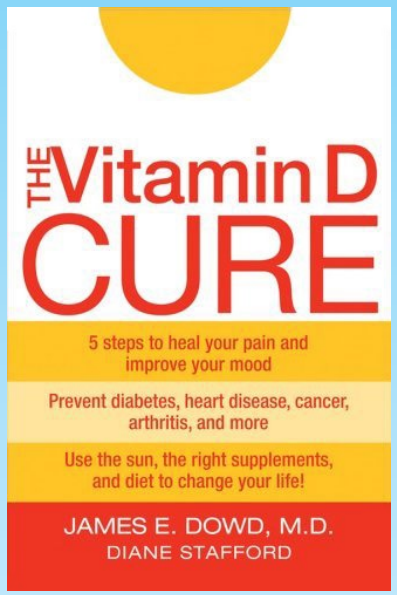
HEALTH BOOK SUMMARIES.COM
The best books on health, summed up and sent directly to you

THE VITAMIN D CURE

By James E. Dowd, M.D. and Diane Stafford



BUY THE BOOK

According to the Centers for Disease Control and Prevention, vitamin D deficiencies are quite common. Their statistics show over half of the population is lacking regardless of age, while more than seventy percent of elderly Americans and over ninety percent of Americans of color are D-deficient. Urbanization and the move into the industrial, then the digital age, has played a key part in increasing the deficiency levels in Americans; as the move towards working indoors gave us a lack of sun exposure.

On top of this, most of us do not grow our own food, or even have a steady intake of fresh food. Our fruits and vegetables are canned and frozen, and our meat sources no longer feed on grass, but on grain in feedlots and factory farms. Our cravings for the inexpensive, tasty and quick fixes for meals are being satiated with overly processed, salt and trans-fat laden junk foods that are not providing the sustenance our bodies require.

As such, our bodies are left starving for the simple things they need, like vitamin D. And we are paying the price. Vitamin D deficiency can cause a whole host of problems, such as:

- Restless sleep & fatigue
- Joint & muscle pain, swelling, cramping, or weakness
- Poor concentration & poor memory
- Uncontrolled weight gain, obesity, bowel, & bladder problems
- Depression, including seasonal affective disorder (SAD)
- Gum disease & tooth loss
- Chronic pain & fibromyalgia
- Parkinson's & Alzheimer's
- Arthritis, osteoporosis, diabetes, & cancer
- Heart disease & metabolic syndrome

Mayo Clinic researchers found that 93 percent of patients with widespread musculoskeletal pain had a vitamin D deficiency. At the Riyadh Armed Forces Hospital in Saudi Arabia, Dr. Al Faraj found that in patients who suffered undiagnosed chronic back pain for over six months, 83 percent had a D deficiency. In both cases, once normal levels were obtained through supplementation, pain was relieved.

Summary Information

From the book *The Vitamin D Cure* by James E. Dowd, M.D. and Diane Stafford.

CAT 215120

The Facts and Benefits of Vitamin D

Clearly, vitamin D is important. But what exactly is it? Most of us know it as a fat-soluble vitamin that comes from cholesterol, but it isn't really a vitamin at all. Vitamins come from dietary sources, while D is actually produced by the body. Pre-vitamin D is produced in the liver, and that, with a reaction to ultraviolet B sunlight and heat, forms D3 in the skin, which is further synthesized by the liver and kidneys into a potent hormone. The body cannot produce any active form of vitamin D without the reaction with UVB.

The hormone produced by this reaction and synthesis belongs to the steroid group of hormones, all of which are made from cholesterol. Included in this group are estrogen, testosterone, Cortisol, and also progesterone. All of these bind to nuclear receptors, interacting with the nucleus and having their effects on gene expression. The functions of vitamin D within the body are defined by its affinity with vitamin A, thyroid hormones, and growth hormone variations.

Besides the well known benefits of D for growing children, absorbing calcium, and forming bones and teeth, vitamin D is also crucial for:

- Slowing the growth of cells, which may reduce cancer risk by 50 percent
- Fertility
- Glucose control
- Reducing high blood pressure
- Preventing SAD
- Fighting infections & improving vaccine effectiveness

Most people believe that they get plenty of vitamin D from their diet and the sun. Unfortunately, for many, this simply isn't the case. Melanin plays a key role in this. The darker a person is, and the faster they tan, the more sunlight is required to convert pre-vitamin D to usable forms. Therefore, an African American who is dark-skinned would need approximately seven times the amount of sun exposure as a fair skinned person who burns easily.

Diet and Vitamin D

To further complicate things, our modernized diet is not conducive to vitamin D production either. High level intakes of grains and cheese, along with low intakes of magnesium and potassium rich food, create large amounts of acid build up in the body. This acid needs to be buffered by antacid-producing foods, containing calcium, magnesium, and potassium. When these are not included in the diet in the form of fruits and vegetables containing high amounts, they are borrowed from stores in the body; coming from bones, muscles, and joints.

This is known as acidosis, or acid excess, and causes a stress response within the body, causing higher Cortisol, renin, angiotensin, and aldosterone levels, along with lower growth hormone levels. This decreases bone and muscle mass due to the withdrawal of potassium, magnesium, protein, and calcium from the bones, increases blood pressure and abdominal fat stores, as well as increasing the amount of potassium and magnesium lost in the urine, which renders vitamin D less effective.

The Importance of Magnesium & Potassium

Without magnesium, there would be no life. Without it, we could not effectively produce vitamin D. Even plants depend on it - chlorophyll needs it to function correctly. It is essential for bone formation, muscle and nerve function, and as previously mentioned, as an acid buffer. Magnesium deficiency can cause:

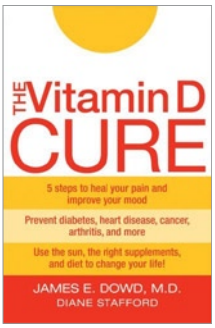
- Inefficient conversion of D to usable, activated forms of vitamin D
- Lack of production and use of ATP (adenosine triphosphate – an important cellular energy source)
- A decrease of parathyroid hormone (PTH) and calcitonin, which regulates the metabolism of calcium and magnesium, thereby rendering your body unable to use them well
- And increase of calcium and potassium loss through the urine

To ensure proper antacid levels of potassium and magnesium, and to help your body utilize vitamin D correctly, you must consume foods rich in them. Magnesium can be found in many fruits and vegetables, such as spinach, Swiss chard, collards, bok choy, kale, and nuts. Potassium rich foods include bananas and green, leafy vegetables.

Part 1 of the Cure - How Much Vitamin D Do You Need?

The first step in the vitamin D cure is determining how much vitamin D you need. Most Americans are deficient, and can benefit from following the steps outlined. To assess your needs, you can have a doctor perform a blood test, but this is not at all necessary before beginning the Vitamin D Cure. An analysis is available at www.thevitamindcure.com.

It is helpful, while doing the steps in the cure, to have your D levels analyzed from time to time to determine that they are fluctuating within acceptable parameters for your health. Ideally, this is between 50 and 70 ng/mL, and never below 35 ng/mL. This can be determined through a blood test measuring the level of 25-hydroxy-vitamin Dy. While deficiencies are often times corrected by physicians with D2 (ergocalciferol), a plant based form of vitamin D, this often doesn't show up on tests correctly, which can lead to toxic levels if the need is over-calculated. One of the best methods in use today to measure both levels of D2 and of activated D3 is called the DiaSorin method, and you can look up a lab near you that uses this by going to www.vitamind.com.



Part 2 – Sun & Supplementation

An increase in sun exposure with a UV index of 3+ can increase vitamin D levels. You can check the UV levels in your area by going to www.cpc.ncep.noaa.gov/products/stratosphere/uv_index/uv_annual.html or the Weather Channel at www.weather.com and entering your zip code, which will bring up your current weather conditions as well as the UV index. After required exposure, a sunscreen of SPF 15 and/or covering up is recommended. To determine your safe sun exposure, you can go to www.thevitamindcure.com.

People who frequent tanning salons generally have adequate vitamin D levels and require no further supplementation. On the other hand, larger people need more of this fat-soluble vitamin. The good news though is that even with more exposure than necessary to the sun, you will not make too much D. Your body automatically inactivates excess D formed in the skin. Keep in mind that there will be spikes in the levels of vitamin D in your body after intermittent exposure, such as a vacation, and test results immediately following will not provide accurate readings.

If supplementing based on your risk score, tablets, capsules, liquids, and gel caps all seem to be equally bioavailable forms. One thing to watch for though is vitamin A, which is often combined with D. Overdoses on A are common in people trying to supplement D, and A/D combinations should be avoided for this reason. Supplement resources can be found at www.thevitamindcure.com.

Part 3 – Reduction of Acid

Most people have an acid excess whether they are aware of it or not. Four common causes of acidosis in Americans are salt, cheese and saturated fats, too much grain-based food, and too little fruits and vegetables. To balance body chemistry, low nutrition foods that create acid, such as cheese, processed meat, and salt must be eliminated, and nutritious, alkaline-producing foods, such as fruits and vegetables, must be increased. To make it easy, there are two simple rules to follow:

1. Concentrate on two food groups: lean meat and fresh produce.

2. Eat a 3:1 ratio of produce to protein. In other words, three times as much produce as lean meat, by weight, should be consumed.

Lean animal protein includes seafood, boneless, skinless poultry, grass-fed beef, and pork tenderloin. Look for organic, pasture-fed, grass-fed, and clover-fed as guidelines when shopping for your meat; you can find sources at www.eatwild.com. Protein intake determines produce requirements; the American Dietetic Association recommends 0.8 grams of protein per kilogram (0.36 grams per pound), however recent research shows that physically active people may need 1.6 grams per kilogram, or twice as much to meet metabolic needs per day. Ideally, aim for an intake equal to half of your ideal body weight (defined if your body mass index (BMI) = 22).

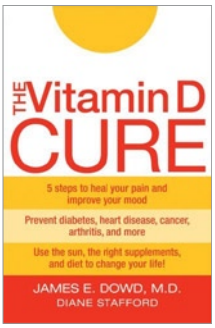
Fresh produce means that it should be fresh, not cooked, frozen, or processed. Remember: fresh is best, frozen is ok in a bind, and canned is only good if stranded on a deserted island! Other things to consider:

- Cut out salts in meats. Fruit juices with healthy oils (like extra-virgin olive oil) make healthy marinades. Citrus juices are good tenderizers.
- Use things like pepper for flavor. Chili or grated jalapeno can add spice.
- Mix up vegetables – try spinach leaves as a salad base or replacement for pasta.
- Nuts and seeds can add nutrition, texture, and flavor. Just avoid those with trans-fats and added salt, keep in the refrigerator to avoid rancidity, and consume moderately.

Part 4 – Other Supplements

Americans typically do not exercise outdoors much, nor do we eat enough fish and produce, so we are missing out on many nutrients in sunshine, vegetables, and seafood. Some critical nutrients that we can benefit from supplementing are:

- Folic Acid
  - Fights cardiovascular disease & reduces homocysteine
  - Essential for pregnancy to reduce neural tube defects and help with nervous system functioning
- Vitamins B6, B3, & B12
  - Help prevent cardiovascular disease by lowering homocysteine levels and raising HDL (good cholesterol)
  - Important for nervous system functioning
  - Most abundant in seafood and lean, fresh animal meats
- Vitamin D
  - Sun and supplementation are a good idea to meet requirements
- Vitamin K
  - Fat-soluble vitamin essential for bones and blood vessels
  - Interferes with the action of blood thinners, but is actually necessary to prevent clots
  - Can be found in green leafy vegetables such as spinach and bok choy, as well as in green tea

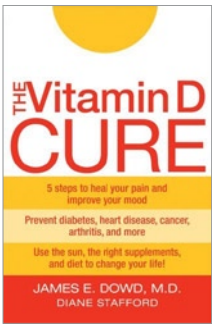


- Potassium
  - Needed for maintaining an acid-base balance, strengthening bones, and lowering blood pressure
  - Can be found in vegetables, fruits, and fresh seafood
- Magnesium
  - Neutralizes acid from protein metabolism
  - Body can absorb 30 – 50 percent found in nuts, dried fruits, and green leafy vegetables, but only 5 – 15 percent from supplements
- Omega-3 fatty acids
  - Polyunsaturated fatty acids (PUFA's)
    - Linoleic acid (LNA) – found in purslane and flax seed in high concentrations
  - Eicosapentaenoic acids (EPA) & docosahexaenoic acids (DHA) – found in fish, fish oils, and organ meats
  - Important for brain function
- Calcium
  - Americans who are deficient in vitamin D and do not eat foods high in magnesium and potassium will benefit from a supplement of 1,000 – 2,000mg per day
  - A diet high in salt and acid excess causes calcium loss through the urine
  - If 6+ servings of produce are consumed daily, especially green, leafy vegetables, supplementation is unnecessary

Part 5 – Exercise

Exercise is an important part of the vitamin D cure. Little things, such as committing 15 minute blocks daily to exercise, doing daily stretches and strength exercises, meditating during exercise, and performing cardio routines three times weekly all add up. Walking in the mall, taking your pet to the park, and even strolling with a friend all count. Vitamin D helps with exercise by preserving muscle mass, improving muscle performance, and helping you exercise better, making your muscles more efficient. Conversely, exercise improves vitamin D production and supply.

You can think of exercise as a protection against physical and biochemical stress. The more you exercise, the more buffers in the form of protein, magnesium, potassium, and calcium you maintain to ward off acidosis and illnesses such as pneumonia and cancer. In addition, you have more endurance for things like running a marathon. Aerobic exercises,



three times a week, can have great impacts on your cardiovascular health. For this as well as an increase in lean muscle mass, at least twelve minutes at an aerobic rate must be maintained through the session. To calculate your training heart rate and target time:

- 220 – age (years) = maximum heart rate (MHR)
- Maintenance = 15 – 20 minutes at 50 – 65 percent MHR
- Weight loss = 45 minutes at 50 – 65 percent MHR

Be sure to get your doctor's approval before beginning any exercise program.

Vitamin D and the Metabolic Syndrome

Metabolic syndrome is the umbrella term covering a combination of obesity, high blood pressure, insulin resistance, and cardiovascular disease (CVD). There is an association with vitamin D deficiency and the metabolism changes that are behind these diseases:

- Increases energy storage in the form of abdominal fat
- Raises blood pressure, insulin resistance, triglycerides, and bad cholesterol (LDL)
- Increases various hormone levels within the body, triggering an inflammatory response within the body
- Accelerates bone turnover, releasing minerals and proteins from the musculoskeletal system

Researchers have found that the propensity to develop metabolic syndrome begins at conception, because that is when the most impact from vitamin D deficiency occurs. Unhealthy lifestyles compound the problem. When there is more fat within the body, nutrients go into the fat storage, and the inflammatory substances that the fat cells produce increase resistance to insulin and leptin. If you have three or more of the following symptoms, you have metabolic syndrome:

- Waist size >40 inches (men) or >35 inches (women)
- Blood triglycerides level of 150 or more
- HDL (good) cholesterol <40 (men) or <50 (women)
- Blood pressure >130/85
- Fasting blood glucose levels of 110 or more

More information on metabolic syndrome can be found at www.nlm.nih.gov/medlineplus/metabolicsyndromex.html. Staying within optimum weight levels goes a long way in staying healthy and maximizing nutrient utilization, thereby reducing the risk for metabolic syndrome and other diseases. Eating a higher protein diet

compared to one high in carbohydrates or low in fat can help to lose weight and also to maintain a healthy weight. Studies with both animals and humans have shown that protein is more likely to help you feel full and maintain satiety, which means you are eating less and consuming fewer calories. Weight loss programs are most effective when you can stay on them, and when you feel satisfied on them. Vitamin D fits into this; a high D intake at breakfast combined with a high calcium intake can help you to eat three hundred fewer calories throughout the day. It helps with more than the obesity portion of metabolic syndrome too:

- Studies show that exposure to enough UVB light to raise D levels by 162 percent caused a decrease in both systolic and diastolic blood pressure in people with elevated initial levels, and vitamin D oral supplementation has similar effects.

- Vitamin D is necessary for the pancreas to release insulin, and a deficiency of D produces insulin resistance in tissues.

- There is a rise in the incidence of heart attacks during winter months, and more people die from heart attacks during this season, which correlates with lower D levels at this time of the year.

- Good (HDL) cholesterol levels are higher in the summer than in the winter, caused by a combination of UV light exposure, vitamin D levels, and a change in diet as well as physical activity.

- There are clear links between vitamin D deficiency and inflammation within the body; vitamin D reduces the stickiness of blood, aiding to decrease the risk of plaque formation.

- The vitamin D cure is estimated to be able to:

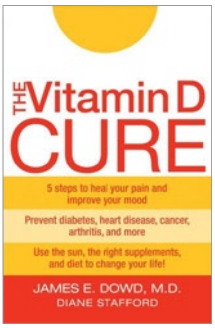
    - Reduce obesity risk by 57 percent
    - Reduce the risk of high blood pressure by 67 percent
    - Lower glucose intolerance risk by 55 percent

All of these changes metabolically within the body serve to lower your risk of suffering a heart attack or stroke by fifty percent.

Vitamin D and Your Brain

Vitamin D controls many factors from conception to death. In utero, it controls brain development with the help of protein and DHA, and later helps in learning by encouraging growth factors. In adults, vitamin D protects the brain from injury by serving as an antioxidant. When damage occurs, it uses the factors required for growth for repair.

Affective spectrum disorder (AHD), is a family of diseases that Harvard psychiatrists say includes depression, post-traumatic stress disorder, anxiety disorders, chronic fatigue,



substance abuse problems, and fibromyalgia (FMS). Associated with AHD are symptoms such as musculoskeletal pain, sleep disturbance and fatigue, and mood disturbance. In people suffering these symptoms, there is a chronic activation of the hypothalamic pituitary axis (HPA), which is the brain's hormone regulatory center that controls stress response. When it is constantly activated, there is an increase in Cortisol levels and pain-causing substances, and a decrease in growth hormone levels and serotonin production.

It is clear that as vitamin D levels rise and fall, so do serotonin levels, and correcting deficiencies in D can improve symptoms of fatigue and mood in SAD. Along with this, fixing vitamin D levels in conjunction with correcting magnesium levels help with the pain of migraines and fibromyalgia. This corresponds to findings at the Mayo clinic in Minnesota that show that in people who have undiagnosed chronic pain, more than 90 percent had D levels under 20, and 28 percent had levels below 8. Dramatic resolutions in pain, fatigue, and muscle cramps were achieved when levels were corrected.

When the brain can no longer repair itself and keep up with the stresses from unhealthy living and traumas such as head or emotional trauma and high blood pressure, the person begins to suffer dementia. At Washington University in St. Louis, researchers studying eighty Alzheimer's patients found that 58 percent had D levels under 20. The deterioration of understanding, problem-solving, and memory seen in Alzheimer's disease is also more common in those already suffering from obesity, hypertension, heart disease, and diabetes. The dementia found in Alzheimer's is also seen many times in those with late stages of Parkinson's disease.

The current evidence suggests that a diet low in vitamin D, omega-3 fatty acids, and dietary magnesium can lead to a person being ravaged by degenerative brain disease. By following the vitamin D cure, you may be able to lower your risk for this, as well as decreasing your chances of depression, muscle, bone, and joint pain and disease, schizophrenia, and chronic pain.

Vitamin D and Immunity

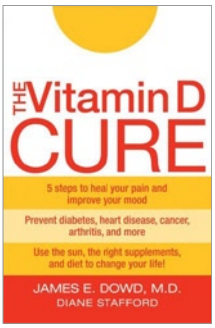
The body's immune system depends on three different types of white blood cells:

- M-cells, which sift through the leftovers left behind from normal and abnormal cells, and then alert T-cells of danger.
- T-cells, the "judges", that decide if there is a response required; includes T-helper cells, T-killer (cytotoxic cells), and regulatory T-cells. They either activate the B-cells or kill invaders themselves.
- B-cells, the "enforcers", which at different times are either presenting evidence or responding.

Vitamin D is important in this process as it helps the white blood cells do their jobs. Specialized M-cells, dendritic cells (D-cells), help the other cells learn how to "file" all of this information, and vitamin D controls the number of D-cells that are

involved in this process as well as their function. A normal D level helps the immune system learn to tolerate its own proteins early in life, and then ensures proper response to things like infection and cancer later in life, and a deficiency is related to many diseases:

- Type I Diabetes (juvenile diabetes) – Antibodies created by the immune system that are directed at the islet cells in the pancreas causes this type of diabetes, but if there are sufficient levels of D in the system, this antibody increase can be halted and the chances of developing this form of diabetes decreases.
- Systemic Lupus Erythematosis (lupus) – Causes your own body to turn on you by D-cells, which are randomly activated, jump starting T-cells that instruct B-cells to make antibodies against you. Vitamin D levels are often significantly lower in people suffering this disease.
- Multiple Sclerosis – The myelin sheath, which is the nerve covering, contains proteins. In MS, the immune system makes antibodies against these proteins, and the resulting inflammation causes a disruption in the covering that slows the transmission of electrical impulses, resulting in partial to permanent loss of muscle sensation and function. Being born and living above 37 degrees north latitude prior to adolescence increases the risk of developing MS two to four times compared to those whose childhoods were spent below 37 degrees north latitude. In addition, studies have shown a reduction in disease activity when vitamin D is supplemented.
- Inflammatory Bowel Disease (IBD) – IBD is caused by various factors involving your relationship with the bacteria in the intestine, which may be an: overgrowth of inflammatory bacteria, intolerance to healthy bacteria, or a destruction of healthy bacteria by substances that inflame the bowel wall, as seen in celiac disease. Studies have found that supplementation of vitamin D in genetically altered mice prevents IBD. If the mice are already diseased, additional activated D clears the inflammation.
- Psoriasis – Typically manifesting before the age of twenty, psoriasis sufferers have patches of silvery, scaling skin that commonly occur on elbows, knees, feet, buttocks, and the scalp. It is currently thought to be linked to an intolerance to bacteria in the skin, mouth, or nose, which causes an immune response. Researchers have found that activated vitamin D as well as D analogs applied topically can reduce or eliminate the ailment. An even more effective treatment is D combined with vitamin A.
- Rheumatoid Arthritis – Women are three times as likely as men to have this autoimmune disease, which not only causes inflammation in the small and large joints but can lead to inflammation in the eyes, lungs, and blood vessels, causing deformity and disability within a few years. Animal studies have shown reduced inflammation when D was supplemented, and the Iowa Women's Health Study showed a decreased risk of developing this rapidly-developing disease when the women took vitamin D.
- Infections – UVB, essential for the synthesis of vitamin D, also has the ability to inactivate viruses, which correlates to the flu season following the hemispheric seasons. Vitamin D levels also ebb and flow with the seasons.
- Cancer – In cancers, including those of the breast, prostate, colo-rectal, and skin, vitamin D plays a key role in prevention, along with a healthy diet and lifestyle.



Vitamin D for Your Bones, Joints, and Teeth

Vitamin D is not only important for bone formation and growth from conception through childhood, but is also necessary for regulating bone-turnover throughout life. It is important for the health of teeth, and increases muscle strength, mass, and coordination.

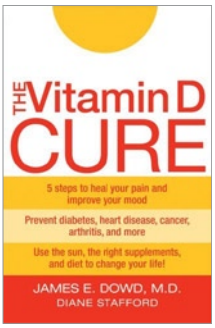
Diet has a significant impact of how D works in the body. Protein is necessary for bone and muscle mass maintenance, and magnesium along with omega-3 fats slow bone turnover. Acidosis-stimulating foods such as cheese, salt, and grains drain calcium, magnesium, and protein from bones and muscles, and work against vitamin D. Green leafy vegetables are essential for bone and muscle health and balancing the acid-base in the body.

With the typical American diet being high in acid-producing foods and low in greens and other vegetables, it is no wonder that the leading cause of disabilities in our population are diseases involving muscle, bone, and joints; lower back pain is the number one cause. Cases of osteoarthritis, gout and pseudogout, even strength and coordination issues, can all be linked to low levels of vitamin D, and are improved when these levels are raised to within normal ranges.

People experience an increased risk of bone breakage as they grow older, caused by the skeletal disease osteoarthritis. While it affects older generations, the propensity towards developing it is set up early in life. During childhood, the less protein, calcium, magnesium, and phosphorous that is integrated into the skeleton, the higher the risk later in life. As adults, the lower your levels of vitamin D, the higher your risk of fracture due to a lower bone mass. Because of this, it is important to maintain normal levels of D during pregnancy. Children must get enough of the vitamin through sun or supplements as well as in their diet, complete with adequate protein and omega-3's, and parents should ensure they do plenty of weight-bearing exercises such as climbing trees, playing sports, or riding bicycles to help guarantee healthy bones.

Studies have shown direct connections between cavities, tooth loss, and gum disease and the development of cardiovascular disease and multiple sclerosis. Dental health is a good outside indication of what is going on with the bones on the inside. People who have extensive tooth loss most likely are not only lacking in bone mass but are severely deficient in vitamin D as well. Supplementation of vitamin D, along with calcium, can reduce the rate of tooth loss and help bones as well.

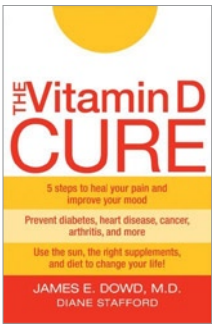
Following the recommendations of the vitamin D cure can lower the risk of arthritis by 50 percent, and the same goes for the risk of muscle weakness, loss of coordination, and the falling that is associated with aging. Those with higher vitamin D levels show a 26 percent reduction in osteoporosis, but if diet and D have been maintained since conception, a 50 percent reduction of risk can be expected.



The Fountain of Youth

Vitamin D, along with proper diet and exercise, could be considered a veritable Fountain of Youth for the aging as well as for the young. Maintaining an acid-base-balanced diet along with adequate D intakes in children ensure healthy brain, bone, and teeth development, improves vaccination response, and reduces the risk of infection. Later in life, adequate intakes reduce the risk of arthritis, scoliosis, high blood pressure, heart disease, cancers, and autoimmune diseases.

Many people who are already suffering report dramatic decreases in pain and increases in their quality of life when their vitamin D and diet deficiencies are rectified. Even in cases of genetics, maintaining a healthy lifestyle can counter any predisposition that one may have been born with. The choices that we make determine how healthy we are, so imagine yourself being the picture of health, and make the choices necessary to achieve that goal! ■




HEALTH BOOK SUMMARIES.COM
The best books on health, summed up and sent directly to you