

Reports Show a Drop in Opioid Prescriptions and Dosage Strength, Rise in Prescription Duration and Opioid Hospitalizations

The latest news on the opioid crisis is mixed. Reports show some reduction in prescription rates and dosages, but an overall increase in prescription length, wide variation in prescribing across the United States, and prescription prevalence in 2015 that was 3 times as high as it was in 1999 and 4 times higher than it was in Europe in 2015. Centers for Disease Control (CDC) Acting Director Anne Schuchat told National Public Radio that the 2015 per capita prescription opioid rates are enough for “every American [to] be medicated around the clock for 3 weeks.”

The CDC analysis came on the heels of a report from the Agency for Healthcare Quality and Research (AHRQ) showing that opioid-related inpatient stays and emergency department (ED) visits more than doubled between 2005 and 2014.

The CDC report analyzed retail prescription data from 2006 to 2015, including rates, amounts, dosages, and durations prescribed. The analysis also included a county-by-county look at prescription data in 2010 and 2015. Here’s what researchers found:

The good news: overall prescribing rates have dropped by 13% since 2010 peak levels. From 2006 to 2010, opioid prescribing rates increased from 72.4 per 100 people to an all-time high of 81.2 per 100. By 2015, that rate had

dropped to 70.6 per 100 people. The amount of opioids also dropped, from the 2010 peak of 782 morphine milligram equivalents (MMEs) per capita to the 2015 rate of 640 MMEs per capita—still more than 3 times higher than 1999’s rate of 180 MMEs per capita.

The drop includes a decrease in prescription of high-dose opioids. The number of high-dose prescriptions (daily dosages of 90 or more MMEs) mostly was stable between 2006 and 2010, at 11.4 per 100 people, then dropped to a rate of 6.7 per 100 by 2015.

The bad news: prescription duration times have increased since 2006. While fewer people may be prescribed opioids, and while those opioids may be at lower strength, the rate of prescription supplies of 30 days or more jumped by 58% between 2006 and 2015—rising from 17.6 per 100 people to about 28 per 100. The overall average days’ supply also rose during that time period—from 13.3 days in 2006 to 17.7 by 2015. That’s a 33% increase.

The highest-prescribing areas tended to share certain characteristics. Researchers found several common characteristics of the high-prescribing counties, including larger percentages of non-Hispanic whites, higher rates of uninsured or Medicaid enrollment, lower education levels, higher rates of unemployment, “micropolitan” (small cities and towns) status, more dentists and physicians per capita, higher suicide rates, and a higher prevalence of diagnosed diabetes, arthritis, and disability.

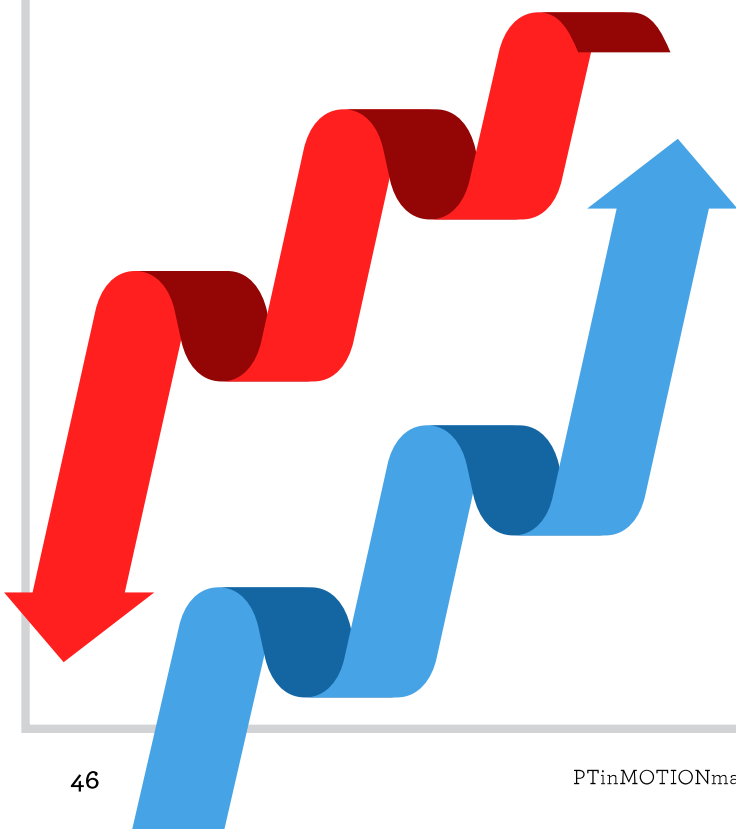
The CDC report was released not long after AHRQ published its analysis of opioid-related inpatient hospital stays and ED visits from 2005 to 2014. That report found that inpatient stays increased by 64% during the time period, with opioid-related ED visits doubling. The news was worse for women: between 2005 and 2014, inpatient rates that were historically lower than those for males caught up, so that by 2014, opioid-related inpatient rates for both sexes were roughly equal.

The report was produced by AHRQ’s Healthcare Cost and Utilization Project.

www.npr.org/sections/health-shots/2017/07/06/535656477/opioid-prescriptions-falling-but-remain-too-high-cdc-says

www.cdc.gov/mmwr/volumes/66/wr/mm6626a4.htm

www.hcup-us.ahrq.gov/reports/statbriefs/sb224-Patient-Characteristics-Opioid-Hospital-Stays-ED-Visits-by-State.pdf





PTJ: Preterm Infants Less Able to Explore, Which May Lead to Delays

Infants born preterm may be less able to perform certain motor and exploratory behaviors, which could lead to future cognitive and developmental delays, suggests a study in the September issue of *PTJ*. According to the study's authors, physical therapists in early-intervention programs should target behaviors such as head control and ability to make a fist.

Non-object-oriented exploration, wrote the authors, "is not only critical for infants to learn how to engage in social interactions and to learn about objects; it is also key for infants to learn to control their own bodies so they can perform perceptual-motor behaviors like lifting their heads against gravity, reaching, or moving their hands into midline."

Researchers followed the development of 24 healthy full-term infants (37–42 weeks gestational age), 24 infants born preterm, and 6 preterm infants who were born with brain injury.

Some of the findings include:

Holding up the head. Through the age of 9 months, all infants improved their ability to hold up their heads while lying on their stomach, but those born preterm were less able to do so.

Holding the head in midline. In the prone position, all infants improved, but full-term infants showed the greatest ability. Preterm infants with brain injury showed the least. There was no significant difference among the groups in ability to hold the head in midline while sitting.

Hand mouthing. Preterm infants with brain injury showed more hand mouthing than the other groups while prone but less while supine. There was no difference while sitting.

Touching the body or surfaces. Touching the body decreased for all infants over 9 months, but preterm

infants with brain injury did so much less frequently than did infants in the other groups.

Bouts of exploration per minute. At 6 months old, infants without brain injury performed 7% more bouts of exploration per minute while sitting than did preterm infants with brain injury. This difference increased to 74.6% by 18 months old.

The authors wrote that these non-object-oriented exploratory behaviors can "provide proprioceptive and haptic feedback, increase body awareness, and are believed to be the precursors of future reaching and grasping behaviors." Impairments in this area, they concluded, "are likely to cascade into delays in reaching and object exploration, which in turn will result in future motor and cognitive delays"—something proper early intervention could address.

<https://academic.oup.com/ptj/article-abstract/97/9/915/3866636/Infants-Born-Preterm-Demonstrate-Impaired?redirectedFrom=fulltext>

Study Links TV-Watching to Higher Risk of Later Mobility Disability in Older Adults

Older adults who choose to spend most of their time sitting and very little time being physically active risk sacrificing their mobility later on. That's the conclusion of a new study that says adults 50 to 71 who spend more than 5 hours a day watching television and fewer than 3 hours a week being physically active triple their chance of later experiencing a mobility disability.

The study, published in the *Journals of Gerontology: Medical Sciences*, analyzed data from 134,269 participants in surveys jointly sponsored by the National Institutes of Health (NIH) and the American Association of Retired Persons (AARP) in 1995-1996 and again in 2004-2005. The authors analyzed respondents' self-reported television viewing and other sedentary behaviors and average number of hours per week spent in light- and moderate-intensity physical activity (PA). Next, they matched up data sets with respondents' mobility status as reported in the later survey. (All respondents used in the study reported no mobility disabilities in the first survey.)

Researchers were particularly interested in separating the impact of television viewing from that of other sedentary behaviors such as computer time, napping, and sitting without watching TV. On the PA side of the equation, they were interested in finding out to what degree PA offset the debilitating effects of sedentary behavior. Here's what they found:

- After adjusting for PA, the relationship between total sedentary time and mobility disability was "almost negligible." However, disability increased steadily with increased reported hours of TV time.
- Compared with the referent group who reported watching no more than 2 hours of TV per day, respondents reporting 3 to 4 hours per day of TV viewing experienced 25% higher odds of mobility disability. Respondents reporting watching TV for 5 or more hours a day were found to have 65% increased risk of mobility disability.
- The odds of mobility disability dropped progressively as frequency and intensity of PA increased, although hours spent watching TV consistently pushed odds higher.

- Respondents who reported 7 or more hours of PA a week and up to 6 hours a day of sitting did not see their risk of mobility disability rise appreciably.

"Our findings corroborate those of other studies reporting sedentary behavior to be a risk factor for loss of physical function that is distinct from level of moderate-to-vigorous-intensity [PA]," the authors wrote. As for the stronger association between TV time and mobility disability, researchers believe 2 issues could be at play: first, respondents may be reporting TV-watching time with greater accuracy; and second, sitting time may be broken up during the day by periods of PA, whereas TV watching tends to take place in long periods of sitting uninterrupted by PA.

"Sitting and watching TV for long periods, especially in the evening, has got to be one of the most dangerous things that older people can do," lead author Loretta DiPietro, PhD, MPH, told National Public Radio. She speculated that binge-watching made possible by streaming video likely is making the problem worse.

"Our findings and those of others indicate that reductions in sedentary time, as well as increases in [PA], are necessary in order to maintain health and function in older age—particularly among those who are the least active," the authors wrote. "Current US public health recommendations for [PA] have not addressed sedentary time, but our results suggest doing so may be useful for reducing mobility disability."



<https://academic.oup.com/biomedgerontology/article/doi/10.1093/gerona/glx122/4056501/The-Joint-Associations-of-Sedentary-Time-and>

www.npr.org/sections/health-shots/2017/09/04/547580952/get-off-the-couch-baby-boomers-or-you-may-not-be-able-to-later



Study: Prevalence of Knee OA Today Twice What It Was 75 Years Ago

Knee osteoarthritis (OA) has more than doubled among Americans since 1940, say researchers, and the increase can't be explained by longer lifespans or a higher prevalence of obesity and overweight in recent decades. Instead, the real culprit could be physical inactivity, which the authors describe as "epidemic in the postindustrial era."

The study, appearing in the *Proceedings of the National Academy of Sciences*, compared knee joints of 2,756 skeletons from 3 groups of individuals: those who lived in the 1800s and early 1900s ("early industrial," N=1,581), those who lived during the late 1900s through the early 2000s ("postindustrial," N=819), and prehistoric hunter-gatherers who lived between 6,000 and 300 BCE ("prehistoric," N=176). Researchers were looking for knee joint eburnation—the ivory-like result of bone-on-bone contact that occurs after cartilage erodes—as the indicator for moderate to severe OA.

Here's what they found:

- The prevalence of knee OA in the postindustrial skeletons

was about 16%, a rate 2.6 times higher than that in the early industrial group, which had a 6% incidence rate. Knee OA prevalence in the prehistoric sample was 8%.

- After controlling for body mass index (BMI) and age when that information was available (1,859 of the 2,756 skeletons), researchers were unable to establish a correlation between these factors and prevalence of knee OA. Instead, rates remained 2 times higher for the postindustrial group even when compared with early industrial skeletons with similar ages and BMIs. BMI for the prehistoric sample could not be estimated.
- In the postindustrial individuals with knee OA, 42% had the disease in both knees. Bilateral occurrence was 30% among the early industrial samples with knee OA, and 17% among the prehistoric group.

"Although knee OA prevalence has increased over time, today's high level of the disease is not, as

commonly assumed, simply an inevitable consequence of people living longer and more often having a high BMI," the authors write. "Instead, our analyses indicate the presence of additional independent risk factors that seem to be either unique to or amplified in the postindustrial era."

The researchers believe that risk factor could have to do with "environmental changes"—namely, the reduced levels of physical activity associated with the postindustrial era, despite the human body's need for regular exercise. It's a phenomenon known as a "mismatch disease," when the human body can't easily or rapidly adapt to changes in the lived environment.

The good news, according to the researchers, is that their findings point to the possibility that knee OA is a largely preventable condition—provided there's a widespread "reappraisal of potential risk factors that have emerged or intensified only very recently."

www.pnas.org/content/early/2017/08/08/1703856114.full



Life and Death in a Single Rep

Helping a warrior gain the strength to serve.



Chris Kolba, PT, PhD, MHS, is the tactical rehab and conditioning coordinator at The Ohio State University's Wexler Medical Center. He also is a certified strength and conditioning specialist.

Defining Moment spotlights a particular moment, incident, or case that either led the writer to a career in physical therapy or confirmed why he or she became a physical therapist or physical therapist assistant. To submit an essay or find out more, contact Associate Editor Eric Ries at ericries@apta.org.

I've always been a big believer in the importance of physical strength in overall health. Time and research have shown that most people who physical therapists (PTs) see in the clinic need more strength than they have when they first arrive, if they're to recover optimally from injury and if they're to be best equipped to battle the aging process.

My background involves training for many years in various forms of karate and in Krav Maga—a self-defense system developed by the Israeli defense and security forces that combines techniques from boxing, wrestling, aikido, karate, and ground-fighting. The strength, coordination, balance, and discipline I've derived from these pursuits has been invaluable in all facets of my life. I've also lifted weights since high school.

Therefore, being able to combine strength training

and combat drills with education and training as a PT is, for me, a match made in heaven.

To be effective in their work, police officers and military personnel need both strength and the ability to fight—in defense of themselves and others. They are tasked with protecting the lives of all Americans, and they sometimes must put their own lives on the line to ensure the preservation of our safety and freedoms. If having the privilege to serve these valiant individuals as

a PT didn't light my fire, I'm not sure what would!

So, enter Larry. My experience with him defined why I do what I do.

Larry was a police officer in a demanding urban environment who also was in the Air Force Reserves. He had developed knee pain that was steadily progressing. It was starting to limit his job activities and his workouts, especially running. He had learned he was being deployed to Afghanistan and would be assisting a Navy SEAL team in its missions there. He knew he needed help if he was to be up to the task.

He saw his doctor, who found that Larry had a meniscal tear. Given the demands of his police work and the requirements of his upcoming deployment, he opted to have surgery immediately, then begin rehab. Larry's wife had been



a colleague of mine. She was familiar with my experience and background, and she believed her husband would respond well to my style of rehab. She told Larry about me, and he agreed that we seemed like a good match. But I'd have only 4 months to help get him literally combat-ready.

Talk about a no-pressure situation, right? Actually, there wasn't as much pressure as you'd think. Larry and I quickly found that we shared a passion for strength training and hard work. We had a rapport and a common purpose. We didn't so much sweat the timeline as savor the challenge and feel excited to get to work.

I'd been fortunate up to that point in my career to have worked with a number of high-level athletes. Larry's mental toughness and capacity for work, however, were as strong, if not stronger, than I'd ever seen in any patient or client. This got me excited, because it allowed me not only to push the limits of strengthening beyond the subacute phase but also to incorporate my

love of martial arts into Larry's rehab via various combat drills. This opportunity to bring it all together—my creativity, extensive background in strength training and combat-related techniques, and expertise as a PT—captured what most excites me about working in sports medicine.

Larry and I worked together in perfect synergy, and within 3 weeks he had regained full motion. All of his swelling was gone, and he was walking normally and without pain. We moved on to weights—with squats, deadlifts, and leg presses—in addition to various balance and stability exercises on level and unstable surfaces.

At about 7 weeks Larry was able to start jogging and jumping. We incorporated punching, kicking, and ground-fighting drills—ground-fighting is a form of wrestling that mimics hand-to-hand combat and takes place while the “combatants” are on the ground. We also did stair runs together, climbed over walls, and incorporated jumping and rolling drills. Larry's rapid

progression brought home to me everything that excites me about working with both sports and tactical athletes.

Larry's hard work, coupled with my appreciation of his willingness to pay the ultimate price for our country, inspired me to coin a phrase that started out as a deliberately over-the-top statement—sort of an in-joke—but became a mantra as Larry and I trained together: “1 more rep may mean the difference between life and death!” Obviously, I didn't mean that literally as we worked out in a gym. Still, I shouted it often to exhort Larry to push himself through an extra rep—mindful of the fact that every extra bit of strength might be meaningful in a real life-and-death situation in Afghanistan. I do a lot of “supersetting” with clients—following one exercise with an opposing one, such as following a series of pushups with a “pull”-type exercise. Larry fully embraced the challenge and always gave me that extra rep.

The effect was that our mentality, work ethic, and

dedication to workout goals meshed, bringing out the best in both of us. By the conclusion of our time together, not only was Larry combat-ready, he actually was in better shape than he had been prior to his injury. We both felt confident that he would have no physical difficulties during his tour in Afghanistan.

And indeed he didn't. Larry successfully fulfilled his duties overseas and returned home safely from deployment. It gave me a great sense of satisfaction to know I'd facilitated his ability to serve and defend our country, and I'd perhaps even helped keep him a little safer through his conditioning and readiness. My work with him encapsulated what I love about being a PT. ■



By the Numbers

1,370

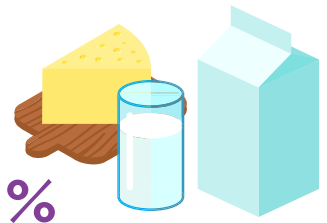
College athletes annually injured in both practice and competition in women's gymnastics, as reported by the National Collegiate Athletic Association. The injury rate is **10.4 per 1,000** athlete exposures.



SOURCE

College Sports-Related Injuries—United States, 2009-10 Through 2013-14 Academic Years. Morbidity and Mortality Weekly Report. Centers for Disease Control and Prevention. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6448a2.htm>.

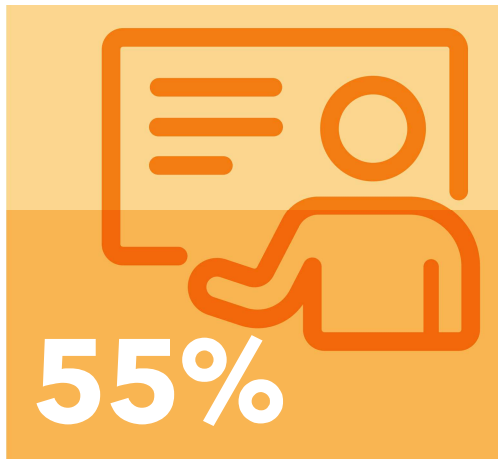
9%



American adults who consider saturated fats in food to be healthful. Another **19%** said saturated fats were neither healthful nor unhealthy.

SOURCE

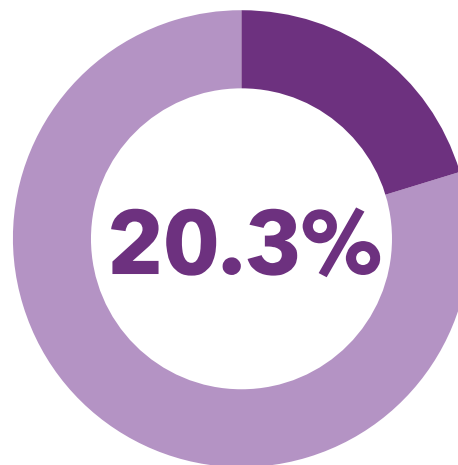
2017 Food & Health Survey. International Food Information Council Foundation. 2017. http://www.foodinsight.org/sites/default/files/2017_Food_and_Health_Survey_-_Final_Report_rev.pdf.



Americans who think that increasing pain management training would be very effective in reducing prescription painkiller abuse. Other strategies rated as very effective: increasing access to treatment programs (**51%**), public education and awareness programs (**44%**), and increasing research about pain and pain management (**43%**).

SOURCE

Kaiser Health Tracking Poll: April 2016. <http://kff.org/health-reform/report/kaiser-health-tracking-poll-april-2016/>.



Graduates of CAPTE-accredited physical therapist programs in 2016-2017 who are minorities. That's an increase from **13%** in 2014-2015. Minority student enrollment rose from **17% to 22.9%** during the same period.

SOURCE

Aggregate Program Data: 2016-2017 Physical Therapist Education Programs Fact Sheets. Commission on Accreditation in Physical Therapy Education. http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Aggregate_Program_Data/AggregateProgramData_PTPrograms.pdf.

33%

Parents of athletes who say they live in fear that their child will get a concussion.

SOURCE

How Knowledgeable Are Americans About Concussions? Survey conducted by Harris Poll for UPMC. April 2015. <http://rethinkconcussions.upmc.com/wp-content/uploads/2015/09/harris-poll-report.pdf>.



People covered by Medicare in 2015, with the majority enrolled in the traditional Medicare program (Parts A and B).

SOURCE

Health, United States, 2016: With Chartbook on Long-Term Trends in Health. National Center for Health Statistics, US Department of Health and Human Services, Centers for Disease Control and Prevention. <https://www.cdc.gov/nchs/data/hsr/hsr16.pdf>.



3,405

Mean contact/clock hours in physical therapist education programs in 2016-2017. That's an increase from **3,363** during 2015-2016.

SOURCE

Aggregate Program Data: 2016-2017 Physical Therapist Education Programs Fact Sheets. Commission on Accreditation in Physical Therapy Education. http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Aggregate_Program_Data/AggregateProgramData_PTPrograms.pdf.