

# FROM THE HEART

Newsletter from  
 **Saint Luke's**  
 CARDIOVASCULAR CONSULTANTS

## Estrogen Matters: A Fresh Look at Pros and Cons of Postmenopausal Hormones

By James H. O'Keefe, M.D.

**R**ose is a 49-year-old woman who was in her usual excellent state of health when she began to experience episodes of heart skipping and racing. These palpitations, as we cardiologists call them, occurred randomly without warning and were distracting for Rose, and caused her to worry about her heart.

She saw her primary care physician who prescribed metoprolol, which improved her palpitations. Yet, this medication—a beta-blocker—left

her feeling depleted and depressed. When Rose saw me as a patient, upon questioning, she confided that in the past year her menstrual cycles had become quite irregular and she felt like she might be starting menopause. I stopped her metoprolol and suggested that she ask her gynecologist (GYN) physician to consider starting her on estrogen with progesterone. The GYN doctor started Rose on these hormones, and her palpitations vanished for good about two weeks later.

Supplemental estrogen + progesterone—known as hormone replacement therapy (HRT) or estrogen replacement therapy (ERT) was for years highly acclaimed as an effective therapy to help keep women youthful and healthy after menopause. Convincing scientific studies showed that without question HRT, when started around the time of menopause, could alleviate symptoms such as hot flashes, brain fog and palpitations. Moreover, among postmenopausal women, estrogen and progesterone were linked with reduced risks for developing heart disease, osteoporosis and colon cancer.

### Diffusing the WHI Bombshell

But then in 2002 the Women's Health Initiative (WHI), a study funded by the National Institutes of Health (NIH) to the tune of \$1 billion, announced results showing a possible uptick in the risk of breast cancer among women taking HRT. The academic winds shifted abruptly, and estrogen was officially deemed a carcinogen. Physicians across America took their female patients off HRT and have been reluctant to prescribe estrogen and progesterone for postmenopausal women ever since.

Now, 17 years after HRT was left for dead, Avrum Bluming, M.D., an oncologist, and Carol Tavis, Ph.D., reveal the questionable science behind the flawed conclusions of that WHI study and present a compelling case for HRT's resurrection in an important new book. They uncover the sweeping publicity campaign that a few of the WHI investigators waged, based on their own biased opinions, against postmenopausal estrogen.

Drs. Tavis and Bluming's book, *Estrogen Matters*, is a compelling ex-

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# Estrogen Matters: A Fresh Look at Pros and Cons of Postmenopausal Hormones

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posé that scrutinizes the vast body of evidence regarding HRT and presents a fuller picture of largely reassuring data which, in general, supports estrogen use for many postmenopausal women. This landmark book sets the record straight on the unique and important benefits of estrogen and progesterone. The purported increased risk of breast cancer with estrogen was never statistically significant in the WHI, and many of the frightening warnings turned out to be wrong. Estrogen Matters will likely be a long overdue turning point in the medical saga of HRT.

I was always skeptical of the WHI findings—they were so contradictory to a massive amount of data showing that estrogen was generally beneficial for post-menopausal women.

When a woman goes through menopause, the amount of estrogen and progesterone her ovaries are producing suddenly plummets from the normally high levels to virtually zero, often causing unpleasant symptoms. These can include hot flashes, palpitations, loss of sexual desire, urinary tract problems, insomnia, anxiety attacks, difficulty concentrating, depression, weight gain around the abdomen and fuzzy thinking. The usual medical response to these complaints is a menopausal cocktail of prescription antidepressants, anti-anxiety meds and sleeping pills.

Additionally, bone strength starts to erode promptly after the ovaries shut down hormone production. For example, my sister Maureen's bone density was normal before menopause, and

in just a few years she had developed osteopenia. By the way, this was not due to a disease—without estrogen a woman's bone strength will predictably weaken, even in an otherwise active and healthy female. Although there are numerous prescription drugs to treat osteoporosis and osteopenia, many of them have common and sometimes serious side effects. What's more, none of these prescription medicines for osteoporosis is as effective as HRT for strengthening bones and reducing fractures.

## Heart Disease: Public Enemy #1

Estrogen replacement not only relieves many of the menopausal symptoms such as hot flashes, palpitations and an expanding waistline, it also may reduce the long-term risk of heart disease, hip fracture and colon cancer. Each year, heart disease kills eight times more American women than does breast cancer. HRT is linked to a 40% reduction in risk of atherosclerotic cardiovascular (CV) disease when the hormones are started shortly after menopause. Most studies indicate that estrogen is safer and more protective when it is initiated within three years of the onset of menopause.

Women tend to fear breast cancer more than heart disease, in part because they think of CV disease as more of a concern for their mother or grandmother. Only 9% of women report that the disease they fear most is heart disease. Yet, in every decade of life starting at age 20, a woman's risk of dying of heart disease is much

higher than her risk of dying from breast cancer. Estrogen relaxes arteries by stimulating the vessels' production of nitric oxide—an important natural vasodilator. HRT improves cholesterol levels by increasing the protective HDL cholesterol, and reducing bad LDL cholesterol. Additionally, estrogen has potent anti-oxidant effects, which helps to keep a woman's blood vessels soft and supple.

The Framingham Study showed that HRT was also associated with a 50% lower risk of osteoporotic hip fractures in postmenopausal women. Multiple studies show HRT cuts the risk of dying from colon cancer in half. And in contrast to the WHI findings, most studies show that for women without a prior history of breast cancer, estrogen therapy does not increase the risk of being diagnosed with breast cancer, even among women who have been taking HRT for 10 or 15 years. Finally, women taking estrogen tend to live longer than women not taking HRT. A JAMA study estimated that HRT may increase overall life expectancy by about three to four years.

## The Last Half of Life As a Second Prime

Dr. Bernadine Healy, a cardiologist, and the first and only female director of the NIH, the same organization that sponsored the WHI, wrote that hormone replacement therapy helps women stay healthier longer. She said, "The benefits of HRT are compelling. The total health of a woman as she gets older is largely what determines her quality of life; what allows her to



view the last half of her life as a blessing and second prime.”

Women during their childbearing years are protected from many diseases, and that protection largely disappears after menopause. However, when the WHI investigators claimed the HRT was paradoxically dangerous, and that it could increase the risks of breast cancer, heart disease, stroke and dementia, and shorten life expectancy, millions of women soon stopped taking their hormone therapy.

Even today, most doctors and medical centers advise women not to take estrogen after menopause, or if they do start estrogen or HRT, they should be on it for the shortest period of time. Again, this is based on unproven biases against HRT, with no real evidence to support this recommendation. What we do know is that women who stop their estrogen tend to lose the brain and bone benefits that were being conferred by HRT.

If you want to know how I personally feel about this crucially important topic, my wife, Joan, is on HRT, as are my mother, Leatrice, and sister, Maureen. Now to be clear, I don't prescribe estrogen for them or



*My mother, Leatrice, and sister, Maureen.*

for any of my patients. But I did advise my female family members, as I do for many of my postmenopausal patients, to ask their primary care physician or GYN doctor if they could be started on HRT. It is essential that postmenopausal women on estrogen therapy are followed appropriately with mammograms, GYN exams, etc.

### **Risks of Estrogen and Progesterone**

There is a widespread assumption based on inconclusive data that estrogen causes breast cancer. Decades of contradictory evidence indicate HRT is not only safe for most women—it's beneficial in many respects. However, estrogen when prescribed as the lone female hormone in a postmenopausal woman who still has her uterus can increase the risk of uterine cancer. Fortunately, adding progesterone to the estrogen, which is referred to as HRT—the standard hormone therapy for a postmenopausal woman who still has her uterus, will completely eliminate the increased risk of uterine cancer posed by estrogen monotherapy.

Estrogen and progesterone carry other risks as well. When taken orally, estrogen increases risk for gallstones, and blood clots—such as deep venous thrombosis (clots in the leg veins) and pulmonary emboli (clots in the lungs). These risks are magnified in women taking higher dose estrogen, in smokers, and those with obesity.

On the other hand, these risks of gallstones and blood clots are minimized when estrogen is supplied via

a skin patch or a vaginal cream. Also, older women with existing atherosclerotic plaque can be at increased risk of complications like heart attack and stroke if they start estrogen 10 years or more after going through menopause. Progesterone can trigger resumption of menstrual periods in postmenopausal women, and also can cause headaches and fatigue. Progesterone may marginally increase risks of ovarian cancer and breast cancer as well.

### **Still Dancing ...**

Some women feel that taking estrogen after menopause is not natural. But it is also not natural to live to age 90 or 100. Our ancient ancestors often perished from starvation, infections, trauma, exposure or even while giving birth, and thus died decades before succumbing to heart disease, osteoporosis or Alzheimer's disease. A woman may not have serious problems with hormone deficiency for a decade or two without estrogen, but many women today live almost as long after menopause as they did while their ovaries were still producing hormones. HRT can help to maintain bone strength, skin elasticity, heart health, and mood as the decades go by.

Marie Griffin, M.D., is a smart endocrinologist who I've always turned to for advice on the issues related to hormone therapy for women. Dr. Griffin said after the WHI study publicized its scary conclusions about estrogen, many of her patients who had been on HRT stopped their hormones.

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Subsequently, when those women came in for their annual visits, Dr. Griffin noted that the aging process had seemed to accelerate for many of them. One 74-year-old lady told Dr. Griffin that she quit dancing because she felt weaker and less steady on her feet, and just wasn't in the mood to dance anymore. Those kinds of interactions prompted Dr. Griffin to think, "I want to still be dancing when I am 90, so I'm staying on my HRT."

Joan is also big believer in the benefits of HRT based on her own experience. She says, "How can a hormone that was flowing through my body for the first 50 years of my life turn suddenly dangerous if I continue to use it after my ovaries stop making it?" For women like Joan, Marie, Leatrice and Maureen, the benefits of HRT outweigh the risks of these hormones.

Importantly, each woman should talk her specifics over with her physicians and decide if HRT is right for her. Many women, including Carol Tavis, stay healthy and happy after menopause without the need for HRT. The decision about whether HRT should be started is a complex one that should be made only after thoroughly discussing the risks and benefits for each individual woman.

One-size-fits-all recommendations cannot be made, but women and their doctors do have a great deal of information to bear on the topic. This new book by Drs. Bluming and Tavis is a real treasure for any woman who wants state-of-the-art information to help her make decisions that are right for her regarding HRT.

## Best Forms of Estrogen and Progesterone for Postmenopausal Women

**1** Estradiol is the dominant form of estrogen that human ovaries make, so this is probably the ideal one to use for HRT and ERT. It's best to use the lowest dose of estrogen that effectively bestows its benefits; this will vary from one woman to the next.

### *Estrogen Matters*

*Why Taking Hormones in Menopause Can Improve Women's Well-Being and Lengthen Their Lives – Without Raising the Risk of Breast Cancer*

**Avrum Bluming, MD  
Carol Tavis, PhD**

**2** Delivering the estrogen via skin patch or cream appears to be safer than pill form. This simulates the natural route of estrogen from the ovaries, whereby it is released directly into the blood circulation. When estrogen is swallowed, it goes through the liver after being absorbed, and this changes the estrogen into a less natural form. A skin patch and/or vaginal cream have been proven to be safer options than oral estrogen with respect to risks of blood clots and gallbladder disease.

**3** If a woman has her uterus, she needs to be on progesterone (also called progestin) in addition to estrogen for HRT. The safest oral form of this is micronized progesterone, which is best taken at bedtime. Also, progesterone as an IUD is another safe option.

**4** Raloxifene is a Selective Estrogen Receptor Modulator that reduces fractures by stimulating estrogen receptors in bones; but it blocks estrogen receptors in the breast, and thus significantly reduces risk for breast cancer. This can be a good option for postmenopausal women who want to protect their bones while at the same time reducing their risk of developing breast cancer.

**5** It is essential to have regular follow-up visits with your GYN doctor or primary care physician when you are on HRT or ERT. Also, do not start or stop HRT or ERT without a thorough and nuanced discussion of risks and benefits with a physician who is knowledgeable about these issues, and willing to follow you closely if you do start estrogen and/or progesterone.

# The Country is Going to Pot

By John C. Hagan III, M.D., FACS, FAAO

In spite of the unanimous opposition of all Missouri's major medical organizations, and many law enforcement organizations, Show-Me state voters in November 2018 overwhelmingly passed medical marijuana (pot, weed) into law.

Every state that has enacted medical marijuana has seen their emergency rooms filled with overdoses and other marijuana-related problems such as uncontrolled vomiting (Cannabis hyper-emesis syndrome), serious and even fatal overdoses. Colorado was once the healthiest state in the nation. Since passing medical marijuana, and later recreational marijuana, their public health parameters are in freefall.

Some of these problems include an increase of automobile accidents under the influence of marijuana, educational problems include selling and using at school, and increased suspensions and expulsions. In Colorado, students are now exposed to marijuana at the 3rd and 4th grade levels, while in non-medical marijuana states it's typically 7th or 8th grade. Moreover, declaring marijuana a medicine makes it seem less toxic and more enticing to not only young students, but the general population.

Marijuana has two main ingredients: CBD (cannabidiol), which has legitimate medical uses and is being studied in a controlled fashion consistent with FDA guidelines; and THC (tetrahydrocannabinol), which is the high or euphoria-inducing chemical that often leads to habituation and addiction. It was not publicized in the Missouri election that the FDA has approved pure CBD drugs that doctors

may write prescriptions for: Epidolex which is approved for childhood seizures; Marinol that helps nausea and vomiting associated with chemotherapy; and Cesamet, which is an appetite stimulant for wasting diseases. All the major physician groups supported the FDA making rules and regulations easier for researchers to do legitimate study of pure CBD for other diseases.

It is really the THC, which is the high-inducing chemical that is concerning. In the 1960s, marijuana cigarettes were about 2-3% THC. In 2019 marijuana sold on the street is about 17-29% THC; growers and chemists are pushing this to 40%. In states with recreational marijuana and in all of Canada, mainstream "adult" beverage companies are infusing their drinks with 95% THC, which produces a high comparable to narcotics.

Marijuana is not a medicine. The exact amount and content are not known and vary from product to product. Over 400 bio-active chemicals are often present, many of which have been found to be toxic. There is no disease that has been shown to be helped, much less cured, by marijuana and high-THC products.

I'm an ophthalmologist and one of the so-called benefits of marijuana is said to be the treatment for glaucoma. Controlled studies have shown that marijuana does not lower the pressure in the eye for any meaningful period of time. Population studies done in the District of Columbia show glaucoma treatment worsens after passing medical marijuana

laws because people, often with the most severe glaucoma, stop taking their eye drops, stop seeing their ophthalmologist and the disease progresses.

Recent 2019 medical reports have found that CBD raises pressure in the eye and also is contraindicated in glaucoma. Chronic marijuana use kills the ganglion cells in the retina, which is the same thing glaucoma does.

I'm also editor of the medical journal Missouri Medicine, which has recently published articles on marijuana use causing cardiovascular disease, including sudden death, in both new and chronic users.

Other physicians have reported that marijuana is less effective for pain relief than other non-opioid medications and non-medical therapy such as yoga, mindfulness and physical therapy. Psychiatrists have reported in chronic users an increased rate of suicide, and a worsening of psychiatric disease, such as anxiety, depression and psychosis.

I advise my patients that there is no condition for which I, and most reputable physicians, would recommend marijuana. To the contrary, marijuana use will cause or worsen many medical conditions.



# Changing the Annual Cardiologist Visit

By David G. Skolnick, M.D., and Michael Main, M.D.

Many events in our lives follow the cadence of an annual cycle: birthdays, holidays, a visit to the primary care physician and an appointment with your cardiologist. We would like to suggest that a growing number of our patients are healthy enough that they do not need an annual visit with a cardiologist. In the absence of new symptoms, many of our patients can be safely managed without seeing their cardiologist every year. We believe that we can still maintain excellent patient care with fewer trips to our offices. Let us explain.

The opening paragraph of a recent article in the *New England Journal of Medicine* commented about the tremendous improvement in cardiovascular care over the past two decades. For example, the risk of dying after experiencing a heart attack continues to fall and rests in the single-digit range. The combination of new coronary stents and potent generic statins has profoundly reduced the risk of restenosis (i.e., of a blockage developing again within the coronary artery).

When we joined this practice in the 1998, restenosis was a common and vexing problem. Patients would frequently undergo screening stress tests and repeat invasive procedures due to symptoms and concerns about new blockages. Fortunately, that era is well behind us. In fact, the American



Dr. Main

College of Cardiology (ACC) states that the earliest interval for a symptom-free patient with prior stents to undergo a stress test is two years. For those who underwent coronary artery bypass surgery that interval stretches to five years.

In reality, many of our colleagues are very comfortable delaying a repeat stress test for several more years. Why? Because appropriate and aggressive medical therapy to control risk factors, like high blood pressure, high cholesterol, inactivity and smoking, have substantially altered the natural history of this chronic disease.

We are also acutely aware of the ever-rising cost of health care and that our diagnostic studies are expensive. More importantly, ongoing research suggests that the practice of routine screening for progressive coronary artery disease in patients with established disease may not alter patient outcomes.

Addressing high cholesterol, the cornerstone treatment for vascular disease, represents another easy example of how dramatically the management of a common problem has changed over the years. It is now cheaper, easier and more effective to lower bad cholesterol.

Years ago, statin titration was a slow and gradual process. The Food and Drug Administration (FDA) required



Dr. Skolnick

careful monitoring of liver function testing (i.e., blood test). Rarely, if ever, did we find a concerning change in liver enzymes. Based on large clinical trials and new recommendations from both the ACC and the FDA, the management of high cholesterol for many patients with coronary artery disease has become relatively simple.

In essence, the ACC states that we should give patients a moderate or high-dose potent statin. That's it. In the absence of symptoms, the FDA no longer requires routine surveillance of liver enzymes. Once a stable dose of medication is established, a yearly assessment of the lipid profile is sufficient. This example illustrates how the value proposition of patient care has improved: clinical outcomes are better with less expense and less inconvenience.

Effective use of new technology also illustrates how patient care can improve. For those with an implantable pacemaker or defibrillator, wireless and cellular-based features have simplified the surveillance of these life-saving devices for both the patient and our office staff. Several times a year we track a myriad of parameters and ensure the ongoing safety of these devices without the patient leaving their home.

In the last few years, Saint Luke's Health System (SLHS) invested in a new electronic health record to help facilitate the coordination of patient care. In the outpatient clinic, it is a seamless process to obtain information from either an inpatient evaluation or a recent visit to another Saint Luke's employed physician.

Just as we have all witnessed the convenience of texting our friends and family for a quick update or question, our new medical record system has greatly enhanced the ability of physicians and nurses to exchange information. From behind the scenes, we can follow and help maintain your heart care. Many of you are also taking advantage of the patient portal option. You can ask questions and receive timely answers online without making an appointment and coming to our offices.

Just as we have witnessed impressive change in medical care, our out-patient clinic needs to evolve likewise. It cannot remain static if we still want to champion great medicine and cost-effective care. Despite an ever-growing number of cardiologists in our group, there are still more patients who seek heart care at Saint Luke's.

An annual visit for every patient, a one-size-fits-all approach, no longer seems appropriate. For those who are stable and doing well, we should acknowledge and celebrate that success. Those patients need less intensive monitoring and may "graduate" to follow-up visits every few years.

Some patients might prefer a one-year follow-up visit with one of our highly trained and subspecialized advanced practice providers (APPs). Each cardiologist is closely aligned with one of our APPs to ensure continuity of care for our patients. Our APPs have completed extensive cardiac training with us and we are happy to offer patients an appointment with their cardiologist's aligned APP.

At the same time, we are aware that some cardiac conditions can be unpredictable. When and if new symptoms arise, we will be available to see you without delay. Please know that we have your best interests at heart.

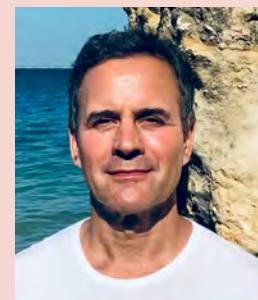
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**James H. O'Keefe, M.D. ,**  
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Photo by Perry Ralph

## The Journey is the Destination

“Smooth seas do not make skillful sailors.”

“The world is full of magic things, patiently waiting for our senses to grow sharper.” **W.B. Yeats**

“Difficult roads often lead to beautiful destinations.”

“Breathe. It’s just a bad day, not a bad life.”

“If you are depressed, you are living in the past. If you are anxious, you are living in the future. If you are at peace, you are living in the present.” **Lao Tzu**

“Far and away, the best prize that life has to offer is the chance to work hard at work worth doing.” **Theodore Roosevelt**

“Adversity reveals genius, prosperity conceals it.” **Horace**

“The answer is not in the fridge.”

“Be yourself—everybody else is already taken.”

**From Arthur Shoepenhaur:**

“One can choose what to do, but not what to want.”

“I’ve never known any trouble that an hour’s reading didn’t assuage.”

“Talent hits a target no one else can hit. Genius hits a target no one else can see.”

“Each day is a little life; every waking and rising a little birth; every fresh morning a little youth; every going to rest and sleep a little death.”

“Every man takes the limits of his own field of vision for the limits of the world.”

“Compassion is the basis of morality.”

“The most dangerous distractions are the ones you love, but that don’t love you back.” **James Clear**

“Coincidence is God’s way of remaining anonymous.”

“Boys, you might be poor, your shoes might be broken, but your mind is a palace. Stock your mind, stock your mind. It is your house of treasure and no one in the world can interfere with it. If you won the Irish Sweepstakes and bought a house that needed furniture, would you fill it with bits and pieces of rubbish? Your mind is your house and if you fill it with rubbish from the cinemas, it will rot in your head. You have to study and learn so that you can make up your own mind.”

**Frank McCourt**

“Today is only one of many days to come, but everything that will come on all the other days will depend on what happens today.”

**Ernest Hemmingway**

“It’s not what we don’t know that gets us in trouble. It’s what we know for sure that just ain’t so.”

**Mark Twain**



# Do I Still Need to Take My Low-Dose Aspirin?

By James H. O’Keefe, M.D.

**T**he short answer is, “Probably yes. But it depends upon your specific circumstances. Let’s talk.”

Daily low-dose aspirin to prevent heart attack and stroke is no longer recommended for healthy adults over age 70, according to new guidelines jointly released by the American Heart Association and the American College of Cardiology. This statement is a reversal of prior guidelines that suggested adults age 50 or older should consider taking low-dose (81 mg/day) aspirin to reduce the risk of cardiovascular problems. The report cited that for older adults without cardiovascular disease, aspirin’s risk of gastrointestinal bleeding outweighs its cardiovascular benefits.

Keep in mind that the AHA also released another report indicating that about half of adults in the U.S. have some form of cardiovascular disease. For many individuals, their form of cardiovascular disease is simply high blood pressure, which is now defined as a blood pressure of 130/80 or higher.

By following our suggestions about diet, sleep, exercise, stress and other lifestyle issues, about 80 percent of all cardiovascular disease can be prevented, including heart attack, stroke, sudden cardiac arrest, atrial fibrillation (AFIB) and heart failure.

Recently, many of my patients with prior stents, or bypass surgery, or heart attack have stopped their aspirin because they heard the latest guidelines said it is unnecessary. This is an extremely dangerous omission; aspirin for people with existing atherosclerotic

cardiovascular disease reduces risk of heart attack and stroke by about 25%. And because the full benefits are conferred with just a “baby aspirin” (81 mg), the risk of serious bleeding is very low with this therapy.

You should consult your primary care physician or your cardiologist before starting or stopping daily low-dose aspirin. When people ask me if they should take aspirin, I tell those who don’t have cardiovascular disease to get a Cardioscan to see if they have any calcified plaque in their coronary arteries.

This simple, safe, quick and painless noninvasive test is very accurate and costs only \$50 at Saint Luke’s Hospital of Kansas City. Your score should be 0, meaning your coronaries are clean, soft and supple and you almost certainly don’t need aspirin. On the other hand, the higher your calcium score, the higher the risk of heart attack and cardiovascular death in the future.

We need to know if you have plaque growing in the arteries that supply the muscle of the heart, because this is a largely silent killer, and often your first warning can be sudden death or a heart attack. If we find substantial plaque in your coronary arteries on the Cardioscan, part of the protection against a heart attack is to have you take a daily aspirin.

So, I generally recommend a daily low-dose aspirin for most people who have a calcium score above 0, unless they are at increased risk of bleeding due to conditions such as history of gastrointestinal hemorrhage, or if they take oral anticoagulants like warfarin, Xarelto or Eliquis.



If you were a car, your heart would be your engine and your coronary arteries would be your fuel lines. You need these to be running clear, or the engine could sputter and stop. One simple part of the treatment of coronary disease is to take a baby aspirin daily to prevent clots from forming over the plaque, and shutting down flow through the vessel—thereby causing a heart attack or even sudden death.

What you don’t know can hurt you—even kill you. Find out if you have plaque growing in your coronary arteries and we will help make sure you stay safe and healthy for decades to come.

# Sleep's Unrivaled Therapeutic Powers: Why Wakefulness is Over-rated

By James H. O'Keefe, M.D.

**T**he world's record for the longest time a human has gone without sleep was set in 1964 by Randy Gardner, who as a California high school student went without sleep for 264 hours—about 11 days.

In recent years, Guinness World Records has stopped listing records for continuous sleeplessness because it was deemed too hazardous. And for good reason—alarming scientific data has emerged about the acute dangers of inadequate sleep—including hallucinations, schizophrenia, high blood pressure, stroke and heart attack.

But it was the irrefutable evidence for increased risk of suicide among sleep-deprived people that convinced the scientific advisors at Guinness World Records to officially outlaw future attempts at extreme sleep deprivation.

To put that in context, Guinness gave the thumbs up to “Fearless” Felix Baumgartner’s proposal to attempt to set the world record for a vertical freefall distance as a skydiver. Under sponsorship from Red Bull, he jumped out of a capsule that was orbiting the

Earth on the edge of space. Baumgartner, wearing a pressurized spacesuit plummeted headfirst straight down covering 24 vertical miles in 4.5 minutes before deploying his parachute.

Freefalling using nothing but his body and gravity, Felix became the first human to break the sound barrier without a vehicle, attaining a top speed of 834 miles per hour. That the experts at Guinness World Records felt okay about sanctioning this potentially lethal stunt, but decided that sleep deprivation was too unsafe, should make you think twice about giving your sleep the short shrift. Appallingly, sleep deprivation has also been used for millennia as a cruel form of torture.

## Shorter Sleep = Shorter Life

“I’ll sleep when I’m dead,” is a motto made famous by singer/songwriter Warren Zevon. Billionaires Elon Musk and Steve Jobs have also flaunted a sleep machismo, implying that time is money, whereas sleep is a worthless waste of precious hours. World leaders Margaret Thatcher and Ronald Reagan both boasted about the uselessness of sleep and how they got by on only

four or five hours nightly. Were these celebrities somehow immune to the effects of insufficient sleep? Is making a habit of getting lots of luxurious sleep each night just for the weak and lazy?



*Matt Walker, author of Why We Sleep.*

To the contrary, renowned sleep scientist Matthew Walker, Ph.D., author of *Why We Sleep*, says the “sleep-when-I’m-dead” strategy is mortally unwise advice. The shorter your sleep—the shorter your life. I don’t think it’s coincidental that both Reagan and Thatcher went on to develop Alzheimer’s disease.

If only, when Margaret Thatcher had that bravado about sleep when she was in her 50s, she could have seen herself in later life enfeebled by dementia. I would hope she wouldn’t have been so brave about skimping on sleep.” And it didn’t end well for Steve Jobs and Warren Zevon either, both of whom succumbed to cancer in their 50s.

As Professor Walker states, “There is no biological function in the body or mental process in the brain that is



not wonderfully enhanced when you get optimal sleep or demonstrably impaired when you don't get enough sleep."

In years past, medical residents were often in the hospital caring for patients up to 16 hours per day. In fact, that's why new doctors were called residents—traditionally they resided in a teaching hospital during their postgraduate training years. Today, medical education authorities have mandated that training doctors can't be made to work more than 80 hours per week.

I feel fortunate because I did both my residency and fellowship at the Mayo Clinic, where they have always treated physicians-in-training humanely and have given them a reasonable amount of time off. On the other hand, my friend Peter Attia, M.D., endured a surgical residency where he typically worked 112 hours a week. Peter calculated that during those five years he averaged about four hours of sleep per night. Incidentally, Peter Attia's *The Drive* is a phenomenally great podcast about longevity and fitness.

## Why We Sleep

It took Mother Nature 3.6 million years to refine this central feature of our existence that occupies one-third of our lives, and which we refer to as a good night's sleep. Yet, people today are sleeping fewer hours than ever before in the history of Homo sapiens.

In 1942, a study found that the average American adult was sleeping eight hours per night. Now this is down to six hours 30 minutes, while we burn the midnight oil staring at digital screens. On a related note, we burn fewer calories per hour watching a screen than we do while asleep—just one of many reasons sleep deprivation predisposes to obesity. Within the timespan of only 70 years, we have lopped off 20% of our sleep time. Imagine the dire consequences of reducing by 20% some other essential requirement for human life, such as the amount of oxygen in our bloodstream.

Why do we spend so much time sleeping? It must be doing something besides just curing sleepiness. While asleep, we are not hunting or foraging for food, not eating, not finding a

mate, not reproducing, not protecting our offspring, nor building shelter. And worse yet, during sleep, we are unconscious and largely defenseless against wild animals and enemies. So, if sleep doesn't serve an absolutely vital set of functions for our health and survival, it's the dumbest thing Mother Nature ever came up with.

Unsurprisingly, a constellation of evidence now makes it abundantly clear that evolution didn't make a spectacular blunder in putting in place this need for an eight-hour night's slumber. Sleep is our greatest life support system, a remarkable health insurance policy that's free and pleasurable. And compared to a doctor's prescription, this therapy is painless, free of side effects and generally effective for improving all manner of ailments.

## The Glymphatic System Power Washes the Brain During Sleep

The brain is your most active organ: though it accounts for just 2% of your body weight, it burns about 25% of your total calories. Just like a roaring

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# Sleep's Unrivaled Therapeutic Powers

*continued from page 11*

fire throws off a lot of smoke and ash, your busy and powerful brain generates substantial amounts of waste while it's awake. As in a bustling city, the garbage accumulates during the day, and only at night when the city sleeps does the refuse get hauled away, the debris in the empty streets flushed down the sewers.

In a very similar fashion, while we sleep our brain goes quiet and the glial (glue) cells that surround the neurons shrink down to one-third their normal size, making room for the cerebrospinal fluid to wash throughout the brain and flush out the waste and detritus that accumulated while we were awake. This is the glymphatic system—our brain's self-cleaning and sewage disposal system, and it's critically important for keeping our brain healthy, our mind sharp and our mood bright.

Wakefulness clutters the brain with trash, and sleep is the clean and repair mechanism. In other words, sleep is the price we pay for wakefulness. This power-washing of the brain only happens during deep sleep, so when we

short-change our sleep time, we are disrespecting our brain.

## Deep Sleep Prevents Alzheimer's

Personally, the disease I fear most is Alzheimer's, in part because I have one copy of a nasty gene called ApoE4. This is not uncommon, about one in four people is born with a single copy of the ApoE4 gene, which doubles the affected person's risk of eventually developing Alzheimer's dementia. But it could be worse, about one in 30 people has two copies of the ApoE4 gene, which increases the risk of Alzheimer's by 10-fold.

Regardless, preserving cognition—sharp thinking—is my single highest health priority in life. Accordingly, I make it a habit to get plenty of revitalizing sleep each night. I'm reassured by visualizing the glymphatic system keeping my brain clean and healthy. As a physician who sees the epidemic of Alzheimer's that is gathering momentum and sweeping across our culture, the thought of chronic sleep

deprivation frightens the daylight out of me. It gives me humility to realize without adequate sleep, we are all vulnerable to terrifying fates like dementia and cancer.

One fascinating study used PET nuclear imaging in people over age 70 to assess how much toxic gunk (scientifically referred to as beta amyloid protein and tau tangles) had built up in their brains. The people who on average slept less than seven hours per night had strikingly higher amounts of amyloid protein and tau tangles in their brains compared to similar individuals who habitually slept more than seven hours per night.

Shocking studies show that if you are deprived of adequate deep sleep for even one night, you can start to see an accumulation of amyloid in the brain. Thankfully, a great night's sleep washes away the sludge that had begun to gum up your brain, making it more receptive and capable by morning. To summarize, new studies clearly show that an insufficient amount of high-quality sleep is one of the principle lifestyle factors causing Alzheimer's disease. The fact that all therapies for treating Alzheimer's thus far have failed miserably, makes preventing this scourge vitally important.



## Emotional First Aid

Sleep is also essential for psychological well-being. After about 16 hours of continuous wakefulness, most people start to note anxiety. Even a few days of inadequate sleep strongly predisposes to depression. Ominously, studies show that chronic insufficient sleep is one of the strongest predictors of suicide, especially

among teens. Rapid eye movement (REM) sleep is the scientific term for dream sleep. REM sleep dominates the second half of your night's sleep and it is like overnight psychotherapy, boosting your mood and relieving your anxieties. Professor Walker calls it "emotional first aid."

Anyone who has raised a child comes to instinctively understand how fundamentally important sleep is for their kid's emotional well-being. Try to skip the afternoon nap and a normally mild-mannered and content infant launches into non-stop fussing and crying, and is inconsolable for the rest of the day. Disturb one night's sleep, and a happy well-behaved 4-year-old suddenly morphs into an uncontrollable brat, throwing a temper tantrum on the airplane. When our four kids were growing up, Joan made sure that bedtime was kept sacrosanct; and that the nap took precedence over any other afternoon activities. In young children, it is blatantly obvious how inadequate sleep leads to emotional outbursts and grouchy moods.

Somewhere between toddlerhood and the teen years, we abandon the notion that sleep is absolutely essential and non-negotiable for a cheerful attitude and well-adjusted behavior. Worse yet, among some circles of college students and adult overachievers, getting generous amounts of sleep and taking the occasional nap are stigmatized as indolent and slothful behaviors.

### Take-Home Message

Sleep is the foundation of good health—it's even more important than diet or exercise. Sleep de-risks nearly every disease that is killing us in the developed world. Deprive yourself of food, you can survive a month or longer; but go without sleep—you'll be dead in 12 days, and psychotic in



## The Four Pillars of Sleep

- 1** Regularity—how consistent is your sleep schedule? You need to try to get to bed and wake up about the same time every day—during the week and on the weekends too.
- 2** Continuity—are you awakening often during the night? A sleep that is fragmented by frequent awakenings is much less rejuvenating than continuous, uninterrupted sleep.
- 3** Quantity—this is simple—you need to absolutely prioritize getting seven to nine hours of sleep each night.
- 4** Quality of sleep—how deep and restorative is your sleep? Drinking caffeinated coffee within 10 hours of bedtime, or consuming alcohol within four hours of bedtime will predictably lessen the quality of your sleep. Prescription sleeping pills, like Ambien, also will reduce the quality of sleep. Keeping your bedroom very dark, quiet and cool tends to improve sleep quality.

less than half that time.

An explosion of sleep science makes it clear that sleep is not just for curing sleepiness—it's uniquely effective for preventing and treating many illnesses—mental and physical. For example, getting adequate, high-quality sleep is one of the best and most reliable ways to lower blood pressure. And as discussed, if you are serious about avoiding Alzheimer's, sleep is one of your surest weapons against it.

Good sleep was designed by Mother Nature to be the keystone of robust health. Get to bed by 10 p.m., that's when your brain is hungry for deep-cleansing, slow-wave sleep. Then sleep for eight hours—the second half of your night is for REM sleep so that you awaken cheerful, refreshed and ready to absorb new information. When you follow this routine, you should be able to wake naturally without an alarm clock.



# Superpowered by Ketones

By James H. O’Keefe, M.D., with Joan O’Keefe, R.D.

I had the opportunity to speak on nutrition at our annual meeting of the American College of Cardiology, which was recently held in New Orleans. I was curious to know what this large group of cardiologists considered to be the ideal diet. So I polled the audience asking: What diet is most heart-healthy?

1. Vegan diet
2. Paleo diet
3. Mediterranean diet or
4. Ketogenic diet

The clear winner among this group of cardiologists was the Mediterranean diet. Now keep in mind that when most Americans hear “the Mediterranean diet,” they think—pasta, pizza and bread.

But this was a group of cardiologists, so they were surely much more knowledgeable about nutrition, right? Well, not necessarily.

As Elizabeth Klodas, M.D., a cardiologist friend wrote, “It took more than 80,000 hours of training for me to become a cardiologist. How much of that time was spent on nutrition? Zero.”

## Paying Lip Service to Nutrition

Dr. Klodas trained at some of the top medical institutions in the world, including Mayo Clinic and Johns Hopkins, and now practices in Minneapolis, Minn. She wrote, “My waiting room was full of patients whose numbers I had made perfect, but who still looked sick and felt terrible.

Some even felt worse with all the drugs I had put them on. No cures, just a never-ending revolving door of follow-up visits. High cholesterol? Here’s a pill. High blood pressure? Here’s two pills. High blood sugar? Here’s two pills and an injection.”

This is what many doctors in America routinely do without ever addressing why the cholesterol, blood pressure and blood sugar are abnormal in the first place.

Dr. Klodas said she used to practice this way, until she realized that she was

just was covering up the downstream effects of poor diet with a bunch of drugs, instead of having her patients change their eating habits.

Twenty years ago the National Institutes of Health deemed that changing diet should be tried for three months as the first step in treating high cholesterol, before putting anyone on drugs. But today, many physicians are skeptical that any food-based solution provides significant benefits for treating common health conditions.

To make matters worse, treatment guidelines from national health organizations only pay lip service to nutrition. For instance, the 2018 cholesterol management guideline is a comprehensive document that was a collaborative effort from the American Heart Association, the American College of Cardiology, the American Diabetes Association, the National Lipid Association, as well as several other organizations. How much of this 120-page authoritative report is devoted to diet? A single paragraph!

Instead, this widely followed guideline exhaustively instructs doctors about which drugs to use, at what doses, and for which patients. Accord-



Dr. Klodas, founder Step One Foods

ing to this new cholesterol guideline, 10-year-old kids are candidates to be started on the most potent statin medications, including atorvastatin and rosuvastatin.

Dr. Klodas goes on to say, “Did you know that doctors are monitored according to whether they prescribe medications? If I don’t follow the cholesterol guidelines by prescribing statins, insurers will send letters scolding me. If I don’t talk to you about the cholesterol-lowering effects of walnuts and oat bran, nobody cares.

... If a physician uses some of the very limited time with patients to talk about antioxidants and omega-3 fatty acids, they get nothing more.”

Listen closely—I’m going to let you in on a secret—diet is an extraordinarily effective weapon against premature aging and disease, but it has to be the right diet. So let’s get back to discussing the best diet to follow if you are interested in taking charge of your own destiny by eating the foods and drinking the beverages to keep you youthful, bright and energetic.

## Original Ketogenic Diet

Dr. Russell Wilder at Mayo Clinic in 1923 designed a very high-fat diet to help prevent seizures. He called it “the Ketogenic Diet” because when followed, it increased ketones in the bloodstream. His version of the keto diet, called for 90% of calories from fat, and it reduced seizures by about 50%.

About 37 years ago I met my wife, Joan, when we were both interns at the Mayo Clinic. She was a dietetic intern and I was fresh out of medical school. For the next six years while I was training in cardiology at Mayo, Joan worked as a dietitian there. During this time, she was occasionally asked to start this ketogenic diet in a child with seizures that couldn’t be

controlled with medications. This involved drinking a lot of heavy cream, and MCT oil. She recalls that it was an exceedingly difficult diet for the kids to stick with. One side effect is what one keto diet guru calls “disaster pants.”

A century later, Dr. Wilder’s ketogenic diet is now succeeding beyond his wildest dreams. The keto diet is the most searched-for diet on Google, far surpassing the vegan diet. We have four kids who are Millennials—and they tell me this diet is all the rage with their contemporaries.

The keto diet today generally recommends getting at least 70% of calories from fat, 5 to 10% from carbs and about 15 to 20% from protein. Unlike the Paleo diet, you do need to be mindful about not overeating protein, otherwise you stimulate gluconeogenesis (the manufacturing of sugar) in the liver, and that prevents ketosis.

To get into ketosis, most people will need to limit their carb intake somewhere between 20 to 50 grams per day. Most keto devotees do this by consuming a lot of cheese, real butter, cream and coconut butter, olive oil, nuts, avocados and eggs.

Ideally, you need to be eating large quantities of non-starchy vegetables like leafy greens, cruciferous vegetables, onions and garlic. But as Joan says, most Americans don’t really like vegetables. Consequently, people who are following the keto diet, eat lots of cheese, cream, butter and meat, and shun the most healthful component—vegetables ... and that is a big problem.

## Carbies Don’t Make Barbies

“Carbage” like cookies, cake, bread, beer, candy, crackers, pie, doughnuts, rice, bagels, chips, tortillas, potatoes, pasta and sweetened beverages are strictly verboten on the keto diet. This kind of food is not only addictive, it also triggers insulin spikes that deposit those calories in and around the abdomen. Sherief is a dear family friend who’s a 31-year-old hipster radiology resident and likes to remind my daughters, “Carbies don’t make Barbies.”

Water is a crucial element of a keto diet. Thankfully, coffee and tea, both unsweetened of course, are also beverages of choice. Dry wine or distilled spirits are



metabolized as fats, and are okay in moderation. Some cynical health care insiders joke that a moderate drinker is someone who’s consuming less alcohol than their doctor.

High insulin levels cause obesity, whether that insulin is being secreted from your pancreas or you are injecting it with a needle. Insulin ushers glucose into fat cells, especially inside the abdomen, and insulin also makes you crave carbs.

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# Superpowered by Ketones

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High insulin also causes fluid retention. Thus, if you are doing the keto diet correctly, you'll reduce your daily carb intake from the typical U.S. adult level of 300 grams to one-tenth of this. Your insulin levels will plunge, and, to be blunt, you will pee like crazy in the first week or two as you get rid of excess retained fluid.

A very low-carb diet for most people is the most reliable way to lose weight. I could show you 25 studies proving this point. In a nation where two out of three of us is overweight or obese, it's not hard to understand why these very low-carb diets, like keto or Atkin's are popular—they work if your goal is dramatic weight loss.

## Ketones as a Superfuel

What fascinates me most about the keto diet is not the weight loss, but the ketones. Most physicians tend to wince when we think of past of experiences we've had with patients in diabetic ketoacidosis—a dangerous complication of diabetes when the ketones spike to toxic levels, generally in people who are gravely ill.

But for virtually everyone else, ketones are friendly molecules that trim our waistlines and boost our sense of well-being. Ketones are an alternate fuel source our liver generates when we have run out of circulating glucose, and exhausted our glycogen (glucose stored in the liver and muscles).



If we don't take in calories for 12 to 24 hours or longer, or if we just markedly lower carbohydrate consumption, the body starts melting belly fat and then the liver converts fatty acids that are released into ketones. The default fuel for the brain is glucose, and the preferred fuel for the heart is fatty acids—but when those fuels aren't available, these organs, along with the kidneys, are perfectly happy to burn ketone bodies for energy.

ATP is the chemical energy that powers life. Every 24 hours you generate your body weight in ATP. It blows my mind to know that I generate 74 Kg of ATP per day, which of course is recycled so we don't see the pile of ATP we produce each day, but we sure feel it—if our mitochondria stopped making ATP we would die in a few seconds.

When your body burns 100 grams (about 3 ounces) of glucose in the Krebs cycle, it generates about 8 Kg of ATP. But instead, if we are burning ketones—the two major ones are acetoacetate and beta hydroxybutyrate—we generate about 10 Kg of ATP, or 20% more energy.

And even more importantly, burning ketones

also throws off much lower levels of reactive oxygen species—evil chemicals that over time can cause corrosive rust throughout your system. In this way, burning ketones rather than sugar or other carbs will confer potent anti-inflammatory effects, allowing your brain and heart to function better—which helps you to think more clearly, and feel stronger and healthier.

When you follow a strict keto diet, you quickly evolve into a fat-melting, keto-burning machine that generates more power, and throws off a lot less exhaust—more like a Tesla, less like a diesel truck belching smoke. Wow, sounds great. All aboard the “Keto Express!” Get on the fast track to a whole new you.

## The Dark Side of Keto

Not so fast. Let me tell you about the nefarious alter ego of Keto's Jekyll and Hyde nature. Mark is a 57-year-old executive with heavy plaque in his coronaries. On the advice of an internet keto guru, he ditched his statin and started the keto diet. He followed it closely and cut his carbs to not more than 20 to 30 grams per day.

He lost 15 pounds and his blood pressure came down to the point where he had to stop his hypertension (high blood pressure) medicine. But his LDL rose about 400%, from an ideal level of 68 to 275. Many self-proclaimed diet experts insist high levels of saturated fats and cholesterol are nothing to worry about. But from where I sit as a cardiologist, I'm not buying it—this is a recipe for disaster!

In fact, a recent meta-analysis of 430,000 subjects from the best long-





term nutritional studies showed that both high-carb and low-carb diets shortened life expectancy. The keto diet is an extremely low-carb diet with less than 10% of calories from carbohydrates, corresponding to a 50% increased risk of dying during the 25-year follow-up period in this study.

A fascinating deeper dive into this data showed that when it comes to macronutrients, the type of fat you eat makes all the difference. Substituting in high-saturated fat foods like butter, cheese, cream, fried foods and fatty red meat plus carbs will shorten your life expectancy. In contrast, if you take carbs out by substituting in monounsaturated and polyunsaturated fats from natural foods such as fish, nuts, seeds, olive oil and avocados, then your life expectancy improves significantly.

### Become a Ketone-Burning Machine

Still, if you don't want to count carbs or drink cream, there are a few other practical ways to get into ketosis and reap the impressive benefits to mind and body. For example, you could just stop consuming calories for at least 12 hours per day. After about 12 hours, when your system starts to run out of glucose for fuel, you start generating ketones. They don't call it break-fast for nothing. You need to fast for at least 12 hours or better yet, 14 to 16 hours each day before eating your next meal.

Drinking coffee is another way to increase ketones. A recent study showed that consuming the equivalent of 1.5 to 3 cups of coffee first thing in the morning will double your blood level of ketones. Incidentally, if you get some exercise after drinking your coffee, but before you consume any calories, you will really crank up your ketone production. Coffee's ability to increase ketones is probably a major reason why this beverage helps to prevent Parkinson's disease and Alzheimer's, and also reduces risk for developing diabetes and cardiovascular complications.

### Bottom Line

Carbohydrates are bad when you choose cookies, doughnuts, candy and processed foods made from refined flour and/or added sugar.

Yet, carbs from foods like non-starchy vegetables and legumes are arguably some of the healthiest foods on the planet. Most of the cultures with exceptional longevity make legumes, such as lentils and/or beans, a staple in their diet.

Fats are bad when you get them from processed meats, fried foods, high-fat dairy and fatty animal foods.

However, fats can be super healthy when you're eating natural high-fat foods from plants and fish.

To summarize, if you want to get the benefits of the ketogenic diet, like weight loss, lower blood pressure, reduced inflammation and clearer thinking, without suffering cardiovascular complications from high cholesterol, you need to eat lots of nuts, olive oil, avocados (or guacamole), seeds and fatty fish. We go through a liter of olive

oil a week around my household. I am a connoisseur of nuts, and I eat one or two avocados per day. I consider myself to be a pescetarian, eating salmon, scallops, trout, or sardines most every day.

Other important habits for keeping ketones high include: fast for at least 12 hours every day, drink black coffee first thing in morning, then go get some exercise before breakfast. Consume generous amounts of non-starchy vegetables, and modest amounts of low-glycemic index fruits like berries; but avoid added sugar and refined carbs like the plague.

Importantly, this dietary pattern is very close to the traditional Mediterranean diet, which is the only diet that has been shown to reduce long-term risks of heart attack, stroke and death in a large randomized controlled trial, the PREDIMED Study.

If you want to reap the astonishing short-term benefits of the ketogenic diet, but don't want to compromise your future cardiac health, this modified ketogenic diet is how you can have your cake and eat it too. Wait ... that's the wrong metaphor. Let's be clear, you can't eat cake on this diet! But, you can have your ketones and a healthy heart with longevity too.



# Good Egg or Bad Egg?

By James H. O’Keefe, M.D., with Joan O’Keefe, R.D.

**W**hich came first, the chicken or the egg? In this article the egg comes first, since it’s been in the spotlight lately. The decades-old debate about whether eggs deserve a spot in a heart-healthy diet was reignited recently when a large study suggested eggs might increase the risk of cardiovascular disease.

The recent report was a meta-analysis of six prospective studies involving about 30,000 participants who were followed for 17 years. It found that for each additional 300 milligrams of cholesterol (the amount in two egg yolks) consumed daily, the risk of cardiovascular disease rose about 18%, and premature death also increased. To start with, the investigators unfairly singled out eggs as high-cholesterol foods—what about sausages, prime rib, and butter—all high-cholesterol foods that are much worse for you than eggs.

This information hasn’t changed our eating habits. Joan loves eggs and about three days per week she makes eggs for breakfast, along with a sliced tomato, dill pickles, sauerkraut and coffee. Joan says, “The egg is a unique source of a wide variety of nutrients, some of which are difficult to find in

other foods.” It’s Mother Nature’s version of a complete multivitamin.

Think about it ... inside a fertilized egg, are the genetic code and nutrients necessary to form a baby chick, including its brain, eyes, heart, bones, blood and skin. Talk about a superfood!

Eggs are indeed a wonderful source of complete high-quality protein, with only 68 calories for one whole egg.

And while egg yolks carry all the cholesterol and saturated fat, yolks also are loaded with many valuable nutrients.

For example, eggs are rich in choline, a nutrient that is generally scarce in the standard American diet. Choline is crucial for preventing fatty liver—an epidemic condition that now affects about one in four U.S. adults, and increases risk of coronary disease, liver failure and need for liver transplant.

You’ll get 6 grams of protein and only 24 calories per egg white, so if you’re hungry for a wholesome protein food but you want to avoid consuming too much cholesterol, just eat mostly egg whites.

When I make myself an omelet, I use three egg whites and only one yolk. I feed the other two yolks raw to my dogs—because they’re carnivores they can eat all the cholesterol they

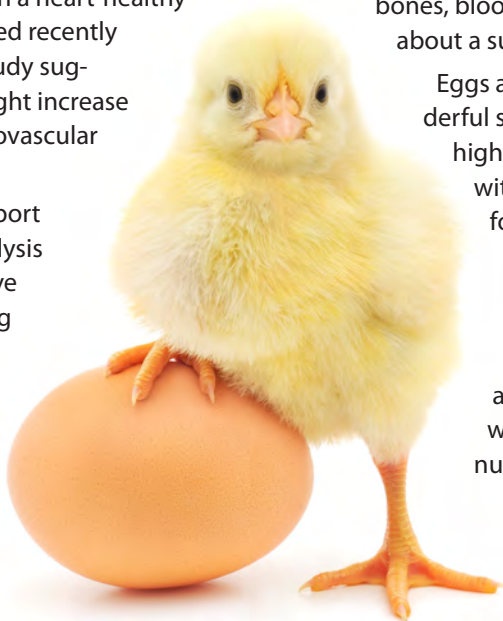
want without ever getting plaques in their coronary arteries.

The latest Dietary Guidelines for Americans 2015-2020 did not limit the intake of cholesterol; and studies have shown that moderate egg consumption does not adversely affect your overall lipid profile. Even so, the dietary cholesterol issue can be confusing and controversial, and this new study suggesting that eating high-cholesterol foods could increase risk for cardiovascular disease is not the final word in the great egg debate.

The truly toxic nutritional villains in the American diet are not contained within eggshells—though some of them are cheaper by the dozen—like doughnuts and bagels with cream cheese. These kinds of refined carbohydrates loaded with sugar and white flour, unlike eggs, have NO redeeming values. They are addictive, fattening, cause heart disease, diabetes and Alzheimer’s disease. And Americans love their carbs.

So, the next time you’re in the local grocery store, rather than frantically jockeying to get into the shortest checkout line, settle into a longer line and spend a couple of minutes scrutinizing what your fellow shoppers have piled into their carts. Then watch as they dump their bread, cookies, crackers, candy, packaged snacks foods and sweet drinks onto the moving belt.

Take note of the proportion of fresh fruits and vegetables, nuts, seeds, berries, beans, water and fish you see getting scanned in. Then ask yourself, “Are eggs likely to be the main culprit behind Americans’ expanding waistlines and shortening life expectancies?”





Joan in the produce aisle of our local grocery store.

By the way, when Joan goes to our neighborhood supermarket she is amused by how her friends and neighbors tend to run with their carts the opposite direction when they see her. And then the checkout clerks roll their eyes as she unloads her cart full of foods without a barcode, requiring them to weigh and manually enter a code for each bag of avocados, carrots, onions, etc.

We typically go to the store three or four times a week to restock on fresh produce. Like our ancient hunters-gatherers, eating fresh whole foods requires a lot of day-to-day investment of effort—but consider it an adventure that will revolutionize your life. It's a guaranteed solution for improving your mental and physical well-being, and your longevity.

Bottom line: eggs are a delicious and nutritious source of vitamins, minerals and protein, though you should probably limit your intake to not more than six yolks per week. So get scrambling, and enjoy!

## Dr. Mayer and Melissa Magwire Join SLCC Team

**Susan A. Mayer, M.D.**, recently joined SLCC from Johns Hopkins in Baltimore, Md., where she had served as a consulting cardiologist since 2004, and as medical director of the Hopkins Bayview Medical Center echocardiography lab since 2005.

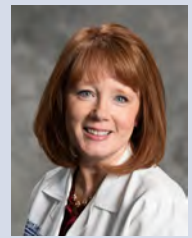


Dr. Mayer

Dr. Mayer received her medical degree from Loyola University, and she completed her internal medicine residency, chief residency, cardiovascular diseases fellowship, and an advanced echocardiography fellowship at UT Southwestern.

She has a strong academic record with particular strengths in the areas of program development, teaching and quality improvement. Dr. Mayer is widely recognized as an outstanding clinician and echocardiographer, and she is a leader in the American Society of Echocardiography, recently serving on an ASE medical mission to Vietnam.

**Melissa Magwire, RN, MSN, CDE**, certified diabetes educator, has recently joined Drs. Mikhail Kosiborod and James O'Keefe as the practice manager and program coordinator of the Haverty Cardio Metabolic Center of Excellence and the Cardio Wellness Center within Saint Luke's Health System. Along with her program development duties, she is a member of the collaborative care team, adding her 27 years of experience to the skill mix.



Melissa Magwire

Melissa has a master's of science in nursing with an emphasis on diabetes. She started her career as a certified critical care nurse in the cardiovascular arena, transitioning to outpatient adult endocrinology. She has provided direct care to patients living with diabetes, and has been a certified insulin and continuous glucose trainer, a clinical trial coordinator for six phase III clinical trials, a program manager and a coordinator. She serves on multiple national and international advisory boards, and has published in several professional journals.

The Haverty Cardio Metabolic Center of Excellence is a dedicated site for preventive and risk reduction cardiology visits. Care is delivered in a collaborative fashion with physicians, and advanced practice providers, as well as other appropriate health care professionals.

Patients are seen in the clinic not only to prevent cardiovascular complications that are common in the setting of diabetes, pre-diabetes, obesity and other metabolic conditions, but also to decrease the risk of additional complications if the patient already has had a heart attack. Those living with diabetes routinely see multiple providers and this often leads to fragmented care. By having a dedicated clinic with specifically trained staff, the goal is to provide more collaborative and comprehensive care, leading to not only better health outcomes, but to better patient satisfaction.

The center is now accepting patients at **816-751-8327**.

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Philanthropic donations to Saint Luke's Mid America Heart Institute help to support our comprehensive cardiovascular services including extensive research and educational programs for the benefit of our patients and their families. Our partnership with Saint Luke's Foundation offers an extraordinary opportunity for patients to express their gratitude, while at the same time contributing to an organization dedicated to improving the future health of the people in our community.

With every donation, we are able to deepen heart health research and positively influence the wellness of our community through the Saint Luke's Charles & Barbara Duboc Cardio Health & Wellness Center. Even this very newsletter, From the Heart, would not be possible without thoughtful donors who make heart health education available to more than 250,000 households and physician offices twice a year.

To support our work within the Saint Luke's Charles & Barbara Duboc Cardio Health & Wellness Center, please visit [www.saintlukesgiving.org/heart](http://www.saintlukesgiving.org/heart) to make a donation today.

To learn more about how you can make a philanthropic impact, please contact Christie Ruhl at 816-932-0291; or [cruhl@saintlukeskc.org](mailto:cruhl@saintlukeskc.org).

