The Osteoporosis Rx

Readers Summary

1. What are the rules that govern The Osteoporosis Rx?
2. Does old age cause osteoporosis?
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5. What is The Osteoporosis Rx?

Osteoporosis is a disease in which the bones become weak and are more likely to break. People with osteoporosis most often break bones in the hip, spine, and wrist. If you think this problem is not common, let me pick up the rock you must have been sleeping under. In the United States, more than **60 million** people either already have osteoporosis or are at high risk, due to low bone mass. Many people falsely believe that fats and proteins can harm bone density because of some flawed data in childhood epilepsy data. Recently, these ideas have been overturned.

RULE 1. If one is leptin resistant, Wolff's law is *null and void*, and you are at very high risk for a fractured vertebrae or hip/wrist. Tissue levels of DHA are low and your sulfated vitamin D3 from sun cycles are also altered. You should stop here and go read EMF-8 Quantum Bone for the pathophysiology of this disease. The key features are to increase your seafood intake. You should also consider spring water intake to 1-1.5 gallons of non fluoridated water a day and strict avoidance of artificial blue light frequencies and the use of pulsed EMF technology devices. This means that "normal conventional wisdom osteoporotic treatments" and exercise will not heal or strengthen a bone until the underlyig pathophysiology is repaired first. When a person has high levels of leptin, it eventually drives cortisol higher and this stimulates even more inflammatory cytokines from cells. As this occurs, LR

develops all over the body. Cortisol is one of the major hormones involved in the sympathetic nervous system. When cortisol is chronically high, as I told you in the Hormone 101 blog, it's bad news. When someone is leptin resistant, they block osteocalcin's main function and this causes osteoporosis. This is one major reason why fat people lose their bone. It also definitely proves that Wolff's law is null and void when you are LR. Even resistance exercise maybe harmful when this occurs. Bone only strengthens when the underlying hormonal terroir is working properly. In LR, it is seriously broken. Ketosis is protective to bone.

RULE 2. Andropause and Menopause are associated with osteoporosis, and not caused by it. In both situations the best treatment to overcome it is to change your diet to a high fat and protein diet. You would be a wise patient to avoid all bisphosphonate drugs until it's too late. This will be hard to do, because most clinicians will push drug treatments over evolutionary medicine treatments. ***Remember The Seven Dwarfs of menopause: Itchy, bitchy, sleepy, sweaty, bloated, forgetful, and all dried up…and the bones are real dried up!***

RULE 3. A bad diet is a common cause of osteoporosis, or osteopenia, and not menopause or andropause. Low marine based diets and Low vitamin K2, dehydration, and poor intracellular magnesium status are the major players. Vitamin K2 is a fat soluble vitamin so eating fats is a smart play. Bad hormones assays are additive to the problem. Hormones are a proxy for the amount of electrons in our mitochondria. This ties directly to a high redox potential. This is important to understand because I see 30% of patients below 35 yrs old now suffering with bad bone when I perform a spine surgery on them. I find this incidentally often at surgery, when we are inserting a screw into the bone and it feels like the screw is going in sheetrock compared to a wall stud. Once this happens, I run some tests post op and find out that they do have it. I no longer rely on bone density testing. If you go and have a

formal bone density study done, often its findings make the doctor believe that you have no bone issues present. Why? Because the standard bone density tests are neither sensitive or specific enough to pick up more subtle disease. The gold standard in diagnosis occurs when a surgeon places a screw or needle into the bone at surgery or biopsy. Nothing is more accurate. It also must be remembered that osteoporosis in evolution will not affect the entire skeleton uniformly all at once. It tends to affect certain areas before others, and can give a patchy distribution over the skeleton. This also is another reason why the bone density exams are off because they represent and arithmetic average of the bones sampled, and not the true overall bone density. The most accurate place to check bone density is in the wrist, because in this area, humans rarely get weak bone or osteoarthritis that can falsely elevate the result. Yes, osteoarthritis is the most common cause of false positive testing with standard bone density testing. Just about everyone in the USA has OA over the age of fifty. Sadly, few clinicians realize this and most imaging centers and hospitals do not spend the extra money to buy the scanning equipment to get accurate bone assays. I send all my cases to my endocrinologist, who has bought the wrist module needed for accuracy for his own bone density scanner. It is that important.

RULE 4. Osteoporosis is conventionally thought of as a disease of aging. That has to stop because it is old school conventional wisdom. What is closer to the truth is the patient's diet. The worse the patient's diet is, the more likely osteoporosis will be present regardless of age. The younger generation has massive unrecognized osteopenia present because they have lived surrounded by processed food and have avoided seafood. I found this out the hard way in many spine surgeries over the last 15 years. This is due to the SAD, which causes high inflammation levels, low vitamin D levels (from lack of D in the diet), pregnenolone steal syndrome (reducing the formation of D3 in the body) and liberal use of

sunblock and lack of outdoor activity to gain sun exposure. I wrote about this and shared it with some of my spine and orthopedic colleagues in 2007. I was ignored back then. Two weeks ago the North American Spine Society met in Chicago. An abstract was presented at this meeting by Dr. Jacob Buchowski. His paper won the Whitecloud Award during our recent IMAST meeting this year. It was also a hot topic talked about during the recent NASS meeting. The subject of his 2011 paper was finding an alarmingly high rate of low pre-operative vitamin D3 status in spine fusion patients. In his paper, he mentions that there are now 1 billion people worldwide with Vitamin D3 levels below 30 ng/mL. 27% of those with hypovitaminosis have levels below 20 ng/mL. Vitamin D problems are usually associated with Vitamin A issues as well tied to poor melanopsin signaling. Most spine surgeons are unaware of how Vitamin A and Vitamin D cycles are feedback loops of one another. These people carry excessive risks for spine surgery or any bone surgery. It affects their bones, muscles, bones, ligaments, tendons, and discs. In my own practice I push sun exposure and use PBM/LLLT for those who are willing to go all in. PBM = photobiomodulation and LLLT = low level laser therapy. Most people know it as red light therapy. How to use it in bone and muscle healing is somewhat different. I teach my patients how to do it on a case by case basis. This very fact means that their prognosis is going to be suboptimal, no matter how well the surgery is done. When vitamin D3 levels are low bone regeneration is badly impaired because the DC current in bone is altered. Bad substrate bone cannot be overcome with technique, hardware, or artificial bone morphogenic proteins. It is like trying to build a house with termite infested wood. PBM and LLLT can augment healing in many cases because it increases oxygenation and ATP production.

Sadly, most surgeons and patients only find this out during the surgery because few surgeons are screening in depth for this now a very common disease. This disease is easy to pick

up on pre-operative MRI’s The bigger concern I have always had is that patients who are undergoing this type of surgery get simultaneous spikes in cortisol the day of surgery (due to stress), and in the postoperative period for weeks, and this causes a massive transient pregnenolone steal syndrome. They also get pre-op and post-op antibiotics that alter their gut flora and effect the Vitamin K recycle and can cause gut dysbiosis for up to 12 months post-treatment. This further deteriorates the bone quality for surgery and recovery postoperatively. It is the perfect storm for a suboptimal outcome if you do not expect it. Moreover, recent orthopedic data on peri-operative total knee replacements have confirmed my clinical experience over the last ten years. The cortisol release is a massive risk for osteoporosis. The hormonal response to this can be tested and proved but few surgeons and physicians even consider it. In our hospital, four years ago, I convinced one of my pulmonologists, Dr. Michael Ramos, to check all of our patients Vitamin D3 levels in our ICU to test my hypothesis. During this time, he did not find one person with a normal Vitamin D level. Needless to say, this made an impact on him and caused him to become proactive. In our pharmacy at the time, we did not have Vitamin D3 on the formulary, because organized medicine never gave this situation a second thought. Dr. Ramos sent me cadres of patients with vertebral fractures because pulmonary issues (smoking) put people at tremendous risk for developing bad bone. I spoke to Dr. Ramos often about my surgical findings and my belief that any patient under a stressor has huge implications for the development of bad bone, especially if they had poor light hygiene with a poor diet.

Any diet devoid of seafood puts you at significant risk for osteopenia or osteoporosis. This includes the keto, carnivore, or paleo type diets. High carbohydrate diets, like the vegan diet, carry the HIGHEST risk for poor muscle skeletal healing in my experience. Sadly, most patients in most hospitals do just that. The food they are given is based

upon the flawed USDA pyramid concept. This is reinforced by the employed nutritionists and dietitians who are trained to believe that a high carb, low-fat diet is Optimal. So patients get no real help for osteoporosis when they are in the hospital. Dr. Ramos was critical in getting vitamin D3 on our pharmacy's formulary, but even today we do not have all the tools we need to fight this disease (sunlight, paleolithic diet options, DHEA, K2, bio-identical estrogen or progesterone creams). They do have testosterone available in injectable forms, but not in creams for ladies. I have my patients bring their medications I prescribe to the hospital to take. Most of my patients are able to leave the hospital the same day so we try to avoid this issue. Surgeries have gone from quite invasive ten years ago to today, being very minimally invasive because of the epidemiological trends I have seen occur over the last 15 years in our population. What makes bone surgery less invasive is if the surgeon uses fewer X rays during the case. Most minimally invasive surgeons actually use more Xrays, making the case more invasive for the patient from a wound healing perspective. The key to surgical success these days is not the operation, but in finding a surgeon who limits the use of Xrays and treats osteoporosis aggressively before any surgery is done. This is the best way to get to Optimal results. The key point for patients and PCP's: Patients need abundant DHA intake from seafood, sulfated Vitamin D3 from AM sunlight and vitamin K2 from foreign cheeses or natto allowing the gut microbiome to work optimally all allowing the calcium to go where it should and not into a vessel. The Vitamin A issue needs to be addressed with night light hygiene of the skin and eyes. It can also be a problem with excessive daytime blue light exposure in some people addicted to blue light. Giving one without the other won't work well.

RULE 5. If you have risk factors, you must have lab testing done preoperatively. In my first blog on osteoporosis, I told you all about osteocalcin and its importance in osteoporosis. This test is not done in most hospitals in the USA. Scary, is

it not? There are over 1 million osteoporotic spine fractures yearly in the USA, and we are not even able to perform the best test to assess it. Moreover, the test that is used by most clinicians for fracture risk since 2008 called the FRAX test has been found to be extremely inaccurate. I have also mentioned, above that standard bone density studies are not sensitive or specific enough to be considered reliable in patients eating a SAD loaded in carbohydrates. I find the best screening study in my own clinic is a MRI, and a history and physical. It shows loss of cancellous bone and increases of fat in the vertebral bodies or of long bones. Often, I also have labs like an HS CRP and Vitamin D level, retinol binding protein, that also help confirm the diagnosis. Once these are present, I then begin to assess their real future risk with hormone assays.

In 2004, the JAMA had a double-blind study done on the effects of DHEA in humans. People on the drug lost two pounds, and those on placebo gained a pound. We know today that DHEA helps in weight loss, but what I found interesting in this study was that the women in the group lost 10 % of the abdominal fat (proved with an abdominal MRI) and men lost 7% of their abdominal fat. This is the fat that causes IL-6 (closely related to Leptin's chemical structure) and cortisol to rise while there are abnormalities in Vitamin A too. Elevated cortisol causes osteoporosis to occur. DHEA also helps to enzymatically alter cortisol back to cortisone; this strongly inactivates cortisol production from abdominal fat and leptin resistance. This is one of the reasons I like my at-risk osteopenic patients who have already corrected their light defects to consider supplementing with sulfated DHEA before I ever touch them in surgery. My preference is to get them eating ***at least one seafood meal*** a day for 6 weeks prior to spine surgery that includes wild-caught seafood of some type from the ocean. It directly lowers cortisol levels and simultaneously increases the sex steroid hormones that protect the bone stock from further losses in the perioperative

period. High cortisol levels are consistently found in most American osteopenic due to LR. This can be offset by the surgeon by restoring DHEA, estrogen, progesterone, and testosterone to the upper quartile of normal adult youthful levels. Remember that these drugs are rarely on a hospital formulary. It means you need to have a doctor "reading the tea leaves" before you ever hit the operating room.

PREGNENOLONE STEAL SYNDROME ALERT = light stress or any other stressor like trauma

Progesterone has two major effects that are positive for bone. The first is that stops osteoclasts from resorbing newly laid down bone when the person is eating a high protein and fat diet that is good for bone formation. The second lesser known effect is that progesterone is thermogenic. It raises body temperature and helps us burn fat and improve our body composition by increasing our lean muscle mass to fat ratio. This lessens the chance that we become LR and IR and protects the newly laid down bone from bone resorption due to elevated cortisol. Progesterone also causes water retention which helps us absorb more AM sunlight.

Estrogen and testosterone are both anabolics for bone formation in humans. Most clinicians are fully aware of the risks of bone loss for post-menopausal women. Few still seem to be aware that andropause carries the same risks for men. Andropause and perimenopause also occur earlier chronologically when inflammation exists due to many causes. Less than 10% of men have had normal free and total testosterone levels in my clinic over the last ten years when they are tested. It is now routinely tested for in my clinic. In menopause, less than 20% of women are on bone protective hormonal replacement, because of the terribly flawed Women's Health Initiative Study done in the early 2000′s. Today, this study is misinterpreted and it has set back osteoporosis treatment tremendously in my view. Because of this study, even fewer women are on any progesterone replacement, which blocks

bone resorption. Fewer still are using testosterone creams for bone mass protection. I have never seen one pre-op osteocalcin level drawn in any osteopenic patient at risk for diagnosis or surveillance. I believe this is because it is not offered at most facilities nationally.

What is The Osteoporosis Rx Treatment

1. **Cortisol must be neutralized after its elevation can be found.** The most common reason is LR today in the USA from a SAD loaded in carbohydrates. LR nullifies Wolff's law. Diet modification to high fat and high protein paleolithic diet is treatment option number one in most cases. Renal osteodystrophy is one of the few cases where the protein has to be limited, but fats can be used liberally to support bone mass in this case. This is important for the H+ over deuterium effect needed for the TCA cycle. Marine-based seafood, pastured butter, cheeses from raw milk, natto (K2 source) and grass fed meats with pastured eggs, pastured pork bacon, and coconut oil is preferred. All the hormones that are anabolic for bone formation are derived from LDL cholesterol in our diet. Vegans should pay close attention to those biologic facts. PUFA's (outside of DHA) and carbohydrates should be extremely limited during treatment, to avoid future fractures because they generate inflammatory cytokines that favor disease progression and increase clotting risks from a DVT.
2. **Age and weight are not completely indicative of real bone risk.** Inflammation is, and it should be followed clinically to assess risk. Bone density testing is worthless unless a wrist module is added to it. I have had patients in their 20´s paralyzed from osteopenic fractures.
3. **Smoking carries a 100 fold risk of developing**

osteoporosis. It must cease for any treatment to work optimally

4. **Excessive alcohol drinking also elevates the risk.** More than 4 oz a day is a problem. I say cut it.
5. **I personally avoid all conventional osteoporotic drugs because of the side effect risks.** In surgical cases, I now completely avoid the use of all synthetic derived bone morphogenic proteins in older patients with osteoporosis.
6. **I use high dose Vitamin D3, K2, Magnesium, in doses** based upon lab data or MRI's and on the severity of the disease. This often varies after the surgery based upon how good or bad the bone appears clinically.
7. **Sometimes I will consider replacing some or all sex steroid hormones to the top quartile found in young adults based upon the variables in the case.** Bio-identical HRT is preferred. I avoid synthetic hormones at all costs due to the risk of blood clotting. Often this is tough because many physicians are not aware of the organic chemistry of why synthetic hormones are suboptimal for the human steroid receptor. If steroids are used IV B vitamins and C vitamins often help.
8. **Exercise is an excellent treatment for osteoporosis.** However, one must remember that if one has LR, exercise exacerbates the risk of fracture because Wolff's law is null and void. **The Exercise Rx (written below)** requires Wolff's law to be operational to work. Too often it is not. Exercise will increase growth hormone secretion which is very anabolic for bone mass accrual. Most older people have horrendous GH levels measured by IGF-1 levels. In people with IGF-1 levels below 100, I recommend the use of arginine, ornithine, turmeric, and resveratrol, because of all increase bone mass. Resveratrol increases bone morphogenic proteins directly.
9. **Walking is a great start for those who are debilitated.** I tell my patients to park far away from the doors to

facilitate walking. I encourage water aerobics because of its low impact and its good skeletal effects even when Wolff's law is null and void. I also encourage yoga and meditation for endogenous control of cortisol. Biofeedback is also a consideration if it is in the budget.

10. **Strict avoidance of NSAID's and steroids for all osteopenic or spine fusions due to bone mass losses.** These medications also cause a leaky gut and gut dysbiosis and is a major cause of persistent inflammation and bone loss.
11. **Any stressor should be aggressively treated.** I usually will double doses of D3, K2, and Mg during ICU or the preoperative times.
12. **In older patients, I trim back all meds that cause osteoporosis, and I advocate strongly for hormone replacement.** Progesterone is critical for women and testosterone for men. Estrogen and testosterone are added often to women's treatment plan by their PCP's or OB/GYN's
13. **I try to limit all forms of radiation exposure to all patients with osteopenia** because of its effects on bone stock.
14. **I have all thoracic fracture patients follow up with their lung specialists** because each fracture limits pulmonary functioning by 5-8% and is a major cause of disability.
15. **Any spine fracture should be aggressively treated surgically** as soon as it is diagnosed on STIR MRI.
16. **I keep an open dialogue with patients and family about bone risks going forward** and make sure they know what to discuss with their PCP going forward.
17. **An ounce of prevention really saves a point of cure with this disease.** Mobility is the key to optimal recovery. We want patients moving naturally as soon as possible to stimulate bone formation after the diet is optimized.
18. **I do not advocate any use of supplemental calcium with**

this disease because I mandate a change of diet and this diet provides ample DHA, magnesium, and calcium and there is ***no need for supplementation***. (Epi-paleo Rx)

19. **In severe cases, I will ask for an endocrine consult to consider Forteo and PTH if it is warranted.** This is quite rare but can be a huge help in complicated spine fractures in older patients.
20. **I advocate sun exposure for natural sulfated Vitamin D3 production** in patients with low 06/3 ratios.

Fall prevention and "The Exercise Rx"

After the diet is retooled to an Epi-paleo diet and the underlying leptin resistance is dealt with, everything should be done to prevent falls that can cause fractures. This is where exercise comes in. I am a major advocate of lifting weights for both men and women no matter their baseline condition. If the patient is wheelchair bound, they can lift dumbbells while they watch TV and wear weighted ankle and wrist bracelets. The reason is simple. This will restore bone faster than any single thing we can offer once the dietary problem is repaired. Men and women with osteoporosis need to take care not to fall down. Falls can break bones and are a major source of disability. Once mobility is limited, the death rate can begin to grow exponentially. The goal is to restore natural mobility as soon as possible in this disease.

Some reasons people fall are:

- Poor vision
- Poor balance
- Certain diseases that affect how you walk
- Some types of medicine, such as sleeping pills.
- Some tips to help prevent falls outdoors are:
- Use a cane or walker if you're unsteady
- Avoid rubber-soled shoes so you don't slip. Leather

shoes connect you to Earth.
- Walk on grass when sidewalks are slippery. Use leather shoes to walk on grass daily
- In winter, put salt or kitty litter on icy sidewalks. Use leather shoes as much as possible.

Some ways to help prevent falls indoors are:

- Keep rooms free of clutter, especially on floors
- Use plastic or carpet runners on slippery floors
- Wear low-heeled shoes that provide good support with leather soles.
- Do not walk in socks, stockings, or slippers. Bare feet are best.
- Be sure carpets and area rugs have skid-proof backs or are tacked to the floor
- Be sure stairs are well lit with amber lights and have rails on both sides
- Put grab bars on bathroom walls near tub, shower, and toilet
- Use a rubber bath mat in the shower or tub
- Keep an amber or red flashlight next to your bed
- Use a sturdy step stool with a handrail and wide steps
- Add more amber night lights in rooms
- Have a hardwired phone close to you so that you don’t have to rush to the phone when it rings and so that you can call for help if you fall. Avoid a cordless phone or mobile phone. If you do use these make sure you use a blue blocking shield on its LED face to avoid blue light frequencies.
- Water aerobics is the best set of exercises to use in the beginning for building backbone and muscle.
- Get 20 minutes of AM sunlight on as much of your skin as possible. Try to see every AM sunrise the rest of your life outside.

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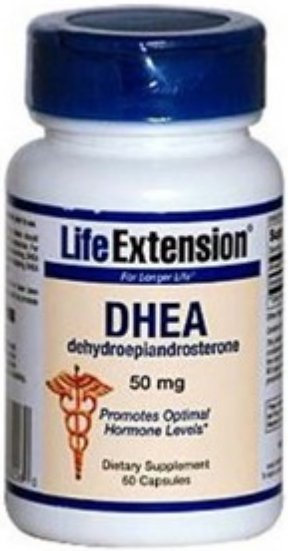		
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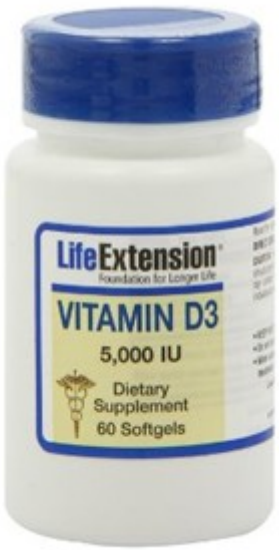	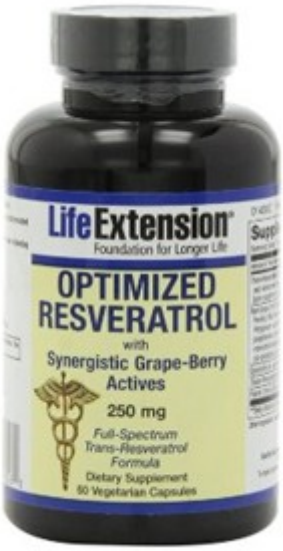	
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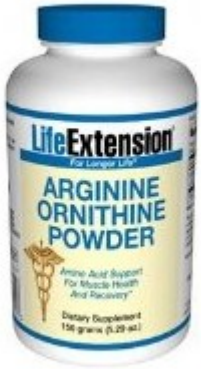		
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- Osteoporosis Part 1
- Osteoporosis 2: The Vitamin K2 Story
- Osteoporosis 3: Related Drugs and Diseases
- EMF 8: Quantum Bone
- Hormones 101: Clinical thoughts revealed
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