

# NEWSLETTER

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MEDICINE TODAY - Dr. Kyle Heber

### Osteoporosis: What About Them Bones?

Osteoporosis is an incredibly common, yet gravely underestimated disease. It is the loss of bone density causing bones to weaken and break more easily. Osteoporosis is diagnosed clinically when a patient presents with a broken bone sustained by low or minimally traumatic force; a so called “fragility” or “osteoporotic” fracture. Most people are familiar with osteoporosis causing the bones of the hip to fracture during a fall from standing height (healthy bone should be able to withstand this impact); however, even less force may be required to fracture a bone that is substantially weak. Osteoporotic ribs and bones of the spine may fracture from a simple cough, a sneeze or sitting down too forcefully in a chair. Many osteoporotic fractures are diagnosed incidentally on X-ray and the patient cannot recall any significant trauma to the area. Bone density is classified on a spectrum that begins with normal bone density, followed by

the mid-range lower density of osteopenia, and ends with very low density that is considered osteoporotic.

Bones are living organs like everything else in our body and are constantly worked on by two major types of bone cells: osteoclasts that break it down so it can be remodeled and osteoblasts that build new bone to make it stronger. As humans mature, healthy bones increase in density, reaching ~90% their peak bone density by age 18 in females and age 20 in males, and maximum bone density by a person’s late 20s. Women are disproportionately affected by osteoporosis due to natural hormonal changes. Relatively stable bone density throughout their 30s onward is followed by an abrupt drop in bone density once estrogen production stops, especially in the first 5 years of menopause.

This disease develops silently

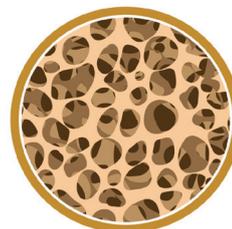
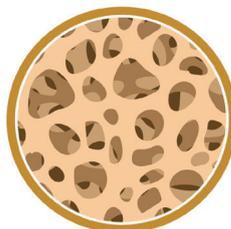
**BONES HEALTH** OSTEOPOROSIS IS A DISEASE WHERE INCREASED BONE WEAKNESS INCREASES THE RISK OF A BROKEN BONE



HEALTHY BONE

OSTEOPOROSIS

SEVERE OSTEOPOROSIS



and is very widespread, often undetected or overlooked until a serious fracture occurs. Among adult Americans age 50 and older, approximately 1 in 10 have osteoporosis and an additional nearly 1 in 2 have osteopenia. Combined, roughly 54% of all adults over 50 have bones that are weak and potentially prone to fracture. It is estimated that half of all women in the U.S. will fracture at least one bone over the course of their lives due to osteoporosis. Furthermore, half of all hip fractures do not regain full functionality of the joint once the fracture is treated. The cost of treating each patient over the first year following a hip fracture ranges from \$19,000 to \$40,000; higher costs incurred largely by those who suffer a second osteoporotic fracture within the same year. Overall it is estimated that the cost to our U.S. healthcare system is to the tune of \$19 billion per year in treating all osteoporotic fractures and their complications—this is a massive problem.

In order to detect bones that are weak and prone to fracture before an event occurs, physicians routinely screen for osteoporosis using a DEXA scan; an X-ray technique that measures the density of several bones that make up the lower spine and the bones of the hip. On occasion, the radius (a bone in the wrist) can be imaged if the spine and/or hips contain surgical hardware or are affected with severe arthritis that will interfere with the density measurement.

DEXA results are reported as a number called a T-score. Any result higher than -1.0 is considered normal, healthy bone density. Bones with a T-score of -1.0 to -2.4 are dubbed osteopenic:

they are weaker than they ought to be and warrant attention to prevent further decline to the osteoporotic range. The threshold for osteoporosis is a T-score of -2.5 or less, at which point bones are very weak and at definite increased risk of fracture. A DEXA scan does have its limitations and (like any other test) can yield false negative results. The bone density can be artificially elevated by severe arthritis of the joints or by surgical hardware, also the spine and hip may have adequate bone density, but osteoporosis can simultaneously be present in other bones we do not test. Patients diagnosed with osteopenia do occasionally suffer fragility fractures because they were misdiagnosed by false negative results. The major challenge to physicians is to identify and treat not just those with confirmed osteoporosis, but also those with osteopenia who are at greater risk of fracture beyond their bone density results. Loss of bone density and risk of fracture are influenced by dozens of patient attributes. Smoking tobacco, consuming 3 or more alcoholic beverages per day, prolonged immobilization, lack of regular physical exercise and being underweight are the most common lifestyle risk factors. There are well over 50 chronic medical conditions known to predispose to osteoporosis including diabetes, COPD, heart failure, chronic kidney disease, low testosterone, autoimmune diseases (i.e. lupus, rheumatoid arthritis, Crohn's disease, ulcerative colitis), HIV, hyperthyroidism, celiac disease, epilepsy, depression and a history of prior gastric bypass surgery. Additionally, numerous commonly prescribed medications lower bone density:

steroids, acid-reflux medications, cancer chemotherapeutics, warfarin, anti-seizure drugs, and some antidepressants and immunosuppressants. A family history of osteoporotic fracture also increases one's risk of developing the disease. This suggests why not only women suffer from osteoporosis and why some patients become osteoporotic in their 60s and others stave it off until their 80s—menopause is not the only risk factor, just the most common one. The U.S. Preventative Services Task Force recommends that physicians screen for osteoporosis in all post-menopausal women age 65 years and older with a DEXA scan and review of a patient's potential osteoporosis and fracture risks. The online FRAX risk calculator is the tool most commonly used to compute a patient's risk of sustaining a fragility fracture over the next 10 years. It accounts for many of the most important risk factors listed above as well as the patient's DEXA result. All patients whose 10-year risk of a hip fracture is at least 3% and any fracture of at least 20% ought to be offered treatment. Beyond women 65 and older, the guideline also recommends DEXA screening in "younger women" who exhibit substantial risk factors. There continues to be a lack of evidence to support routine osteoporosis screening in men, requiring physicians to use their best judgement when reviewing men for osteoporosis risk factors.

Bisphosphonates are the most commonly prescribed oral treatment for osteopenia and osteoporosis and can be taken daily, weekly or monthly, and they have IV forms available every 3 to 24 months. They are

recommended to be stopped on a drug holiday after 3-5 years to avoid excess accumulation in the bones that can cause a rare type of hip fracture. Denosumab is a synthetic antibody that is injected just below the skin every 6 months to block activation of the osteoclasts. Both bisphosphonates and denosumab can cause the highly publicized and dreaded complication known as osteonecrosis of the jaw; however, it is incredibly rare among patients treated for osteoporosis and is more common with higher doses used to treat patients with cancer that has spread to their bones. Synthetic calcitonin nasal spray is very well tolerated, but not very powerful. Estrogen replacement therapy for menopause treatment can prevent bone loss before osteoporosis develops. These options focus on slowing down bone loss. Synthetic variations of human parathyroid hormone known as teriparatide and abaloparatide are the newest treatments and they are very effective at quickly and actively promoting new bone growth to reduce fracture risk; however, they must be injected under the skin daily and are currently approved only for 2 years of use. As for calcium and vitamin D

supplementation, the answer is much less clear cut. The USPSTF has found no evidence to support any dose of calcium and/or vitamin D supplementation for prevention of osteoporosis and falls in adults living independently in the community. A reasonable suggestion then is to advise patients, regardless of bone density or whether they are receiving treatment for osteoporosis, to take in the recommended daily allowance of these nutrients through a combination of diet and supplementation if needed. This ranges between 1000 mg to 1200 mg of calcium per day and 400 IU of vitamin D per day, depending on a person's age and gender. A recently published study comparing healthy adults taking 400 vs 4,000 vs 10,000 IU of vitamin D per day for 3 years demonstrated lower bone density in those taking the higher doses.

Aside from receiving treatment and consuming adequate calcium and vitamin D, there are many things patients can do in their daily lives to promote maintenance and growth of healthy bone. Deleterious behaviors such as smoking tobacco, regular and excessive alcohol consumption and physical inactivity are key

lifestyles to avoid. Conversely, routine weight bearing exercise has been shown to promote bone health and is strongly encouraged. Proactively reviewing all medications and supplements with a physician can identify drugs with the potential to lower bone density if used either too long or too frequently, allowing necessary adjustments.

Osteoporotic fractures occur without warning and can be dramatically life altering. Many patients do well with surgical repair or minimally invasive means of fracture stabilization; however, many others are unable to return to their previous level of functional independence afterward. In the worst cases, and all too often, a hip fracture is the sentinel event that leads to a patient's downward spiral of post-surgical complications like infections and blood clots that inflict suffering and may ultimately prove fatal. It is clear that early detection and treatment of osteoporosis prevents fractures and the potential complications thereof and ought to be a major concern to both physicians and patients as part of routine annual wellness monitoring.



# Falls: Risk and Prevention - By Kelsey Reason, CEP

Courtesy of: The Mayo Clinic, National Council on Aging, and the Centers for Disease Control and Prevention

As you age, physical changes and health conditions may increase your risk for falling; falls are the leading cause of fatal and non-fatal injuries for older Americans. Falls threaten patient safety and independence as well as having a tremendous impact on economic and personal costs. In addition, the fear of falling can have a negative impact on a patient’s quality of life, resulting in limited activities and participation in social engagements. This in turn can lead to further physical decline (which can increase the risk of falling), depression, social isolation, and feelings of helplessness.

## THE STATISTICS

- 1 in 4 Americans aged 65+ fall each year
- Every 11 seconds an older adult is treated in the emergency room for a fall
- Every 19 minutes an older adult dies from a fall
- 1 in 5 falls cause serious injury
- 3 million injuries treated in the emergency room as a result of a fall equating to 800,000 hospitalizations and more than 27,000 deaths per year
- Falls result in 300,000 hip fractures per year
- Falls are the most common cause of traumatic brain injury which is very serious for patients on certain medications, especially for those on blood thinners (may result in an internal bleed)
- In 2015, the cost of fall injuries was \$50 billion per year and is expected to increase to \$67 billion by 2020

## RISK & PREVENTION PRACTICES

Talk with your doctor to evaluate your risk of falling. They can help you better understand your physical changes and health conditions so as to moderate these risk factors and possibly prevent a fall.

RISK FACTORS FOR FALL	PREVENTION SOLUTION
Lower body weakness	Physical activity reduces the risk of falling by improving strength, balance, coordination, and flexibility. Tell your doctor if you are not engaging in physical activity as a result of your fear of falling.
Difficulties with walking and balance	Tell your doctor – you may be in need of monitored physical therapy aimed specifically at improving your balance, flexibility, muscle strength and gait.
Use of medications	Ask your doctor to review your medications for side effects and interactions that may increase your risk of falling.
Vision problems	Have your eyes checked at least 1x year and update eyewear if necessary. If you wear progressive or bifocal lenses, consider getting a separate pair of eyeglasses with only the distance prescription for activities like walking. Multiple prescriptions in a single lens can make things seem closer or farther away than they really are.
Foot pain or poor footwear	Change your footwear if necessary. Wear properly fitting, sturdy shoes with nonskid soles which may also reduce joint pain.
Home hazards	<ul style="list-style-type: none"> <li>• Remove clutter from walkways and remove furniture or decorative accessories from high traffic areas.</li> <li>• Secure loose rugs or remove them altogether and repair loose or broken floorboards and carpeting.</li> <li>• Use non-slip mats in your bathtub/shower, use a bath seat, and/or consider handrails.</li> <li>• Immediately clean spills (liquids or food items).</li> </ul> <p>Keep your home brightly lit so you don’t trip over what you can’t see. Use nightlights, make clear paths to light switches, turn on lights before going up or down stairs, and store flashlights in easy-to-access places.</p>

RISK FACTORS FOR FALL	PREVENTION SOLUTION
History of falls or “almost falls”	If you fall, record the details including when, where, and how you felt (ex. dizziness, joint pain, shortness of breath, numbness in your feet of legs, etc.). Talk to your doctor or seek medical attention immediately. Discuss with your doctor times you almost fell as well.
Lack of use: Assistive Devices	Your doctor may recommend you use a cane or a walker – use it! Also, always use stair handrails and consider a raised toilet seat and grab bars throughout the bathroom.



Most falls are caused by a combination of risk factors. The greater number of risk factors present, the greater the likelihood of a fall. Always consult your doctor about your concerns and do not stubbornly write falls off as something that would never happen to you. A good rule of thumb to remember when using stairs is “up with the good, down with the bad” meaning you should step up with your good leg and step down with your bad leg. Remember that an investment in fall prevention is an investment in your independence.



## Bakersfield Heart Hospital...20 Years Later



# BAKERSFIELD HEART HOSPITAL

In September of 1999, Bakersfield Heart Hospital opened its doors with the effort of a group of physicians, previously competitors, desiring a place where they could practice the highest quality of medicine possible. The idea was to build a facility with care delivery centered around the patient. Physicians would share ownership and have increased input into care and collaboration that would create a hospital unique to Kern County.

Now, twenty years later, it's hard to find someone in the area who doesn't know someone who has received excellent healthcare from the service-oriented culture that is Bakersfield Heart Hospital (BHH). Being a smaller facility fosters a positive and highly engaged team. Leadership is very accessible and the family atmosphere can be felt by patients and their families.

Many changes have occurred over the twenty years of existence. When women were identified as being treated the same as men for heart attack care, BHH developed the Women's Heart Center. The center was devoted to screening and educating women on heart disease and the difference between heart attack symptoms in men and women. Many heart attacks have been averted due to the education women in the community have received and the center is now – at the insistence of their female patients - providing the same services for men.

As BHH saw the community grow, it was decided to not only focus on heart care, but other areas where the need was greatest. After hearing patients were waiting weeks for wound care appointments, BHH developed the Center for Wound Healing. Patients are now able to receive life enhancing wound care treatments before wounds become life threatening.

With an active community needing hips and knees replaced, BHH developed the Center for Joint Replacement. Patients attend a "Joint Camp" where they learn all about their procedure – pre-operative, during and post-operative. BHH believes informed patients can more easily become active participants on their own healthcare team.

BHH's relationship with Central Cardiology Medical Center, which resides on the BHH campus, has allowed BHH to be at the forefront when it comes to new treatments to benefit patients. The most recent involves the Zephyr Valve. This first minimally-invasive device approved in the United States is used to treat patients with severe emphysema, a progressive and life-threatening form of chronic obstructive pulmonary disease (COPD).

One thing that that has remained a constant at BHH is the culture. It's been said by patients and visitors when they enter the building they can feel something special. Take a walk through the hospital and you'll encounter staff smiling, going the extra mile, and a sense that staff want to be there making a difference.

It takes heart to be part of this top-notch team— with the help of their physician partners, they have garnered several accolades throughout the years. In 2019,





BHH was the first in the county to become an Accredited Chest Pain and Heart Failure Center – both under one roof.

At the end of the day, you want to know that as a patient you are

of utmost importance to the facility and the people caring for you. That’s why Bakersfield Heart Hospital puts their hearts into caring for you.

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Bakersfield Heart Hospital will

be hosting a 20 year anniversary celebration with staff and celebrating with the community on Saturday, September 28th from 10am – 2pm with a health fair, games, food vendors and more! All are welcome.



Bakersfield Heart Hospital is owned in part by certain physicians who practice at the Hospital. A list of physician investors is available upon request.

## Nutrition Nuggets - Michele Chynoweth RD, CDE

### Football Games & Tailgate Parties

Between high school, college and pro sports, football and the beginning of hockey season, you've got plenty of chances to root for your favorite teams. Sports events are synonymous with greasy food and sweetened beverages, but tailgating doesn't have to be a calorie disaster.

### Top 5 Tips

**1. Hydrate:** Drink water flavored with fresh lemon, lime or orange slices. Freeze sliced, washed lemon, lime and/or orange slices earlier in the week. Store in zip lock storage bags in the freezer.

**2. Pre-Game:** Eat a light snack before the festivities. "Starving thinking you will save calories" for later leads to overeating. Instead try ½ lean turkey sandwich on whole wheat bread or pita with lettuce, sliced cucumbers and tomato, or ¼ cup hummus and raw vegetables, or 1 cup of nonfat milk blended with 1 cup of frozen berries or ½ banana. Read cheese labels carefully for fat content. Select those with less than 4 grams of fat per ounce. Still flavorful, but much lower in butter fat!

**3. Avoid Penalties:** Don't be too hard on yourself — take a look at the spread and choose the not-so-healthy foods that you REALLY want. The "buffet briefing" can help you decide what you can select in small amounts. Use the salad or small dinner plate rather than regular size dinner plates and fill half the plate with raw fruits and vegetables. Lead with color!

**4. Play Clean:** Bring along hand sanitizer and sanitizing wipes if you won't have easy access to a sink.

**5. Game Strategy:** Even if you aren't hosting the tailgate party, bring along a healthy option — so at least one is available to you. Raw fruit and veggie trays, sugar free gelatin with low fat cottage cheese and crushed juice-packed pineapple blended into a "creamy" dessert, sugar-free alcohol free lemonade slushies, and more.

You need to walk the entire football field (100 yards) to expend the calories in one M & M...a few are OK, but watch the candy bowl, left over holiday candy, upcoming or sale items. They can sabotage your weight loss plans.

For personalized nutrition therapy, contact a registered dietitian (RD) [www.eatright.org](http://www.eatright.org), your health care provider or health plan.

Make small changes. Try a new marinade or salsa to liven up your barbeque. Add to grilled fish, chicken or lean beef kabobs. For a plant based meal, add black beans to top a combination vegetable salad. Garnish with salsa.

### Citrus Salsa:

¼ cup extra virgin olive Oil  
½ cup Mandarin Oranges, lightly chopped  
½ cup Tomato, Diced  
¼ cup Red Onion, diced  
1 Tbsp. Fresh Cilantro of Gourmet Garden™  
1 Tbsp. Red Wine Vinegar  
¼ cup Fresh Salsa

### Peach Salsa:

3 1/2 Cups of Diced, peeled Peaches  
1 cup Diced Red Bell Pepper  
1/3 cup Diced Red Onion  
1 Jalapeño Pepper, seeded and finely diced  
¼ cup Fresh Cilantro, chopped or

Garden Gourmet Cilantro

1 Tbsp. Fresh Lime Juice

¼ tsp. Salt

(Mango salsa: substitute for peaches)

Recipes source Sheryl Lozicki, RD, MBA E2 Eating & Exercise for Optimal Fitness

Are you still shaking after the summer earthquakes? Stay safe! Be prepared with these resources for you, your family, co-workers and medical professionals.

- <https://www.ready.gov/earthquakes>
- <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/earthquake.html>
- <http://www.mydiabetesemergencyplan.com/>
- [https://www.diabeteseducator.org/docs/default-source/living-with-diabetes/ddrc\\_patient\\_preparedness\\_plan.pdf?sfvrsn=2](https://www.diabeteseducator.org/docs/default-source/living-with-diabetes/ddrc_patient_preparedness_plan.pdf?sfvrsn=2)

### For professionals:

- <https://www.diabeteseducator.org/docs/default-source/living-with-diabetes/tip-sheets/aade-disaster-planning-toolkit.pdf?sfvrsn=0>
- <https://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness>

Our office has moved.

**Michele Chynoweth, RD, CDE**  
Nutrition & Diabetes Consultant  
9508 Stockdale Hwy Suite 120  
Bakersfield, CA 93311  
Provider for (661) 872-1295  
Kern Legacy Health Plan (preauth) Fax (877) 500-6858  
Medicare (only covers for DM & CKD)  
Bilingual Services Available Registered Dietitian  
Certified Diabetes Educator  
Kindly provide 48 hour notice to avoid cancellation fee

# Centric Health

Centric Health is a multispecialty medical group comprised of many of the most outstanding medical professionals and medical groups in Bakersfield dedicated to providing the highest quality of medical care in a rapidly changing health care landscape. Centric Health was developed to enable physicians to do their best work and to assure access to high quality care for residents of our community. Centric Health includes a broad spectrum of medical specialties and services designed to meet the many needs of patients.

The Physicians and healthcare professionals at Centric Health Medical Offices offer an array of services ranging from Cardiology, Vascular, Primary Care, Endocrinology, Pulmonology, Infusion Services, Neurology, General Surgery, Neurosurgical Spine Surgery, Urgent Care, and Diagnostic Imaging.

- **Central Cardiology Medical Center**
- **Preferred Family Care**
- **Sillect Medical Centers**
- **Kern Endocrine Center**
- **WF Baker MD and Associates**
- **J. Foster Campbell, MD**
- **Dr. Viridi - Neurology**
- **Dr. Ian Armstrong - Spine Specialist**
- **Dr. Fontaine and Dr. Borst - Radiology**
- **Dr. Ashraf - Pulmonology**
- **Dr. Nisim - General Surgery**
- **Southwest Internal Medicine**
- **Clinica Del Valle**
- **Golden State Hospitalists**
- **Centric Health Imaging**
- **Centric Urgent Care**
- **Centric Infusion Center**
- **Centric Priority Care Clinic**

## What's new at Centric?

Centric Health is pleased to welcome Dr. Ian Armstrong to its growing family. Dr. Armstrong is a Neurosurgical Spine Specialist. His office address is 3008 Sillect Ave., Suite 120, Bakersfield, CA 93308. Call 661-865-5670 to make appointments.

# Centric Health is Pleased to Welcome

## Ian Armstrong, MD

### Neurosurgical Spine Specialist

Dr. Ian Armstrong, a Bakersfield native whose father was also a renowned local Cardiologist, is a diplomat of the American Board of Neurological Surgery with fellowship training in spinal surgery. On graduating from Baylor College of Medicine in Houston, Texas, Dr. Armstrong continued on to complete General Surgery Internship and Neurological Surgery Residency from Baylor College of Medicine and Affiliated Hospitals at the Texas Medical Center (TMC). Immersed in various surgical fields over the 10 years spent at TMC, Dr. Armstrong developed special interest in spinal cord tumors and cranio-cervical junction stability. With the new found passion, he pursued two Spinal Surgical Fellowships: first at the University of South Florida, under the Neurosurgical and Orthopedic Spinal Surgical Fellowship Program and then the Orthopedic Spinal Surgical Fellowship Program at Hospital De La Concepcion in Marseille, France. Thereafter, Dr. Armstrong returned to California and has been in practice for nearly 26 years and has been serving patients in Los Angeles and Bakersfield.



Dr. Armstrong's career spans from operating rooms to movie sets to sports fields to board rooms. Dr. Armstrong has held positions on various hospital and corporate leadership boards, and has been significantly involved in teaching, research and development. He has also had the opportunity to be a consultant to the movie industry, professional sports teams, professional athletes, and spinal surgery companies. As a recognized leader in his field, Dr. Ian Armstrong has been called upon to be a resource for news and media, including television, radio and print – both nationally and regionally.

Dr. Armstrong is an ardent believer of multidisciplinary approach to the diagnosis and treatment of spine problems. He emphasizes conservative, non-surgical management with the latest in minimally-invasive techniques and in severe cases he offers major spinal reconstructive surgery.

With numerous publications on research studies from spinal trauma to concussions, Dr. Armstrong has authored books, and presented at national and international Symposiums and Conferences. Also, Dr. Armstrong is an Assistant Clinical Professor of Neurosurgery at UCLA School of Medicine. During his time away from work, he mentors inner city high school and college students in the clinical sciences. Dr. Armstrong has contributed time and energy to the efforts in rebuilding Haiti. He is an active participant of Pastors Network that performs humanitarian work in Kampala, Uganda. Dr. Armstrong also supports the Veterans organization and Wounded Warriors Foundation.

## From the Editor - Dr. William Baker

### Stomach acid reducers – Is the benefit worth the risk?

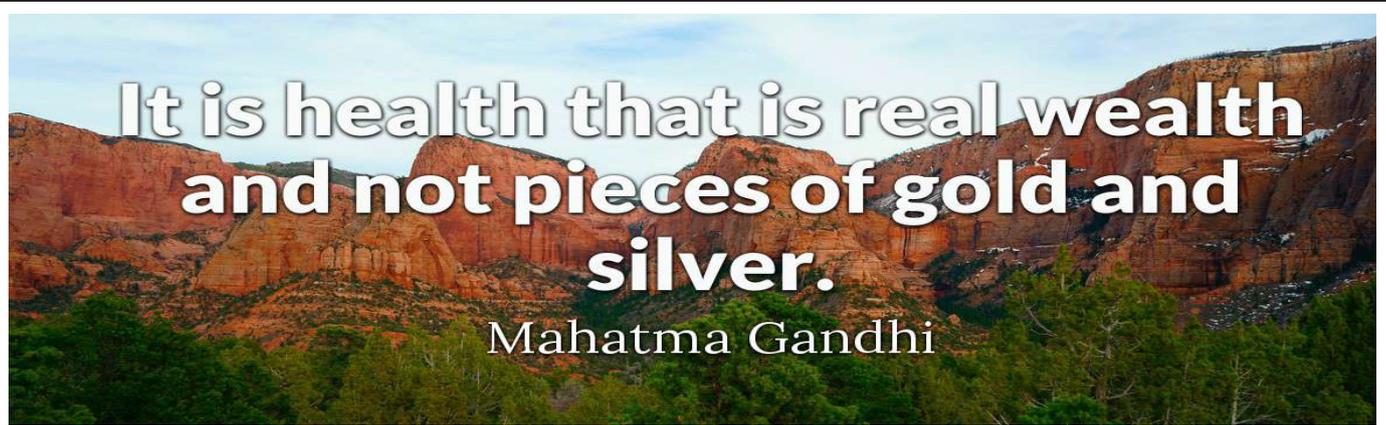


Gastric acid is an essential element in our ability to digest the food we eat. Acid is essential to breakdown of protein and many essential nutrients in the stomach for absorption. Many critical elements also require acid for absorption. These include vitamin B12 and Calcium. Stomach acid is hydrochloric acid and capable of causing intense inflammation and ulceration of the stomach lining. This would be the case if it were not for the presence of a layer of gastric mucous lining the stomach which protects the stomach from injury. This critical mucous layer is dependent on a substance known as prostaglandin. Prostaglandin production is inhibited by a variety of substances and medications. Common inhibitors of prostaglandin and hence gastric mucous production include alcohol, aspirin and NSAIDs (non-steroidal anti-inflammatory drugs such as ibuprofen (Motrin) and naproxen (Aleve)). When these chemicals inhibit prostaglandin, the protective mucous layer is not produced and hence the stomach lining is injured by hydrochloric acid. A bacterium known as *Helicobacter pylori* also cause stomach ulcers. Treatment for ulcers and stomach inflammation, as well as acid reflux into the esophagus (acid indigestion), is to reduce acid production. For many decades this was achieved by using antacids such as baking soda,

Tums, Rolaids, Maalox, Mylanta and many others. Countless gastric surgeries were performed to remove large portions of the stomach so as to reduce the number of acid producing cells. In the 1970s a class of drugs was produced known as the histamine 2 blockers (H2 blockers) capable of dramatically reducing gastric acid secretions. This was an enormous advancement in the management of stomach ulcers and surgeries for ulcers rapidly became a rare occurrence. No major long-term effects were identified with this class of medications which included cimetidine (Tagamet), ranitidine (Zantac) and famotidine (Pepcid). Because many patients still needed more reduction in acid secretion than the H2 blockers provided, a new class of drugs was developed. These are known as proton pump inhibitors (PPIs) and include omeprazole (Prilosec), lansoprazole (Prevacid), esomeprazole (Nexium), pantoprazole (Protonix) and dexlansoprazole (Dexilant). That's where the trouble started. On one hand, the PPIs provided remarkable relief from acid-related symptoms and resulted in faster better ulcer healing but on the other also led to the development of benign gastric polyps. This seemed to be the only real problem until studies of patients on long term PPI therapy were found to have reduced B12

levels and reduced bone mass (osteopenia and osteoporosis). Long term PPI users seemed to have an increase risk for dementia and kidney failure. Many studies have been presented regarding these concerns and a clearer picture is emerging. First, the intense acid suppression seen with PPI therapy is associated with markedly reduced vitamin B12 levels. Since our liver usually has about a 5-year store of vitamin B12, it takes many years of reduced B12 absorption to see reduced blood levels and further to have vitamin B12 deficiency disease such as nervous system damage or anemia. This explains why it has taken so many years with PPIs on the market to detect this adverse effect. Second, absorption of calcium is dependent on the level of gastric acid. Once again, we see that PPIs so intensely inhibit acid that calcium absorption is reduced. This does not affect the blood calcium since we have an enormous store of calcium in our bones. Over many years, however, this reduction in absorption results in measurable decreases in bone mass and an increased risk for fractures.

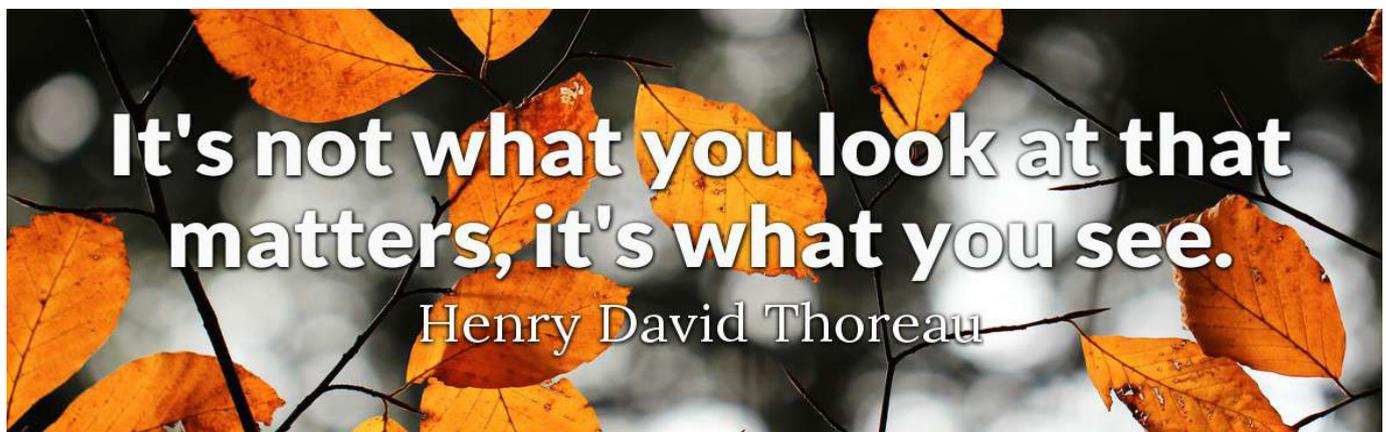
So, what to do? As you may have heard from your doctor, it is time to reconsider the use of PPIs. Several of the medication in this class are already available without prescription so reaching everyone who needs to consider a different approach to their indigestion is difficult. Your physician can perform tests which will identify if you are suffering from an adverse effect of these acid reducing medications and help you to select an individualized approach to manage your stomach acid-related disorder.



**“It’s normal for a man your age to have chest pains when he drips hot, melted pizza cheese on his shirt.”**



**“If I gain 20 pounds, it will give me the motivation I need to stick to my diet!”**



You must not rely on the information in these materials as an alternative to medical advice from an appropriately qualified professional. If you have any specific questions about any medical matter you should consult an appropriately qualified professional. If you think you may be suffering from any medical condition you should seek immediate medical attention. You should never delay seeking medical advice, disregard medical advice, or discontinue medical treatment because of information in these materials.