



Women's Health Library

## Vitamin D and Low Back Pain



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Many people in northern climates not only have to deal with colder weather and shorter winter days, they also have a much higher incidence of vitamin D deficiency. This is because vitamin D is made from a precursor molecule produced when the skin is exposed to sunlight. Ergo, the less sunlight one is exposed to, the greater the chance of a vitamin D deficiency.

Why should we be concerned over vitamin D deficiency? Well, besides being important for bone and skin health and being a vital factor in calcium absorption, one recent study has linked vitamin D supplementation to a reduction in low back pain. That's right, low back pain, perhaps the most common complaint among adults. One would think such a study would naturally be conducted in a light-deprived region such as Scandinavia, Siberia or Alaska. But believe it or not this riveting medical information came from the Armed Forces Hospital in Riyadh, Saudi Arabia.

At first glance, one might find it a bit odd to conduct a study on vitamin D deficiency in the middle of the desert. Granted, it does not take much sun exposure to get adequate amounts of vitamin D, and there certainly is no shortage of sun in Saudi Arabia, but for a variety of cultural reasons most residents of that region spend the vast majority of their time inside and keep their bodies completely covered while outdoors.

Surprisingly, 83% of the people in this study were severely vitamin D deficient. The study was done on 360 people, 324 women and 36 men between the ages of 15 and 52. All were sufferers of low back pain for at least six months with no obvious reason (e.g. occupational stress, pre-existing back condition etc.). The subjects were given 5000 or 10,000 IU per day of vitamin D (25-hydroxycholecalciferol) for three months. After three months of treatment, 95% of the subjects showed clinical improvement in symptoms, including 100% of those said to have vitamin D deficiency.

It is not certain why those who were not deficient experienced an improvement in symptoms. Some may be a placebo effect, or some may have already had a slight deficiency that just did not register during laboratory tests. Yet there is no definite conclusion as to why the vitamin D regimen the patients were subjected to was effective.

We can offer only suggestions. Vitamin D is partially responsible for maintaining adequate calcium levels in the blood and also enhances calcium absorption in the intestines. Inadequate calcium can lead to weakening of the vertebrae, and consequently some low back pain. Calcium is also critical for smooth muscle contraction which may not function properly in the lower back without adequate vitamin D. It may also be that other muscles and skeletal regions are weakened by the deficiency, thus putting more pressure on the low back. These are just a few possible reasons for the success of this study, but there is no definite mechanism of action cited.

This study will undoubtedly lead to more studies which may shed more light on this possible link. Until then, to remain on the safe side, it is probably a good idea to make sure you get enough vitamin D in the cold, dark winter months. It is important to remember that this study was done using 5000 and 10,000 IU of vitamin D, which is over 10 times the recommended daily value. Though a multivitamin may supply 400IU (100% RDV) of vitamin D, it may be advantageous to take a vitamin D supplement in addition to maximize its benefits.