

**Millennials, Meet the Boomers!**  
**Generational Considerations in Rendering Comprehensive Oral Health Care**

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**Presenter Disclosures for Betsy Reynolds, RDH, MS**

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**Boomers**

The Battle of the Bulge—so named because of the westward bulging shape of the battleground on a map—lasted from mid-December 1944 to the end of January 1945

It was the largest land battle of World War II in which the United States directly participated—more than a million men fought in the battle—600,000 Germans, 500,000 Americans, and 55,000 British  
Casualty estimates from the Battle of the Bulge vary widely

- American casualties are listed as 70,000 to 81,000, British as 1,400, and German casualties at between 60,000 and 104,000
- More than 100,000 German soldiers were taken prisoner
- In addition, 800 tanks were lost on each side, and 1,000 German aircraft were destroyed

Germany's final defeat loomed just a few months away

Electronic **television** was first successfully demonstrated in San Francisco on Sept. 7, 1927—the system was designed by 21 y/o Philo Taylor Farnsworth who had lived in a house without electricity until he was 14

Few inventions have had as much effect on contemporary American society as television—before 1947 the number of U.S. homes with television sets could be measured in the thousands but by the late 1990s, 98% of U.S. homes had at least one television set and those sets were on for an average of more than seven hours a day

The typical American spends (depending on the survey and the time of year) from 2.5 to almost 5 hours a day watching television—it is significant that this is not the only 'screen time' Americans enjoy

**Headliners: When Retirement Comes With a Daily Dose of Cannabis; Hu, W; reporting for the NY Times; 19 FEB 2017; accessed on 31 OCT 2017 at:**

**<https://www.nytimes.com/2017/02/19/nyregion/retirement-medicinal-marijuana.html>**

From retirement communities to nursing homes, older Americans are increasingly turning to cannabis for relief from aches and pains

Many have embraced it as an alternative to powerful drugs like morphine—cannabis is less addictive and with fewer side effects

**Headliners: Epidemiological Characteristics, Safety and Efficacy of Medical Cannabis in the Elderly; Source: Abuhaira R et al. Results appearing in Eur J Intern Med. 2018 Mar; 49:44-50; accessed 26 JUN 2019 at: <https://www.ncbi.nlm.nih.gov/pubmed/29398248?dopt=Abstract>**

In an Israeli study, investigators analyzed cannabis use in the elderly and their findings were enlightening

'2736 patients above 65 years of age began cannabis treatment and answered the initial questionnaire. The mean age was 74.5 ± 7.5 years. The most common indications for cannabis treatment were pain

(66.6%) and cancer (60.8%). After six months of treatment, 93.7% of the respondents reported improvement in their condition and the reported pain level was reduced from a median of 8 on a scale of 0-10 to a median of 4. Most common adverse events were: dizziness (9.7 percent) and dry mouth\*\*\* (7.1 percent). After six months, 18.1% stopped using opioid analgesics or reduced their dose.'

A University of Maryland study reported that there was overwhelming support from hospice professionals for using cannabis among hospice patients—91% of survey participants supported the use of cannabis in hospice care--Source: Costantino RC et al: A Survey of Hospice Professionals Regarding Medical Cannabis Practices. *J Palliat Med.* 2019 MAY 16; accessed 26 JUN 2019 at: <https://www.ncbi.nlm.nih.gov/pubmed/31094609>

'Regardless of legal status, hospice staff overwhelmingly support patient access to MC (medical cannabis). Those who practice in states where MC is not yet legal wish that it was. The consensus of our survey sample is that MC appears to be relatively safe and effective for a variety of conditions and is being used by several routes of administration... Our findings highlight important opportunities to support hospice providers and their patients through education and the development of policies.'-- Source: Researchers' statement

For most medical cannabis experts, this switch to cannabis has hardly been a surprise as many seniors are fed up with having to take a veritable cocktail of pills multiple times throughout the day—especially when the meds may or may not actually be effective in alleviating their medical conditions

It has been estimated that an astounding 17% of those 50+ years of age—~10 MILLION people—will show signs of addiction by 2020--Source: Dr. Phil; original broadcast #2698 aired 8 SEP 2017

An investigation to assess cohort effects in prescription opioid and heroin overdose mortality in the United States was conducted utilizing an age–period–cohort analysis of drug overdose mortality in the United States—and the findings were alarming--Source: Xiwen Huang, Katherine M. Keyes, and Guohua Li: Increasing Prescription Opioid and Heroin Overdose Mortality in the United States, 1999–2014: An Age–Period–Cohort Analysis; *American Journal of Public Health* 108, 131-136. Published online 6 DEC 2017. Accessed 27 JUN 2019 at:

<https://ajph.aphapublications.org/action/showCitFormats?doi=10.2105%2FAJPH.2017.304142>

Researchers found those born between 1947 and 1964 experienced excess risks of prescription opioid overdose death and of heroin overdose death—those born between 1979 and 1992 also experienced an increased risk of heroin overdose death

## **Clinical Application**

**Headliners: Qualitative Analysis of Cannabis Use Among Older Adults in Colorado; Source: Bobitt, J, Qualls, SH, Schuchman, M et al. *Drugs Aging* (2019) 36: 655; accessed 26 JUN 2019 at: <https://link.springer.com/article/10.1007%2Fs40266-019-00665-w>**

In a 2019 University of Colorado study, researchers reported that cannabis use among seniors in the U.S. rose tenfold over a decade as more baby boomers used it to treat a range of ailments—including pain, anxiety and depression

The study found 9.4% of adults aged 60 to 64 reported using marijuana in the past year—up from 1.9% 10 years earlier

As more states legalize medical and recreational cannabis, the number of Americans over age 60 using the drug is expected to rise--Source: Dr. Hillary Lum; assistant professor; University of Colorado School of Medicine; study co-author

While recreational cannabis use is legal in Colorado and 10 other states and the District of Columbia, medical marijuana is legal in 33 states—despite this, many older Americans are having trouble accessing medical cannabis products

The study participants stated doctors should work to learn more about medical marijuana—including dosage, method of usage and potential benefits or risks older adults face when using the drug

Some told the researchers their primary care doctors were either unable or unwilling to approve a medical marijuana card, which would allow them to purchase the drug at a medical dispensary

### **Clinical Application: Oral Health Effects of Marijuana Use**

**Headliners: Periodontal and Oral Manifestations of Marijuana Use; Rawal SY et al; J Tenn Dent Assoc. 2012 Fall-Winter; 92(2):26-31; accessed 16 OCT 2017 at: <https://www.ncbi.nlm.nih.gov/pubmed/23420976>**

Researchers concluded that chronic cannabis use may result in gingival enlargement with clinical characteristics similar to phenytoin-induced enlargement

**Headliners: Associations Between Cannabis Use and Physical Health Problems in Early Midlife: A Longitudinal Comparison of Persistent Cannabis vs Tobacco Users; Madeline H. Meier, PhD et al; results appearing in JAMA Psychiatry. 2016;73(7):731-740; accessed at: <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2526003>**

To test associations between cannabis use of over 20 years and a variety of physical health indexes at early midlife, researchers examined over 1000+ study participants

Cannabis use for up to 20 years was associated with periodontal disease[s] but was not found to be associated with other physical health problems in early midlife such as lung function, systemic inflammation, and metabolic health

‘Although we found that cannabis users were generally no worse off than nonusers on almost all health indexes, they did have worse periodontal health. Cannabis use was associated with attachment loss, which can result in tooth loss. A similar association was observed for tobacco use, consistent with previous research. Tobacco’s effect on periodontal disease is thought to be mediated through increased inflammation and vasoconstriction, which may or may not be the case for cannabis. Cannabis use was not associated with systemic inflammation...but prior research has shown that cannabis use **can induce vasoconstriction\*\*\*.**’--Source: Research statement

### **Xerostomia**

Cannabis can and does cause excessive oral dryness—whether it is taken for recreational or medical purposes

When ingested, THC binds to endocannabinoid receptors found in the salivary glands—temporarily shutting down the lines of communication between the nervous system and the saliva-producing glands in the process

Cannabinoid receptors are present throughout the body and are embedded in cell membranes—they are believed to be more numerous than any other receptor system in the body

### **Any ideas on how to reduce caries risk and inflammation associated with xerostomia?**

Cleaning the tongue is a vital component to comprehensive oral hygiene care—both professionally as well as in the home setting

### **One thing to consider:**

A 2017 report by the National Academies of Sciences, Engineering, and Medicine on the health effects of cannabis found that:

- ‘There are several challenges and barriers in conducting cannabis and cannabinoid research [including] the classification of cannabis as a Schedule I substance, that impede the advancement of cannabis and cannabinoid research...[and] the difficulty for researchers to gain access to the quantity, quality, and type of cannabis product necessary to address specific research questions on the health effects of cannabis use.’

## Millennials

Since the devastating massacre at Columbine High School on April 20, 1999, the United States has seen more than 230 school shootings—NOT including ones at colleges or universities--Source: 'By the Numbers: School Shootings Since Columbine'; as reported by Kelly Zegers for NBC (San Diego); accessed on 27 JUN 2019 at: <https://www.nbcsandiego.com/news/national-international/School-Shootings-Since-Columbine-508503771.html>

When millennials entered the world, there was a small calm in the storm of world conflict—that ended in 2001 with 9/11 and the full-blown storm of world conflict through domestic and foreign attacks that followed

- The U.S. military gave or took fire in some form or another in at least seven countries in 2018: Afghanistan, Pakistan, Iraq, Syria, Somalia, Yemen, and Libya
- At least 15 United States' soldiers were killed in Afghanistan in 2018 in a war that entered its 18th year in October 2018
- The U.S. military also continues to be active in Iraq and Syria—conducting airstrikes and advising local forces on the ground
- Currently, the United States has dramatically increased the number of drone strikes in places the U.S. is not currently at war

'Generations are shaped by their place in history, and it's an orientation that starts in childhood. Prior to 9/11, millennials were already on their way to becoming an entirely different generation than the ones that come before.'--Source: Neil Howe, historian and author

For Millennials, who were still figuring out who they were and learning how to navigate the world, the 9/11 terrorist attacks left an indelible mark that played a significant role in shaping their perception of the world around them

In an effort to combat rising fear and uncertainty, parents and teachers encouraged Millennials to speak up and share what was on their minds—school counselors gathered kids to special meetings to help them feel safe, valued, and respected and the '**self-esteem movement**' of the time encouraged adults to be gentle with their children and support them however they could (think 'participation trophies')

### Another Myth Worth Busting

Textbook makers, bookstore owners and college student surveys all say Millennials strongly prefer print for pleasure and learning—a bias that surprises reading experts given the same group's proclivity to consume most other content digitally--Source: Michael S. Rosenwald; reporting for the Washington Post; appearing in the Idaho Statesman; 2/26/15

'These are people who aren't supposed to remember what it's like to even smell books. It's quite astounding.'--Naomi S. Baron; linguist specializing in digital communication; American University  
A study published by the Pew Research Center found that 88% of American Millennials claimed to have read at least one book over the past year—compared to just 79% of their elder counterparts--Source: Zickuhr K and Rainie L: 'Younger Americans' Reading Habits and Technology Use'; posted 10 SEP 2014; accessed 27 JUN 2019 at: <https://www.pewinternet.org/2014/09/10/younger-americans-reading-habits-and-technology-use/>

Another significant e-problem—especially for learning new material—is **distraction**

In surveyed investigations, truly jaw-dropping findings showed that only 1% of students multitask while reading hard copy—compared to 90% of those reading on-screen (Source: Naomi S. Baron; linguist specializing in digital communication; American University)

Millennials became accustomed to close relationships and open dialogue with their parents, teachers, and other authority figures—at work, they are the generation that feels no compunction in approaching the boss for a quick chat or a lunch date

## EMPLOYMENT

Employment of dental hygienists is projected to grow much faster than the average for all occupations—the demand for dental services will increase as the population ages and as research continues to link oral health to overall health

### Quick Facts from the U.S. Department of Labor (Bureau of Labor Statistics):

2018 Median Pay (2018)	\$74,820 per year / \$35.97 per hour
Typical Entry-Level Education	Associate's degree
Number of Jobs (2016)	207,900
Job Outlook, 2016-26	20% (much faster than average)***
Employment Change, 2016-26	40,900

'Nearly all dental hygienists work in dentists' offices, and many work part time.'

### Myth Buster

Baby boomers sometimes believe **millennials are entitled and lazy**—but this could not be further from the truth--Source: Mark Lurie; Founder & CEO; Codex Protocol; speaking with Quora; accessed 17 JUL 2019 at: <https://www.forbes.com/sites/quora/2018/09/25/why-is-there-such-a-disconnect-between-baby-boomers-and-millennials-when-it-comes-to-work-ethic/#31c9f2d51de7>

Millennials have entered a professional world where their realities are wildly different from the ones Boomers knew—for example, because many millennials expect to be fired or let go regularly, they want work that is directly in line with their own career equity and helps them improve their career prospects For Millennials, most are interested in what can benefit them now—a belief that does not come from an inability to commit but rather as a result of massive turnover rates, an unstable economy, and a more competitive environment

Because Millennials think their time is limited, they often do not invest in doing things outside their own path—Boomers, however, are used to working hard for a company in exchange for long-term investment in skills development and benefits like retirement funds

When Boomers entered the workforce, they were expected to pay their dues in order to move forward—they understood that if they worked hard for several years, and the 'company' benefited from their work, they would be rewarded with regular pay raises and retirement benefits

Most Boomers expect Millennials to work for the same bargain—they think Millennials want to progress too fast and are not paying their dues

What Boomers do not realize is the other end of the deal they had—the end that is supposed to be a payoff for the employee—no longer exists in the modern working world

### One more 'Employment Tidbit':

The median number of years that wage and salary workers have worked for their current employer is currently 4.6 years--Source: Bureau of Labor Statistics

#### Length of employment varied by age:

- The median tenure for workers aged 25 to 34 was 3.2 years—the median tenure for employees age 65 and over was 10.3 years
- Workers in management, professional, and related occupations had the highest median tenure (5.5 years)—workers in service occupations had the lowest median tenure (3.2 years)

**Upside:** On average, it is estimated that people change jobs every three to five years—those 'job switches' may reward employees with higher compensation and a broader base of skills than what would be acquired by working for only one or two companies during an entire career

Millennials were taught that the best kind of work was **team work**—this collaborative mentality was reinforced by the use of tech devices (phones and personal computers) to stay connected  
Social media opened up a whole new world of crowd-sourcing and connectivity, allowing Millennials to always have access to their peers—as a result, this generation routinely loves a good brainstorm session, and prefer flatter, more networked organizational structures

**Technology** rapidly evolved when Millennials were growing up, so they learned to adapt to and expect change—they tend to be on the lookout for the latest and greatest in technology for the workplace  
Millennial preferred means of communicating: electronically

Baby Boomers value relationships—they grew up making phone calls and writing letters to solidify strong interpersonal skills--Source: <https://www.psychologytoday.com/us/blog/the-truisms-wellness/201602/baby-boomers-generation-z>

### **Clinical Application**

As Boomers age, they are becoming more fluent in technology—they tend to use these technologies as productivity tools as opposed to connectivity

Provision Living Senior Communities conducted a poll of 1000 Baby Boomers and 1000 Millennials to see how much time they spent on their Smartphones

**Headliners: Prominent Exostosis Projecting from the Occipital Squama More Substantial and Prevalent in Young Adult than Older Age Groups; Source: Shahar D and Sayers MGL; Scientific Reports; 20 FEB 2018. Accessed on 18 JUL 2019 at: <https://www.nature.com/articles/s41598-018-21625-1>**

A 2018 study of 1,200 chiropractic patients published in Scientific Reports reported that young adults aged 18 to 30 were growing bone masses on the backs of their skulls—the result of overuse of mobile technology because users are bending their heads forward to access their screen

The story went viral and was reported in several newspapers and was broadcasted on numerous television shows

There was one problem: The researchers did not provide the necessary data to back up their claim--  
Source: John Hawks; paleoanthropologist; University of Wisconsin

### **A more likely explanation:**

- The nuchal ligament helps to stabilize the head when running—while many primates have a nuchal ligament, only humans experience bone spurs on their necks because they run UPRIGHT
- The strain created by upright physical activity can cause muscles and the nuchal ligament to pull on connective tissues—stressing the bone into forming a spur

‘We are looking into issues regarding this paper and we will take action where appropriate.’--Source: Spokesperson for Scientific Reports in a statement to PBS NewsHour as posted at: <https://www.pbs.org/newshour/science/smartphones-arent-making-millennials-grow-horns-heres-how-to-spot-a-bad-study>

This story became popular in part due to the nature of the modern media landscape—specifically, how news organizations re-report stories, and how quickly stories steeped in moral panic are shared on social media

Recent research suggests that it is difficult—if not impossible—to correct a viral story once it has exploded

### **Clinical Application: The Importance of Science**

When making patient treatment and home care recommendations, we depend on scientific investigation

All scientific endeavors depend on the TRUTH of investigative research

Helping our patients make informed choices and decisions about aspects of their oral as well as their overall health is inherent in the dental hygiene profession

## Words of Wisdom

- ‘Let us begin by committing ourselves to the truth—to see it as it is, and tell it like it is—to find the truth, to speak the truth, and to live the truth.’
- Those words were spoken by Richard Nixon as he accepted the Republican nomination for president in 1968

## Back to the course...

Yet for all of this ‘connectivity’, we have ‘never been more detached from one another, or lonelier’  
Time is being spent with a screen takes time away from engaging in other activities

In the last fifty years, regardless of age, geographic location, gender, race, or ethnicity, rates of loneliness have doubled in the United States—this increase has been associated with several growing concerns related to mental and physical well-being

**Headliners: Americans Are A Lonely Lot—and Young People Bear the Heaviest Burden; Source: Rhitu Chatterjee; reporting for Health News from NPR; posted 1 MAY 2019; accessed 27 JUN 2019 at: <https://www.npr.org/sections/health-shots/2018/05/01/606588504/americans-are-a-lonely-lot-and-young-people-bear-the-heaviest-burden>**

A nationwide survey by the health insurer Cigna found that loneliness is widespread in America—investigators reported more than half of respondents reporting that they feel alone or left out always or sometimes

Utilizing the well-respected ‘UCLA Loneliness Scale’, Cigna surveyed 20,000 adults online across the country—the survey tool uses a series of statements and a formula to calculate a loneliness score based on responses

Scores on the UCLA scale range from 20 to 80—people scoring 43 and above were considered lonely in the Cigna survey (higher scores suggested a greater level of loneliness and social isolation)

54% of participants said they ‘always or sometimes feel that no one knows them well’

56% reported they sometimes or always felt like the people around them ‘are not necessarily with them’  
40% felt like ‘they lack companionship’, their ‘relationships aren’t meaningful’ and that they ‘are isolated from others’

The survey also found something surprising about loneliness in the younger generation

- Millennials scored 45.3
- By comparison, baby boomers scored 42.4
- The Greatest Generation (people ages 72+) had a score of 38.6 on the loneliness scale

‘Our survey found that actually the younger generation was lonelier than the older generations.’--

Source: Dr. Douglas Nemecek; chief medical officer; Behavioral Health (Cigna)

‘Too often people think that this [problem] is specific to older adults. This report helps with the recognition that this can affect those at younger ages.’--Source: Julianne Holt-Lunstad; psychologist; specializing in Health effects of loneliness; Brigham Young University

The Cigna study also found that people who spent less time looking at screens and more time having face-to-face social interactions were less likely to be depressive or suicidal

Previous research showed that how people used social media determined its influence on one's sense of isolation—if social media is passively being used (for instance, just scrolling feeds), its use is associated with more negative effects. But if it's being used to reach out and connect to people to facilitate other kinds of [in-person] interactions, it's associated with more positive effects.--Source: Holt-Lunstad

## Loneliness has health consequences

Several studies in recent years have documented the public health effect of loneliness—linking feelings of isolation to a higher risk of coronary heart disease and stroke, alterations in immune response, and negative impact on recovery from breast cancer--Source: Health News (NPR)

Studies have found that loneliness is a predictor of premature death—not just for the elderly, but even more so for younger people--Source: Holt-Lunstad, J. et al: 'Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review'; Perspectives on Psychological Science, 10(2), pp. 227–237. 2015. Accessed on 27 JUN 2019 at:

<https://journals.sagepub.com/doi/abs/10.1177/1745691614568352#articleCitationDownloadContainer>

### Worth Noting:

- The survey also found that working too little or too much was associated with the experience of loneliness—which suggested that workplaces are an important source of social relationships and work-life balance is important for avoiding loneliness

### Clinical Application

Be happy where you work—you are a gift!

'Everywhere you look, you'll see the proof that social media are turning us into solitary creatures. Whether at a college library, a coffee shop, or even a beach, people now spend much of their time looking down while furiously connected to keyboards and tiny touch screens. Being 'alone together' has an addictive appeal, because real human relationships are messy, demanding, and frustrating...Sips of online connection provide only the illusion of companionship. **May I suggest that we put down our devices, look at one another, and let's start the conversation?**'--Sherry Turkle; New York Times; appearing in THE WEEK; 5/4/12

### The Human Moment

Defined as 'an authentic psychological encounter that can happen only when two people share the same physical space'--Source: Edward Hallowell, MD; psychiatrist; 'The Human Moment at Work'; appearing in the Harvard Business Review; January-February 1999 issue; accessed on 21 July 2016 at: <https://hbr.org/1999/01/the-human-moment-at-work>

The human moment has two prerequisites: physical presence and emotional and intellectual attention  
E-mail, texting, voicemail, and social media are one-way and electronic—allowing us to communicate with people when WE want to and from any location

Human moments are disappearing as the tide of electronic hyperconnection rises—technological changes have made many face-to-face interaction unnecessary

The BIG 'However': **People need human contact in order to survive**

### Health Concerns

Millennials are often credited with driving the \$4.2 trillion global wellness market—popularizing yoga, meditation, and extreme fitness

#### And they are healthier as a result, right???

- According to the Blue Cross Blue Shield (BCBS) Health Index, in 2017, Millennials had an average BCBS Health Index of 95.1—meaning, as a group, Millennials were living at about 95% of their optimal health
- Further data analysis revealed that older Millennials (aged 34-36) have higher prevalence rates for nearly all of the top 10 conditions than did Generation X members when they were in the same age range (age 34-36)—with younger generations facing health challenges at earlier ages than previous generations, measuring the health of Millennials is critical to improving this generation's long-term health and wellness

### **The Mighty Thyroid: Prevalence and Impact of Thyroid Disease**

An estimated 20 million Americans have some form of thyroid disease and it has been suggested that more than 12% of the U.S. population will develop a thyroid condition during their lifetime

Up to 60% of those with thyroid disease are unaware of their condition

Women are five to eight times more likely than men to have thyroid problems—one woman in eight will develop a thyroid disorder during her lifetime

Undiagnosed thyroid disease may put patients at risk for certain serious conditions such as cardiovascular diseases, osteoporosis and infertility

**Headliners: Don't Screen For Thyroid Cancer, Task Force Says; Source: Journal of the American Medical Association; 9 May 2017; As reported on NPR's 'All Things Considered'; 9 May 2017; accessed on 14 May 2017 at: <http://www.npr.org/sections/health-shots/2017/05/09/527569291/dont-screen-for-thyroid-cancer-task-force-says>**

The U.S. Preventive Services Task Force oversight group puts thyroid cancer screening in its don't-do-it category in recommendations

The task force concluded that, although screening for cancer would seem to be an obvious way to save lives, in the case of thyroid cancer screening, efforts actually backfire—'the screening process almost always detects cancers that would never grow into life-threatening tumors'

'The harms outweigh the benefits. We would recommend against screening for thyroid cancer in adults who have no symptoms.'--Source: Dr. Seth Landefeld; member of the USPS Task Force; chairman; Department of Medicine; University of Alabama (Birmingham)

'If you look early, you just find a whole new category of patients that has the disease but is never going to suffer from it at all. But they will suffer from the treatment.'

Source: Dr. H. Gilbert Welch; Dartmouth Institute for Health Policy and Clinical Practice

Here's the kicker: 'As soon as somebody has symptoms, such as a swelling in the neck or change in their voice or swallowing, or pain in the neck ... you're in a different ballpark. You really want to sort those symptoms out.'--Landefeld

### **Some Heartfelt Tidbits:**

Heart disease is the leading cause of death for women in the United States, killing 299,578 women in 2017—or about 1 in every 5 female deaths--Source: CDC; accessed online on 18 JUL 2019 at: <https://www.cdc.gov/heartdisease/women.htm>

Despite increases in awareness over the past decades, only about half (56%) of women recognize that heart disease is their number 1 killer

Many erroneously believe that since heart disease usually develops in women in their 50s and beyond, millennials do not need to worry right now—but that is wrong according to Johns Hopkins Medicine's cardiologist and professor Roy Ziegelstein, M.D.

**Headliners: Twenty Year Trends and Sex Differences in Young Adults Hospitalized With Acute Myocardial Infarction; Source: Sameer Arora et al; Circulation; posted 19 FEB 2019; accessed 18 JUL 2019 at: <https://www.ncbi.nlm.nih.gov/pubmed/30586725>**

'The proportion of AMI ('acute myocardial infarction') hospitalizations attributable to young patients increased from 1995 to 2014 and was especially pronounced among women. History of hypertension and diabetes among young patients admitted with AMI increased over time as well. Compared with young men, young women presenting with AMI had a lower likelihood of receiving guideline-based AMI therapies. A better understanding of factors underlying these changes is needed to improve care of young patients with AMI.'--Researchers' conclusion

**Clinical Application: Risk Factors for Cardiovascular Disease**

## Back to Millennials

Staff at the City on a Hill believe that most Millennials who come in for depression or anxiety want help for that specific issue—for this generation, there is less stigma around seeking mental healthcare. According to one of City on a Hill's nurse practitioners, Alicia Wright, her Millennial patients reported feeling pressure to do more, to work harder, and, with social media, to keep up with peers ('highlight reels' on social media do not usually include real-life struggles)

**Headliners: U.S. Antidepressant Use Jumps 65% in 15 Years; Source: Laura Pratt; lead investigator; CDC's National Center for Health Statistics (NCHS); results released 15 AUG 2017; as reported by HealthDay News; 15 AUG 2017; accessed on 23 OCT 2017 at: <http://klinikkok.com/uncategorized/u-s-antidepressant-use-jumps-65-percent-in-15-years/>**

According to the CDC, the number of Americans who say they have taken an antidepressant over the past month rose by 65% between 1999 and 2014

The 2017 report is based on replies by more than 14,000 Americans—aged 12 and older—to a federal government health survey conducted between 2011 and 2014 (results were compared to those from prior surveys stretching back to 1999)

By 2014, about one in every eight Americans over the age of 12 reported recent antidepressant use. Women are nearly TWICE as likely as men to be taking the medications—with antidepressants used by 16.5% of females compared to just under 9% of males

The researchers noted that 'one-fourth of all people [surveyed] who took antidepressants over the past month reported having taken them for 10 years or more'

### Why the steep rise in antidepressant use?

One explanation:

- 'People have become increasingly stressed and depressed in our society. Social media continues to paradoxically cause people to be more isolated and out of touch with their feelings. In addition, direct-to-consumer advertising, coupled with an evolving societal mindset to just take a pill to make things better, both contributed to the growth in antidepressant use over this time period.'--Source: Dr. Seth Mandel; director of psychiatry; Northwell Health's Huntington Hospital (Huntington, NY)

"A lot of millennials don't think they have to see a primary care doctor regularly, because they're young. Most come to the clinic for an acute problem like a cold or cough. But when we take their blood pressure, there's often this surprise. And we have to tell them, 'You have a larger health issue.'"--Source: City on a Hill

'With a focus on engaging millennials, identifying key drivers and enacting innovative solutions, BCBS companies are launching Millennial Health Listening Sessions across the country, a series of workshops to learn from leading healthcare experts, employers, digital leaders and millennials on how the healthcare system can help create a path toward better health for this generation. The insights in this report on the health of American millennials can serve as a catalyst for improving the health of all Americans.'--Source: Blue Cross Blue Shield: The Health of Millennials; posted 24 APR 2019; accessed 17 JUL 2019 at: <https://www.bcbs.com/the-health-of-america/reports/the-health-of-millennials>

'The [BCBS] report discusses some disturbing trends for millennials, including the increased prevalence of several significant health conditions and less use of preventive care as compared to Generation X. This forum [scheduled for July 2019] will bring together millennials, health care providers, business and community leaders, patient advocates, and health plans to discuss solutions that improve millennials' health, both now and for the rest of their lives.'--Source: In a statement from Cory Harris; Wellmark's chief operating officer

The Blue Cross Blue Shield Association will debut the information gathered at the July forum and proposed initiatives to improve millennial health at a national Health of America conference in November 2019

### **For the 'Here and Now'**

City on a Hill is a free health clinic in Zeeland, Michigan—since 2017, the clinic has seen a 27% increase in the number of millennial-aged patients

'[M]illennials are coming in with more complicated health problems – things you would expect to have seen in older adults.'--Source: Christine Plummer; clinic director; City on a Hill

### **Headliners: Strokes Seen More Among Young People; Source: Reported by Gracie Bonds Staples for the Atlanta Journal-Constitution; appearing in the Idaho Statesman; 7/7/14**

The Shepherd Center (Atlanta) rehabilitation program for younger patients has seen an upsurge in business recently

'Stroke is typically thought of as something that affects older people, but more and more young people are having them and we see that time and again reflected in the patients we admit. Here the average age of patients in our stroke program is 31.'--Dr. Ford Vox; staff physician; Shepherd Center

To keep patients on track to better health, City on a Hill has a continuing care clinic for patients who need follow up—the clinic also offers basic classes on managing chronic diseases, getting active and nutrition

### **Good News?!?!?!?**

- According to the BCBS report, one-third of millennials have health conditions that reduce their quality of life and life expectancy—however, the Millennial population is healthier than the national average based on the Blue Cross Blue Shield Health Index

### **Clinical Applications**

Nutritional counseling in the dental hygiene setting is an integral part of delivering comprehensive care

### **Headliners: Secular differences in the association between caloric intake, macronutrient intake, and physical activity with obesity; Source: Brown, RE et al; results appearing in Obesity Research & Clinical Practice; 10 (3); May–June 2016. p. 243-25; accessed 19 JUL 2019 at:**

**<https://www.sciencedirect.com/science/article/abs/pii/S1871403X15001210>**

Published in the journal Obesity Research & Clinical Practice, an investigation of data involving 36,000+ U.S. adults was conducted to determine whether the relationship between caloric intake, macronutrient intake, and physical activity with obesity has changed over time

The researchers discovered that it is harder for millennials to lose weight than it was for their parents at the same age

'[F]or a given amount of caloric intake, macronutrient intake or leisure time physical activity, the predicted BMI was up to 2.3 kg [5 lbs]/m<sup>2</sup> higher in 2006 than in 1988 in the mutually adjusted model (P < 0.05).'--Source: Researchers conclusion

'These results are clearly in contrast with the common notion that weight management is simply about what you eat and how much you exercise.'--Source: Jennifer Kuk, PhD; study co-author; associate professor; School of Kinesiology and Health Science; York University (Canada) in a statement to Yahoo Health

### **A couple of Kuk theories:**

#### **Millennials were likely born to 'older' moms**

- There is evidence that children born to older mothers have more fat than children born to younger mothers—especially if the mother is overweight

- Since the U.S. population is heavier than ever (as a whole) and women are waiting longer to have children, it may play a role

#### **Meals are eaten later**

- Rodent studies have shown that when a meal is eaten can impact your weight
- Those that ate later in the evening (as is a common practice) weighed more than rats that mainly ate earlier in the day—even though both groups ate the same number of calories

#### **Medications**

- Some medications lower metabolic rate and are related to weight gain—the effect of medications can vary by person, but anti-depressants and medications to control diabetes have been linked to weight gain

#### **Environmental Pollutants**

- Many chemicals in our environment are now linked with weight gain—and may have an impact on the way the body deals with calories
- Termed ‘**obesogens**’, these foreign chemical compounds disrupt normal development and balance of lipid metabolism—which in some cases, can lead to obesity

A 21st Century field of investigation, **obesogen research** developed from two separate scientific research areas:

- Endocrine Disrupting Chemicals (EDCs)
- Developmental Origins of Health and Disease (DOHaD)

Endocrine Disruptors are exogenous chemicals or mixtures of chemicals that interfere with the action of hormones—exposure to EDCs during early development (DOHaD) has been shown to increase susceptibility to a variety of diseases including infertility, asthma, breast and prostate cancer, early puberty, susceptibility to infections, heart disease, autoimmune disease, attention deficit hyperactivity disorder/learning disability and obesity and fat cell development\*\*\*

The most common obesogens and how to avoid them: (Source: David Friedman, ND; <https://www.mindbodygreen.com/articles/what-are-obesogens-and-where-are-they-found>)

#### **Bisphenol-A (BPA) and Phthalates:**

- Traditionally used worldwide in plastics for food and drink storage, BPA mimics estrogen and has been associated with impaired reproductive function—it is also an obesogen
- Phthalates are a group of chemicals used to make plastics more flexible and harder to break—these obesogens are found in dairy products (due to the plastic tubing used to milk cows), meats, tap water that has been tainted by industrial waste, and pesticides sprayed on conventional fruits and vegetables
- They can also show up in shampoo, hair spray, deodorant, nail polish, insect repellent, and even shower curtains

#### **To avoid BPA and Phthalates:**

- Use the Environmental Working Group’s database ([www.EWG.org](http://www.EWG.org)) to check out what products contain these obesogens—their searchable database gives access to 16,000 processed foods and drinks that are packaged in materials containing phthalates and BPA and also has an extensive list of chemical-free skin care products
- Try to stay clear of plastic containers with the number 3, 6, or 7 on the bottom—instead, look for the numbers 2, 4, or 5 recycle code (these products are BPA- and phthalate-free)
- Buy eco-friendly alternatives to plastic bottles for hot or cold liquids—glass containers can be used for storage!

### **By the way:**

- We produce six BILLION pounds of the obesogen BPA every year—it is detectable in 93% of Americans due to the fact that BPA can leach from food and drink packaging, cans, and bottle tops (especially when exposed to heat)
- Phthalates are detectable in 75% of Americans—one BILLION pounds of phthalates are produced annually worldwide, and they leach easily into blood, urine, and saliva

### **Herbicides and Pesticides**

- Herbicides can disrupt normal cellular mitochondrial function and have been shown to cause insulin resistance in animals
- Pesticides are linked to obesity, diabetes, and other morbidities  
Department of Agriculture data shows that the average American ingests or is exposed to 10 or more pesticides every day—90% of these are endocrine disrupters which have been linked to obesity!

### **To avoid Herbicides and Pesticides:**

- Buy local organic produce whenever possible
- At the grocery store, look for 'USDA Certified Organic' on the label—this ensures the product does not contain pesticides or herbicides
- Do not limit organic products to food alone—look for organic varieties of body care products and clothing as well

### **Hormones and Antibiotics**

- **Estrogen, progesterone, and testosterone** is used to increase the weight of **cattle**—these same substances have been linked to increased weight gain
- Antibiotics are used in **chicken** and **farmed-raised fish** to help them fight off infection—these antibiotics also aid in fattening up fish and chicken and can do the same when humans eat them  
Research endeavors examining connections between **poultry** consumption and weight gain have yielded some interesting findings

- One study out of the Netherlands examined ~4,000 people and found chicken consumption correlated with weight gain--Source: Gilsing AM et al: Longitudinal changes in BMI in older adults are associated with meat consumption differentially, by type of meat consumed; J Nutr. 2012 Feb;142(2):340-9. Accessed on 14 NOV 2017 at: <https://www.ncbi.nlm.nih.gov/pubmed/22223576>
- Another study followed 89,000 people in four other countries and found that animal protein intake was associated with long-term weight gain—poultry was associated with 40% more weight gain than red meat or processed meat--Source: Halkjær J et al: Intake of total, animal and plant protein and subsequent changes in weight or waist circumference in European men and women: the Diogenes project; Int J Obes (Lond). 2011 Aug; 35(8):1104-13. Accessed on 14 NOV 2017 at: <https://www.ncbi.nlm.nih.gov/pubmed/21139559>

### **What makes poultry so bad?**

- In addition to antibiotics, chickens are fatty these days because of the way they have been genetically manipulated (up to ten times more fat and calories than they used to have)

### **To avoid Hormones and Antibiotics**

- Look for a 'USDA Certified Organic' label—some companies are not certified but claim they offer conditions comparable to organic
- Many products display a 'USDA Process Verified' shield that they pay for—it is not the same thing as being 'USDA Certified Organic'

### **Perfluorooctanoic Acid (PFOA)**

- It has been estimated that 99% of Americans have PFOA accumulation in their bodies—and they are extremely hard to get rid of!
- PFOAs are commonly used to make non-stick pans—during cooking, some of these chemicals escape into food
- PFOAs disrupt hormone function and have been tied to infertility, ineffective sperm, heart disease, thyroid disease, high cholesterol, low birth-weight in babies, and obesity
- According to a 2017 report, some 16.5 MILLION Americans in 33 states may be drinking water containing unsafe levels of organic compounds known as PFOAs—which has also been linked to high cholesterol, obesity and cancer--As reported in TIME; 30 JAN 2017
- **Headliners: Researchers: Potentially dangerous chemicals found in fast-food wrappers; Source: Study results published in Environmental Science & Technology Letters; 1 FEB 2017; As reported by Michael Hawthorne; Chicago Tribune; results appearing in the Idaho Statesman; 2 FEB 2017**
- For over 30 years, fast-food companies have relied on the chemical industry to keep grease and oil from soaking through burger wrappers, French fry cartons, and pizza boxes
- It turned out that food wrappers were a MAJOR source of exposure to PFOAs—under oath, a former DuPont chemist described how customers ingested the chemicals every time they ate a French fry

#### **To avoid PFOAs**

- Avoid fast food (including pizza!)
- Do not use pots and pans that are coated with a nonstick material
- Purify tap water through distillation or reverse osmosis before drinking it will also minimize your exposure to this obesogen.

### **Millennial Tidbits: EDUCATION**

Millennials are much better educated than their grandparents—the share of young adults with a bachelor's degree or higher has steadily climbed since 1968--Source: Bialik K and Fry R: Millennial life: How young adulthood today compares with prior generations. Posted 14 FEB 2019; accessed 12 JUN 2019 at: <https://www.pewsocialtrends.org/essay/millennial-life-how-young-adulthood-today-compares-with-prior-generations/>

Among Millennials, ~40% of those aged 25 to 37 have a bachelor's degree or higher—compared with just 15% of the Silent Generation, roughly a quarter of Baby Boomers and about 30% of Gen Xers when they were the same age

Gains in educational attainment for young women are impressive:

- Among women of the Silent Generation, only 11% had obtained at least a bachelor's degree when they were young (ages 25 to 37 in 1968)—Millennial women are about four times (43%) as likely as their Silent predecessors to have completed as much education at the same age

Millennial men are also better educated than their predecessors—about one-third of Millennial men (36%) have at least a bachelor's degree which is nearly double the share of Silent Generation men (19%) when they were ages 25 to 37

While educational attainment has steadily increased for men and women over the past five decades, the share of Millennial women with a bachelor's degree is now higher than that of men—a reversal from the Silent Generation and Boomers

Gen X women were the first to outpace men in terms of education over Gen X men in 2001—before that, late Boomer men in 1989 led Boomer women in education

## HOUSING

Millennials—hit hard by the Great Recession—have been somewhat slower in forming their own households than previous generations

They are more likely to live in their parents' home and also more likely to be at home for longer stretches

In 2018, 15% of Millennials (ages 25 to 37) were living in their parents' home—nearly DOUBLE the share of early Boomers and Silents who did so when they were the same age

A recent survey conducted by Zillow found that some chose to stay with their parents for child care purposes since day care costs were high—the analysis stated the unemployment rate for those millennials living at home in 2017 was 10.3% which had decreased from 19.% in 2010

Besides rising housing costs, **Millennials are plagued with high student loan debt**

Every year in America, 20 million students walk through the doors of an institution of higher learning for the first time—it is a time filled with hope for their futures, the promise of a brighter tomorrow as they seek to better their minds and improve their futures for themselves, their families, and their communities

By the time that incoming class of 20 million reaches graduation, approximately 14 million students will make an investment in their futures with loans largely backed by the government to help finance their education—this investment, however, comes at a high price

Student debt is the second largest type of debt in the United States—behind only home ownership and ahead of both credit cards and auto loans

This debt falls heavily on the young, with 2 of every 5 adults under the age of 30 owing student debt and 1 of every 5 adults aged 30-44 owing student debt—without intervention, this trend will continue to grow, as tuition inflation sits around 7.5% (about twice the inflation of the Consumer Price Index)

- Average student loan debt per borrower: \$32,731
- Number of student loan borrowers: 44.7 million

Source: Average Student Loan Debt in America: 2019 Facts & Figures;

<https://www.valuepenguin.com/average-student-loan-debt>; accessed on 12 JUN 2019

The total amount of student loan debt is ~\$1.5 trillion as of the end of 2018—more than credit cards or auto loans

On average, the total student loan balance has increased by \$80 billion each year since 2004

'The number of seniors with student loan debt has exploded. We're not just talking about kids and millennials. It impacts a large swath of our population.'--Source: Persis Yu; attorney; National Consumer Law Center

While student loan debt is often thought of as a problem disproportionately affecting millennials, most student loan debt (57.8%) is held by borrowers 35 and older—borrowers 35 to 61 tend to have the highest loan balances

Adults 60 and older—who either struggled to pay off their own loans or took on debt for their children or grandchildren—are the fastest-growing age cohort among student loan borrowers

Borrowers 62 and older hold the smallest share of debt—but the 1.9 million people in this age group owe \$67.8 billion

**Headliners: How Student Loans Affect Your Health—and What You Can Do About It; Source: Kat Tretina; reporting for Student Loan Hero; posted 12 APR 2017; accessed 17 JUL 2019 at: <https://studentloanhero.com/featured/student-loan-debt-health/>**

The American Student Assistance organization (a non-profit focused on college affordability) released a study on the connection between student loans and health by investigating over 500 students and 450 human resources professionals—the results were pretty bleak

40% of respondents reported that worrying about student loans has impacted their health

When stressed, sleep, eating habits, and daily routines are generally impacted—being overwhelmed can lead to depression

In another investigation, more than 85% of study respondents said student loan debt was a major source of stress—one in three said such debt is the biggest stress in their lives--Source: Diana Hembree; 'New Report Finds Student Debt Burden Has Disastrous Domino Effect On Millions Of Americans'; posted 1 NOV 2018; accessed on 17 JUL 2019 at:

<https://www.forbes.com/sites/dianahembree/2018/11/01/new-report-finds-student-debt-burden-has-disastrous-domino-effect-on-millions-of-americans/#10a4452112d1>

**Headliners: The Dangerous Crisis of Mental Health and Student Loans; Source: Spencer Kelly; posted 10 OCT 2018; accessed 18 JUL 2019 at: <https://www.eic.co/news/the-dangerous-crisis-of-mental-health-and-student-loans>**

Researchers found that 35% of student debt holders responded that they physically lost sleep over their debt—while 50% reported developing anxiety or depression

62% became socially reclusive—skipping activities or trips with friends and family

When asked what they would do to have their student loans disappear, slightly more than the 19% who were willing to forego electricity for a year

20% were willing to cut off a finger or a toe—despite one in five student debt holders claiming they would self-mutilate to remove their debt, few of those affected seek help from mental health professionals

Only 15% of people with student debt reported talking with a mental health professional to deal with the stress of student debt—only 4% did so regularly

### **Clinical Application**

When concern exists about making ends meet, many people put off going to a healthcare provider—including preventive dental hygiene care

Many dental offices are offering their own insurance plans to patients who have no coverage through work or private policies

### **The BEST Clinical Application?**

Honoring who YOU are as a dental hygienist by honoring what you do and how you treat others regardless of age—we are all in this together!

# **THANK YOU!**