14 Signs You Might Have a Vitamin D Deficiency - Mercola March 2021

During cold and flu season, and the COVID-19 pandemic, it is essential to maintain healthy levels of vitamin D to help reduce your risk of viral and bacterial illness.[5,6] A blood test is the best way to determine your vitamin D levels, but here are some symptoms that may indicate your levels are low.

1.Aching muscles — Nearly half of all adults are affected by muscle pain.[7] Researchers believe most of those are deficient in vitamin D. Some studies have suggested that nerves have vitamin D receptors that affect the perception of pain. In one animal model, research demonstrated a vitamin D-deficient diet can induce deep muscle hypersensitivity that was not connected to low levels of calcium.[8]

2.Painful bones — Vitamin D regulates the level of calcium in your body, necessary to protect bone health.[9] Vitamin D deficiency can cause your bones to soften, called osteomalacia. This may be a precursor to osteoporosis.

3.Fatigue — This is a common symptom of a variety of different health conditions, including sleep deprivation. Researchers have found that supplementing cancer patients suffering from fatigue can improve their symptoms.[10]

In one study[11] using 174 adults with fatigue and stable medical conditions, the researchers found 77.2% were deficient in vitamin D. After normalizing their level, the fatigue symptoms improved significantly.

4.Reduced muscle performance — Vitamin D deficiency is as common in athletes as in others. Vitamin D is crucial for muscle development, strength and performance. Older adults taking a vitamin D supplement have a reduced risk of falls and improved muscle performance.[12]

Correction through oral supplementation or sensible sun exposure may reduce symptoms of stress fractures, musculoskeletal pain and frequent illness. Vitamin D also has a direct effect on muscle performance. In one paper from the Journal of the American Academy of Orthopaedic Surgeons, the author wrote:[13]

"Higher serum levels of vitamin D are associated with reduced injury rates and improved sports performance. In a subset of the population, vitamin D appears to play a role in muscle strength, injury prevention, and sports performance."

5.Brain health — Vitamin D is also essential for your brain health. Symptoms of deficiency can include dementia caused by an increase of soluble and insoluble beta-amyloid, a factor in Alzheimer's disease.[14] Research has also found an association with depression[15] that may be associated with the function of vitamin D buffering higher levels of calcium in the brain.[16]

Vitamin D deficiency in pregnant women can increase the risk of autism and schizophrenic-like disorders in the baby.[17] One study of people with fibromyalgia found a vitamin D deficiency was more common in those who had anxiety and depression.[18] Another looked at vitamin D deficiency in obese subjects and found a relationship between low levels of vitamin D and

depression.[19]

6.Poor sleep — The mechanism linking vitamin D and poor sleep quality has not been identified. But research has found people with low levels of vitamin D have poor quality sleep and a higher risk of sleep disorders.[20]

7.Sweaty head — Excessive sweating, especially on your head, or a change in your pattern of sweating, can indicate a vitamin D deficiency.[21]

8.Hair loss — Vitamin D is crucial to the proliferation of keratinocytes and plays an important role in your hair cycle. The vitamin D receptor appears to play a role in the anagen phase of hair growth, leading researchers to conclude, "Treatments that upregulate the vitamin D receptor may be successful in treating hair disorders and are a potential area of further study."[22]

9.Slow-healing wounds — Chronic wounds are a major public health challenge.[23] In the U.S. 2% of the population is affected by chronic wounds and it is estimated to account for 5.5% of the cost of health care in the U.K. NHS. Vitamin D promotes wound healing and the creation of cathelicidin, a peptide that fights wound infections.[24]

10.Dizziness — Evidence from animal models suggests that vitamin D is critical in the development of the inner ear,[25] which affects balance and coordination. Analysis of people with vestibular neuritis, characterized by vertigo, showed lower serum vitamin D levels than in people without vestibular neuritis.[26]

11.Heart problems — Clinical studies have shown that vitamin D3 improves

circulation and can help improve high blood pressure.[27] In one study[28] researchers discovered that vitamin D3 also has a significant effect on the endothelial cells that line your cardiovascular system. They found that it helped balance concentrations of nitric oxide and peroxynitrite, which improved endothelial function.

12.Excess weight — How vitamin D affects obesity has not been identified. However, data do show there is a high probability of deficiency in people who are obese.[29]

13.Recurring infections — There have been multiple epidemiological studies that show vitamin D deficiency can increase the risk of infection and raise the severity, particularly in respiratory tract infections.[30] Multiple studies have demonstrated that vitamin D deficiency increases the potential risk for severe disease and mortality, especially in those who are critically ill.[31]

14.Reduced cognitive function — Data show that vitamin D deficiency increases your risk of dementia twofold[32] and raises your risk of impaired cognitive function.[33]