are typically the foods we crave most; why a little “slip,” as addiction specialists would call it, could so easily lead to a binge.

Elevate insulin levels even a little, says Dr. Robert Lustig, a pediatric endocrinologist at the University of California, San Francisco, and the body switches over from burning fat for fuel to burning carbohydrates, by necessity.

“The more insulin you release, the more you crave carbs,” he said. “Once you’re exposed to a little carbohydrate, and you get an insulin rise from it, that forces energy into fat cells and that deprives your other cells of the energy they would otherwise have utilized — in essence, starvation. So you compensate by getting hungry, particularly for more carbohydrate. High insulin drives carb-craving.”

The result is that even a bite or a taste of carbohydrate-rich foods can stimulate insulin and create a hunger — a craving — for even more carbohydrates. “There’s no question in my mind,” says Dr. Lustig, “that once people who are ‘carboholics’ get their insulin levels down, they become less carboholic. And if they go off the wagon and start eating carbs, they go right back to where they were before. I’ve seen that in numerous patients.”

Sugar and sweets might be a particular problem because of several physiological responses that may be unique to sugar. Sugar cravings appear to be mediated through the brain reward center that is triggered by other addictive substances. Both sugar and addictive substances stimulate the release of a neurotransmitter called dopamine, producing an intensely pleasurable sensation that our brains crave to repeat. Whether this really is a significant player in sugar cravings is one of many areas of controversy in the field.

Researchers like Dr. Ludwig and Dr. Lustig who also see patients, and physicians, nutritionists and dietitians who promote carb-restricted diets, believe that a person can minimize these carbohydrate cravings by eating lots of healthful fats instead. Fat is satiating, says Dr. Ludwig, and it’s the one macronutrient that doesn’t stimulate insulin secretion. Eating fat-rich foods, “helps extinguish binge behavior,” Dr. Ludwig says, “as opposed to high-carb foods which exacerbate it.” (Although the definition of a “healthful” fat is another topic of debate.)

Whatever the mechanism involved, if the goal is to avoid the kind of slip that leads from a single forkful of rice to a doughnut binge or falling off your diet for good, then the same techniques that have been pioneered in the field of drug addiction for avoiding relapses also should work in this scenario as well. These basic principles have been developed over decades, says Laura Schmidt, an addiction specialist at the University of California, San Francisco School of Medicine who now studies sugar as well. They can “work for anyone who’s gotten clean and sober and wants to stay that way.”

The first and most obvious strategy is to stay away from the trigger. “Alcoholics who care about staying sober won’t get a job in a bar or even walk down the alcohol aisle in a grocery store,” says Dr. Schmidt. “It’s harder to avoid junk foods in the food environment around us, but we can certainly clean up our home environment and avoid situations where sugar and other treats are easily available.”

Changing our social networks may be necessary as well — convincing our families and our communities to be invested in eschewing these foods, just as they would help if we were trying to quit cigarettes or alcohol or a harder drug.

Another valuable technique is to learn to identify, plan for, and avoid situations that weaken resolve or increase cravings. “If I know that at 3 p.m. I have a little slump and will want to go to the vending machine, then I can have food
available that’s the equivalent but that won’t trigger a binge,” says Dr. Schmidt. “Instead of sugary soda, I can drink sparkling water with a lime in it.”

Ultimately, any successful diet is by definition a long-term commitment. We tend to think of diets as something we go on and off. And if we fall off, we think the diet failed. But if we buy into the logic of carb-restricted diets, then it implies acceptance of a lifetime of abstention. As with cigarettes or alcohol, if we fall off the wagon, we don’t give up; we get back on.

“It’s a very powerful system that has to be undone, whether it’s addiction or metabolic disease,” says Dr. Schmidt. “It is knitted into the body and mind over years, and getting healthy requires taking the long view as well.”

A Positive Outlook May Be Good for Your Health

The New York Times
Personal Health, March 27, 2017, by Jane E. Brody

"Look on the sunny side of life."

"Turn your face toward the sun, and the shadows will fall behind you."

"Every day may not be good, but there is something good in every day."

"See the glass as half-full, not half-empty."

Researchers are finding that thoughts like these, the hallmarks of people sometimes called “cockeyed optimists,” can do far more than raise one’s spirits. They may actually improve health and extend life.

There is no longer any doubt that what happens in the brain influences what happens in the body. When facing a health crisis, actively cultivating positive emotions can boost the immune system and counter depression. Studies have shown an indisputable link between having a positive outlook and health benefits like lower blood pressure, less heart disease, better weight control and healthier blood sugar levels.

Even when faced with an incurable illness, positive feelings and thoughts can greatly improve one’s quality of life. Dr. Wendy Schlessel Harpham, a Dallas-based author of several books for people facing cancer, including “Happiness in a Storm,” was a practicing internist when she learned she had non-Hodgkin’s lymphoma, a cancer of the immune system, 27 years ago. During the next 15 years of treatments for eight relapses of her cancer, she set the stage for happiness and hope, she says, by such measures as surrounding herself with people who lift her spirits, keeping a daily gratitude journal, doing something good for someone else, and watching funny, uplifting movies. Her cancer has been in remission now for 12 years.

“Fostering positive emotions helped make my life the best it could be,” Dr. Harpham said. “They made the tough times easier, even though they didn’t make any difference in my cancer cells.”
While Dr. Harpham may have a natural disposition to see the hopeful side of life even when the outlook is bleak, new research is demonstrating that people can learn skills that help them experience more positive emotions when faced with the severe stress of a life-threatening illness.

Judith T. Moskowitz, a professor of medical social sciences at Northwestern University Feinberg School of Medicine in Chicago, developed a set of eight skills to help foster positive emotions. In earlier research at the University of California, San Francisco, she and colleagues found that people with new diagnoses of H.I.V. infection who practiced these skills carried a lower load of the virus, were more likely to take their medication correctly, and were less likely to need antidepressants to help them cope with their illness.

The researchers studied 159 people who had recently learned they had H.I.V. and randomly assigned them to either a five-session positive emotions training course or five sessions of general support. Fifteen months past their H.I.V. diagnosis, those trained in the eight skills maintained higher levels of positive feelings and fewer negative thoughts related to their infection.

An important goal of the training is to help people feel happy, calm and satisfied in the midst of a health crisis. Improvements in their health and longevity are a bonus. Each participant is encouraged to learn at least three of the eight skills and practice one or more each day. The eight skills are:

- Recognize a positive event each day.
- Savor that event and log it in a journal or tell someone about it.
- Start a daily gratitude journal.
- List a personal strength and note how you used it.
- Set an attainable goal and note your progress.
- Report a relatively minor stress and list ways to reappraise the event positively.
- Recognize and practice small acts of kindness daily.
- Practice mindfulness, focusing on the here and now rather than the past or future.

Dr. Moskowitz said she was inspired by observations that people with AIDS, Type 2 diabetes and other chronic illnesses lived longer if they demonstrated positive emotions. She explained, “The next step was to see if teaching people skills that foster positive emotions can have an impact on how well they cope with stress and their physical health down the line.”

She listed as the goals improving patients’ quality of life, enhancing adherence to medication, fostering healthy behaviors, and building personal resources that result in increased social support and broader attention to the good things in life.

Gregg De Meza, a 56-year-old architect in San Francisco who learned he was infected with H.I.V. four years ago, told me that learning “positivity” skills turned his life around. He said he felt “stupid and careless” about becoming infected and had initially kept his diagnosis a secret.

“When I entered the study, I felt like my entire world was completely unraveling,” he said. “The training reminded me to rely on my social network, and I decided to be honest with my friends. I realized that to show your real strength is to
show your weakness. No pun intended, it made me more positive, more compassionate, and I’m now healthier than I’ve ever been.”

In another study among 49 patients with Type 2 diabetes, an online version of the positive emotions skills training course was effective in enhancing positivity and reducing negative emotions and feelings of stress. Prior studies showed that, for people with diabetes, positive feelings were associated with better control of blood sugar, an increase in physical activity and healthy eating, less use of tobacco and a lower risk of dying.

In a pilot study of 39 women with advanced breast cancer, Dr. Moskowitz said an online version of the skills training decreased depression among them. The same was true with caregivers of dementia patients.

“None of this is rocket science,” Dr. Moskowitz said. “I’m just putting these skills together and testing them in a scientific fashion.”

In a related study of more than 4,000 people 50 and older published last year in the Journal of Gerontology, Becca Levy and Avni Bavishi at the Yale School of Public Health demonstrated that having a positive view of aging can have a beneficial influence on health outcomes and longevity. Dr. Levy said two possible mechanisms account for the findings. Psychologically, a positive view can enhance belief in one’s abilities, decrease perceived stress and foster healthful behaviors. Physiologically, people with positive views of aging had lower levels of C-reactive protein, a marker of stress-related inflammation associated with heart disease and other illnesses, even after accounting for possible influences like age, health status, sex, race and education than those with a negative outlook. They also lived significantly longer.

### Turning Negative Thinkers Into Positive Ones

*The New York Times*

April 3, 2017, by Jane E. Brody


*Credit Paul Rogers*

Most mornings as I leave the Y after my swim and shower, I cross paths with a coterie of toddlers entering with their caregivers for a kid-oriented activity. I can’t resist saying hello, requesting a high-five, and wishing them a fun time. I leave the Y grinning from ear to ear, uplifted not just by my own workout but even more so by my interaction with these darling representatives of the next generation.

What a great way to start the day!

When I told a fellow swimmer about this experience and mentioned that I was writing a column on the health benefits of positive emotions, she asked, “What do you do about people who are always negative?” She was referring to her parents, whose chronic negativity seems to drag everyone down and make family visits extremely unpleasant.

I lived for half a century with a man who suffered from periodic bouts of depression, so I understand how challenging negativism can be. I wish I had known years ago about the work Barbara Fredrickson, a psychologist at the University of
North Carolina, has done on fostering positive emotions, in particular her theory that accumulating “micro-moments of positivity,” like my daily interaction with children, can, over time, result in greater overall well-being.

The research that Dr. Fredrickson and others have done demonstrates that the extent to which we can generate positive emotions from even everyday activities can determine who flourishes and who doesn’t. More than a sudden bonanza of good fortune, repeated brief moments of positive feelings can provide a buffer against stress and depression and foster both physical and mental health, their studies show.

This is not to say that one must always be positive to be healthy and happy. Clearly, there are times and situations that naturally result in negative feelings in the most upbeat of individuals. Worry, sadness, anger and other such “downers” have their place in any normal life. But chronically viewing the glass as half-empty is detrimental both mentally and physically and inhibits one’s ability to bounce back from life’s inevitable stresses.

Negative feelings activate a region of the brain called the amygdala, which is involved in processing fear and anxiety and other emotions. Dr. Richard J. Davidson, a neuroscientist and founder of the Center for Healthy Minds at the University of Wisconsin — Madison, has shown that people in whom the amygdala recovers slowly from a threat are at greater risk for a variety of health problems than those in whom it recovers quickly.

Both he and Dr. Fredrickson and their colleagues have demonstrated that the brain is “plastic,” or capable of generating new cells and pathways, and it is possible to train the circuitry in the brain to promote more positive responses. That is, a person can learn to be more positive by practicing certain skills that foster positivity.

For example, Dr. Fredrickson’s team found that six weeks of training in a form of meditation focused on compassion and kindness resulted in an increase in positive emotions and social connectedness and improved function of one of the main nerves that helps to control heart rate. The result is a more variable heart rate that, she said in an interview, is associated with objective health benefits like better control of blood glucose, less inflammation and faster recovery from a heart attack.

Dr. Davidson’s team showed that as little as two weeks’ training in compassion and kindness meditation generated changes in brain circuitry linked to an increase in positive social behaviors like generosity.

“The results suggest that taking time to learn the skills to self-generate positive emotions can help us become healthier, more social, more resilient versions of ourselves,” Dr. Fredrickson reported in the National Institutes of Health monthly newsletter in 2015.

In other words, Dr. Davidson said, “well-being can be considered a life skill. If you practice, you can actually get better at it.” By learning and regularly practicing skills that promote positive emotions, you can become a happier and healthier person. Thus, there is hope for people like my friend’s parents should they choose to take steps to develop and reinforce positivity.

In her newest book, “Love 2.0,” Dr. Fredrickson reports that “shared positivity — having two people caught up in the same emotion — may have even a greater impact on health than something positive experienced by oneself.” Consider watching a funny play or movie or TV show with a friend of similar tastes, or sharing good news, a joke or amusing incidents with others. Dr. Fredrickson also teaches “loving-kindness meditation” focused on directing good-hearted wishes to others. This can result in people “feeling more in tune with other people at the end of the day,” she said.

Activities Dr. Fredrickson and others endorse to foster positive emotions include:

Do good things for other people. In addition to making others happier, this enhances your own positive feelings. It can be something as simple as helping someone carry heavy packages or providing directions for a stranger.
Appreciate the world around you. It could be a bird, a tree, a beautiful sunrise or sunset or even an article of clothing someone is wearing. I met a man recently who was reveling in the architectural details of the 19th-century houses in my neighborhood.

Develop and bolster relationships. Building strong social connections with friends or family members enhances feelings of self-worth and, long-term studies have shown, is associated with better health and a longer life.

Establish goals that can be accomplished. Perhaps you want to improve your tennis or read more books. But be realistic; a goal that is impractical or too challenging can create unnecessary stress.

Learn something new. It can be a sport, a language, an instrument or a game that instills a sense of achievement, self-confidence and resilience. But here, too, be realistic about how long this may take and be sure you have the time needed.

Choose to accept yourself, flaws and all. Rather than imperfections and failures, focus on your positive attributes and achievements. The loveliest people I know have none of the external features of loveliness but shine with the internal beauty of caring, compassion and consideration of others.

511Comments

Practice resilience. Rather than let loss, stress, failure or trauma overwhelm you, use them as learning experiences and steppingstones to a better future. Remember the expression: When life hands you a lemon, make lemonade.

Practice mindfulness. Ruminating on past problems or future difficulties drains mental resources and steals attention from current pleasures. Let go of things you can’t control and focus on the here-and-now. Consider taking a course in insight meditation.

Guidelines on Opioid Use in Pregnancy Released by ACOG

Medscape

News & Perspective, July 25, 2017, Veronica Hackethal, MD

Revised guidelines on treatment of opioid use during pregnancy have been released by the American College of Obstetricians and Gynecologists (ACOG). Medication-assisted treatment remains the recommended treatment, but medically supervised withdrawal can be considered in certain clinical situations, according to the guidelines.

The guidelines provide an updated review of pharmacologic treatment options, including methadone, buprenorphine, naltrexone, and naloxone.

"Concern about medication-assisted treatment must be weighed against the negative effects of ongoing misuse of opioids, which can be much more detrimental to mom and baby. Medication-assisted treatment improves adherence to prenatal care and addiction treatment programs and has been shown to reduce the risk of pregnancy complications," lead author, Maria Mascola, MD, from the Marshfield Clinic in Wisconsin, said in a news release.

Dr Mascola and colleagues published the guidelines online July 25 in Obstetrics & Gynecology.
Opioid use during pregnancy has escalated, in parallel with the opioid epidemic in the general population. Pregnant women who use opioids are at increased risk for pregnancy-associated complications and death. Untreated addiction has also been linked to high-risk behaviors, such as prostitution and crime, which can expose pregnant women to sexually transmitted infections, violence, legal problems, and incarceration.

Medication-assisted treatment remains the preferred treatment because withdrawal is associated with high relapse rates and poorer outcomes. Relapse is associated with serious risks, such as transmission of infectious agents, accidental overdose as a result of decreased tolerance, lack of prenatal care, and obstetric complications. Medically supervised withdrawal may be considered in women who do not accept treatment with an opioid agonist or when treatment is unavailable. In that case, a physician experienced in treating perinatal addiction should supervise care, with informed consent of the woman.

The guidelines also emphasize multidisciplinary long-term follow-up, which should include medical, developmental, and social support.

ACOG also recommends universal screening starting at the first prenatal visit and using a validated verbal screening tool, which is preferable to urine testing. If a woman screens positive, the guidelines recommend a brief intervention (such as a conversation, feedback, and advice) and referral to treatment.

The guidelines also provide detailed information about antepartum, intrapartum, and postpartum care in women who use opioids during pregnancy.

The increasing use of opioids in pregnancy has been accompanied by a sharp increase in neonatal abstinence syndrome — a drug withdrawal syndrome experienced soon after birth in children born to women who take opioids during pregnancy. Consequently, the guidelines emphasize monitoring for this syndrome by a pediatric healthcare provider.

"While neonatal abstinence syndrome is often seen in infants who have been exposed prenatally to opioids, it is important to remember that it is an expected and treatable condition that has not been found to have any significant effect on cognitive development," Dr Mascola added.

Women who are stable, are not using illicit drugs, and have no contraindications (such as HIV infection) should be encouraged to breastfeed, according to the guidelines. However, providers should counsel women not to breastfeed should they relapse.

Finally, the guidelines emphasize appropriate postpartum psychosocial support, such as substance use disorder treatment and relapse prevention programs. Women should also have routine access to contraceptive services and contraceptive counseling as part of substance use disorder treatment, as the risk for unplanned pregnancy is high among women with substance use disorders and can run as high as 80%.

"The postpartum period is already a vulnerable time for new moms, in general, as they face the stresses of sleep deprivation, caring for a newborn, and possibly symptoms of postpartum depression," Dr Mascola said in the news release. "Women with opioid use disorder are dealing with all those things in addition to the challenges of their addiction, which — without treatment and support — can often lead to relapse. These guidelines are meant to help obstetrician-gynecologists assert themselves in the care of their patients, so that they can make a lasting difference in their lives."

The guidelines were supported by the American College of Obstetricians and Gynecologists. The authors have disclosed no relevant financial relationships.

Obstet Gynecol. Published online July 25, 2017. Abstract
Opioid Abuse Down in Younger Americans, But Up Among Older Adults
Rates have doubled in people over 50, report says

July 26, 2017, by HealthDay News, by Robert Preidt

While opioid abuse has fallen among younger Americans, the same cannot be said for older adults, a new government report shows.

Opioid abuse includes either the use of heroin or illegal use of prescription opioid painkillers, such as oxycodone (Oxycontin, Percocet) and hydrocodone (Vicoprofen).

Rates of opioid abuse among young adults -- aged 18 to 25 -- decreased from 11.5 percent in 2002 to 8 percent in 2014. But in adults 50 years and older, opioid abuse doubled, from 1 percent to 2 percent, according to the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA).

Overall, about 9.5 million adults had abused opioids in the past year, the 2014 National Survey on Drug Use and Health found.

"These findings highlight the need for prevention programs for all ages, as well as to establish improved evidence-based treatment, screening and appropriate referral services," Dr. Kimberly Johnson, director for the Center for Substance Abuse Treatment, said in a SAMHSA news release.

"The high rates of [multiple] illnesses in older populations and the potential for drug interactions has profound implications for the health and well-being of older adults who continue to misuse opioids," Johnson said.

What can be done to get these rates down, particularly among older people?

The U.S. Department of Health and Human Services has identified five strategies to tackle the opioid crisis in the United States, including:

- Improving access to treatment and recovery services, including the full range of medication-assisted treatment.
- Promoting targeted availability and distribution of overdose-reversing drugs.
- Strengthening understanding of the epidemic through better public health data and reporting.
- Providing support for cutting edge research on pain and addiction.
- Advancing better practices for pain management.

More information: The U.S. Centers for Disease Control and Prevention has more on opioids.

SOURCE: U.S. Substance Abuse and Mental Health Services Administration, news release, July 26, 2017
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Nearly 1 in 5 U.S. Adults Has Mental Illness or Drug Problem
New Jersey is the mentally healthiest state, report finds


Nearly 1 in 5 American adults deals with a mental illness or substance abuse problem each year, a U.S. government study says.

Oregon has the highest rate, and New Jersey the lowest, according to 2012-2014 data analyzed by the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA).

Overall, almost 44 million Americans 18 or older had a diagnosable mental, behavioral or emotional disorder in the past year, researchers said. They reviewed national surveys on drug use and health.

"The figures in SAMHSA's report remind us how important it is to take mental health as seriously as any other health condition," Kana Enomoto, SAMHSA acting deputy assistant secretary, said in an agency news release.

The overall national rate of mental illness was about 18 percent.

In Oregon, almost 23 percent of the state residents had any type of mental illness. Utah, West Virginia, Maine and Rhode Island were next, with rates above 21 percent.

In New Jersey, the mentally healthiest state, fewer than 16 percent of adults had a mental health condition, according to the report. The other lowest rates were in Illinois, North Dakota, Florida and South Dakota (all about 16.5 percent).

Rates varied within states, too. For example, northwestern Oregon had a high of almost 24 percent. South Florida came in with less than 15 percent having a diagnosable mental illness in a given year.

"The presence of [any mental illness] in every state reinforces that mental illness is a major public health concern in the United States," the report noted. "Overall treatment levels remain low, and addressing the mental health of U.S. adults remains a concern for state and national public health officials."

Highlighting the percentage of people with a mental illness at state and local levels can help policymakers assess mental health needs in their communities, the researchers noted.

Examining changes over time is a key part of such assessments. The report said that rates of past-year mental illness among adults rose in California, Maine, North Carolina and Rhode Island between 2010-2012 and 2012-2014. There was no change in other states.

More information: The U.S. National Institute of Mental Health has more on mental health.

SOURCE: U.S. Substance Abuse and Mental Health Services Administration, news release, July 20, 2017
Last Updated: Jul 21, 2017. Copyright © 2017 HealthDay. All rights reserved.
Panel: Opioid Addiction Should Be Treated as Illness, Not Crime


With awareness about the dangers of opioid addiction high among public officials, the next steps to a solution are public acknowledgment that addiction is a disease and securing the resources required to combat it, according to experts who spoke during a recent panel discussion here.

Sen. Joe Manchin, D-W.Va., right, and Rep. Tim Murphy, R-Pa., discuss legislative efforts to address the opioid crisis during a recent panel discussion.

Legislators, public health officials and veterans group representatives participated in the panel discussion, that was hosted by Roll Call on July 13. Underlying the discussion were the needs to adequately fund Medicaid, which has been a valuable source of support for social services that address the issue, and to treat drug abuse as a medical problem instead of a crime.

Legislators set the stage by defining the scope of the problem.

Rep. Ann McLane Kuster, D-N.H., pointed out that 6 percent of patients who take prescription opioids for just one day -- and 35 percent of those who take them for 30 days -- will be using these medications a year later.

Sen. Joe Manchin, D-W.Va., whose state has the nation's highest rate of deaths due to drug overdose, said, "Twenty years ago, we did nothing to treat mental health. Now with the ACA (Patient Protection and Affordable Care Act), this is the first time people can get treatment for mental health and opioid addiction."

Story Highlights

Experts at a July 13 panel discussion titled Fighting the Opioid Crisis talked about successes and work that remains in addressing the issue.

Panelists highlighted the need to treat drug abuse as a medical problem instead of a crime and to adequately fund Medicaid.

One speaker emphasized the importance of reliably funding addiction treatment.

A bill Manchin sponsored, known as Jessie’s Law is intended to help slow the rate of opioid addiction by making it easier for physicians to know the opioid addiction history of patients who choose to provide that information to a health care professional. The law is named for Jessie Grubb who died of an overdose one day after she was prescribed oxycodone after hip surgery. Her parents had told the hospital she was recovering from heroin addiction, but the physician handling the discharge did not receive the information.
Another bill, the Second Chance Reauthorization Act, would address addiction by providing federal grant funding to help individuals who are released from jail or juvenile facilities receive mental health services, education and job training. The program targets potential repeat offenders and individuals who are considered vulnerable to drug abuse.

But a major roadblock to fighting the opioid problem is the lingering public perception that drug use and addiction are character flaws not tied to an illness, and one legislator said it is important that medication-assisted treatment includes intense counseling to address mental health.

"If we don't treat that, it's a waste," said Rep. Tim Murphy, R-Pa.

This particular misperception about addiction is widespread, speakers said.

"There is still a segment of the population that is hesitant to look at it as a disease," said Cynthia Reilly, director of the Substance Use Prevention and Treatment Initiative at the Pew Charitable Trusts.

Kuster pointed to Sullivan County in Maine as one area where this attitude is shifting. When the justice system became overwhelmed by heroin cases, judges supported the formation of drug treatment courts that would direct nonviolent drug offenders to a two-year treatment program. Participants who maintain a clean record and follow the treatment recovery plan graduate from the program with no criminal record. They also receive education and job training.

Panelists pointed out that many treatment programs are funded by Medicaid, which makes them vulnerable if federal lawmakers cut Medicaid, as recent legislation has proposed.

"Patients are getting treatment because of the Medicaid expansion," Kuster said. "Our treatment programs would close and our rural hospitals would close. We are worried we could lose that."

In Maryland, for example, one-third of patients with a substance abuse disorder depend on Medicaid.

"We cannot afford to roll back the gains we've made," said Baltimore Health Commissioner Leana Wen, M.D.

Seven hundred people in Baltimore died from a drug addiction in 2016, yet recovery facilities and health professionals trained in addiction treatment are so scarce that only 10 percent of the individuals there who need addiction treatment are getting it.

"Patients who know they need help come in, and I have to tell them, 'I'm sorry; I may be able to find you treatment in three weeks or maybe a month,'" Wen said. "That wouldn't be acceptable for any other disease."

Adding to the problem, Wen said Baltimore does not have a sufficient supply of naloxone. The city's stock of 5,000 units needs to last until 2018.

Wen emphasized the need for a reliable source of funding to cover addiction treatment and called on prescribers to remain aware of their role in addressing the issue. She also warned of the consequences if the public does not acknowledge addiction is a disease.

"As long as we view addiction as a choice, then it's OK if they end up in jail or dead," Wen said. "The stigma is preventing people from seeking treatment."

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(7/12/2017)
Short sleep increases risk for type 2 diabetes progression in adults with prediabetes


AUTHORS: Kim CW, Chang Y, Sung E, Ryu S.

BACKGROUND: To evaluate the association between sleep duration and the risk of progression to diabetes among people with prediabetes, defined by HbA1c values. ...

Adults with prediabetes who reported sleeping 5 hours or less per night were nearly 70% more likely to progress to type 2 diabetes over 2 years compared with those who reported sleeping 7 hours each night, according to findings from a study conducted in South Korea.

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“Previous studies have shown that sleep deprivation is associated with risk of development of diabetes,” Chan-Won Kim, MD, of the Center for Cohort Studies at Total Healthcare Center, Kangbuk Samsung Hospital, Seoul, South Korea, told Endocrine Today. “However, these studies defined diabetes based on self-report, which may influence this association, and no studies have investigated the association between sleep duration and progression of prediabetes to diabetes. We studied if insufficient sleep would be linked to an increased risk of progression to diabetes among persons with prediabetes, defined by HbA1c concentration. We found that short sleep duration was associated with progression of prediabetes to diabetes, independent of socioeconomic factors and lifestyle characteristics.”

Kim and colleagues analyzed data from 17,983 adults with prediabetes at baseline (defined as an HbA1c between 5.7% and 6.4%) and at least one follow-up visit (average, 2.4 visits) participating in the Kangbuk Samsung Health Study (mean age, 41 years; 33% women). Participants underwent comprehensive annual or biennial exams, including assessments of sleep duration and quality (using the Pittsburgh Sleep Quality Index) and measurements of high-sensitivity C-reactive protein, insulin, glucose and HbA1c, at hospital screening centers in Seoul and Suwon, South Korea. Diabetes was defined as an HbA1c of at least 6.5% or use of antidiabetes medications. Researchers used time-dependent proportional hazards models to evaluate the association between sleep duration and the risk for progression to diabetes.

Within the cohort, mean reported nightly sleep duration was 6.2 hours; 15.6% reported poor sleep quality.
During 31,582 person-years of follow-up (median follow-up period, 22 months), 664 incident cases of diabetes were identified; incidence rate was 21 per 1,000 person-years.

Compared with adults with prediabetes who reported sleeping 7 hours per night, those with prediabetes who slept 5 hours or less were 68% more likely to progress to type 2 diabetes (HR = 1.68; 95% CI, 1.3-2.16), those reporting sleeping 6 hours per night were 44% more likely to progress to type 2 diabetes (HR = 1.44; 95% CI, 1.17-1.76), whereas those who reported sleeping at least 8 hours per night were 23% more likely to develop diabetes (HR = 1.23; 95% CI, 0.85-1.78), according to researchers. Results persisted after adjustment for age, sex and study center, and after further adjustment for education, marital status, depressive symptoms, family history of diabetes, shiftwork and smoking status, among other variables.

“In addition, our results suggest that biomarkers of adiposity, fatty liver and insulin resistance partially mediate this association, expanding the understanding of the underlying metabolic dysfunction,” Kim said.

The researchers also found that poor, subjective sleep quality was not associated with the risk for incident diabetes.

“Our findings suggest that sufficient sleep should be part of a healthy lifestyle, especially among people with prediabetes,” Kim said. “For health care personnel, it may be helpful to assess sleep duration of their patients with prediabetes when they evaluate the risk of progression to diabetes. A population-level approach is also encouraged to reduce people’s exposure to sleep deprivation.” – by Regina Schaffer

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Could a little alcohol lower your diabetes risk?

That glass of wine or pint of beer you enjoy with dinner every night might come with an added benefit -- a lower risk of type 2 diabetes, a new Danish study contends.

The researchers found that men who had 14 drinks each week and women who had nine drinks a week appeared to have the lowest risk of type 2 diabetes, compared to nondrinkers or people who drank more heavily, said senior researcher Janne Tolstrup.

People received the most benefit if they spread those drinks out during the week, rather than downing them all in one or two binges, Tolstrup added.
"Drinking pattern seemed to play a role for the risk of diabetes," Tolstrup said. "Drinking frequency was important, as those who were drinking three to four times per week had lower risk as compared to those drinking only once per week -- regardless of the total weekly amount."

The potential protective effect of alcohol also appeared to be limited to wine and beer, Tolstrup said. Hard liquor provided no benefit to men, and could actually increase a woman's risk of diabetes, the findings showed.

"There seemed to be little beneficial effects from spirits," Tolstrup said.

She's a professor of epidemiology with the University of Southern Denmark's National Institute of Public Health in Copenhagen.

But at least one diabetes expert suggested that if you're thinking of drinking just to prevent type 2 diabetes, you might want to put the corkscrew down.

"I wouldn't recommend increasing alcohol consumption on the basis of this study," said Dr. Adrian Vella, an endocrinologist and internist with the Mayo Clinic in Rochester, Minn.

Also, the study only found an association between alcohol consumption and diabetes risk, not a cause-and-effect connection.

The new research included data from the Danish Health Examination Survey. The survey of more than 70,000 people was done in 2007-2008. The participants provided details of their alcohol consumption, lifestyle and overall health. These people were followed through 2012, with an average follow-up of about five years.

The study revealed that men who had 14 drinks per week had a 43 percent lower risk of type 2 diabetes compared to non-drinkers, and women who had nine drinks per week had a 58 percent lower risk compared to non-drinkers.

The risk of type 2 diabetes was lower when people spread their drinking over three or four days a week, rather than drinking once per week. The researchers found a 27 percent lower risk in men and a 32 percent lower risk in women who drank on about half the days of a typical week.

Wine appeared to provide the most protective benefit, as men and women who drank seven or more glasses per week had up to a 30 percent lower risk of type 2 diabetes compared with those having less than one glass per week.

Women didn't benefit at all from drinking beer, but men who drank one to six beers a week had a 21 percent lower risk of diabetes, the investigators found.

Hard liquor provided no benefit to men. Women who had seven or more shots per week had an 83 percent increased risk of diabetes, the study reports.

Researchers can't say why alcohol might protect against diabetes, since this was an observational study rather than an experiment or clinical trial, Tolstrup said.

"Alcohol has been suggested to increase insulin sensitivity and lower fasting insulin resistance, which might play an important role in the progression of diabetes," Tolstrup said.

"But again, due to limited knowledge about mechanisms between alcohol and [blood sugar] control, the mechanism explaining our results is not clear," she added.

Mayo Clinic's Vella pointed out that studies that depend on people's self-reported food and alcohol consumption can be flawed, since participants may have a hard time remembering what they ate and drank in the past.
It's also tough to accurately capture through a questionnaire other things that might lower type 2 diabetes risk, such as daily exercise and a family history of diabetes.

In addition, it's not likely that a lot of people would develop type 2 diabetes during the relatively short follow-up time of five years used in this study, according to Vella.

The new study was published July 27 in the journal Diabetologia.

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Risk of Lung Cancer Increases With Diets Higher in Saturated Fats

OncologyNurseAdvisor

July 27, 2017, by James Nam, PharmD

High intake of total and saturated fat demonstrated an increased risk of lung cancer, researchers found.

Consumption of high amounts of saturated fats and low amounts of polyunsaturated fats may increase a person’s risk of developing lung cancer, according to a study published in The Journal of Clinical Oncology.1

Patient nutrition and dietary factors have long been identified as playing a role in cancer risk. Factors such as tobacco smoking and environmental exposures are closely linked to the occurrence of lung cancer, but new evidence shows that consuming specific types of fat may also impact the risk of lung cancer.

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This pooled analysis of 10 prospective cohort studies identified nearly 19,000 patients with primary incident lung cancer over a mean follow-up period of 9.4 years.

High intake of total and saturated fat demonstrated an increased risk of lung cancer in the highest quintile vs the lowest quintile (hazard ratio [HR], 1.07 vs 1.14, respectively; 95% CI, 1.00-1.15 vs 1.07-1.22, respectively; P <.001).

High intake of polyunsaturated fats consumption, however, demonstrated a decreased risk of lung cancer in the highest quintile vs the lowest quintile (HR, 0.92; 95% CI, 0.87-0.98; P =.02).

The increased risk associated with saturated fats was more pronounced in current smokers (HR, 1.23; 95% CI, 1.13-1.35; P <.001) vs former and never smokers, and was higher specifically for the risk of squamous cell and small cell carcinoma more than any other histologic types (HR, 1.61 vs 1.40, respectively; 95% CI, 1.38-1.88 vs 1.17-1.67, respectively; P <.001).

The study also reported that substituting 5% of energy of saturated fats with polyunsaturated fat led to a 12% reduction in risk of lung cancer, and a 16% to 17% reduction in risk of small cell and squamous cell carcinoma specifically.
The investigators concluded that “promoting polyunsaturated fat while reducing saturated fat intake, especially among current smokers and recent quitters, may present a modifiable dietary approach to the prevention of not only cardiovascular disease but also lung cancer.”

Reference