

Vitamin D Levels, Absorption and Lower Back Pain After Failed Surgery

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In a small study of nine patients with [failed back surgery](#) outcomes caused by either disc degeneration or spondylolisthesis, the authors compared them with seven age- and diagnosis-matched controls who responded to conservative care, did not require surgery and were not in chronic pain. When the researchers tested vitamin D, they discovered the mean serum 25-hydroxycalciferol levels in the nine failed-surgery patients was 17.9 ng/ml, compared to 40.6 ng/ml in the seven controls who responded to conservative care and were no longer in pain.

The Visual Analog Scale (VAS) was used to score pain. Vitamin D replacement was given to the nine patients in two three-month stages separated by retesting. Stage 1 was 10 days at 20,000 IU of vitamin D2, followed by 80 days of 600 IU of vitamin D3. Stage two was 600 IU of vitamin D3 for 90 days, at which time serum levels were tested for a third time. (See Table 1) In this small study, higher vitamin D levels were associated with lower pain scores at six months (based on VAS scores):

- Subject #2 (male, age 50); serum vitamin D 51 ng/ml; VAS score: 2
- Subject #6 (male, age 33); serum vitamin D 50 ng/ml; VAS score 2
- Subject #9 (male, age 30); serum vitamin D 39 ng/ml; VAS score 4
- Subject #5 (female, age 47); serum vitamin D 46 ng/ml; VAS score 2
- Subject #1 (female, age 29); serum vitamin D 41 ng/ml; VAS score 4
- Subject #8 (male, age 45); serum vitamin D 38 ng/ml; VAS score 5
- Subject #3 (male, age 25); serum vitamin D 38 ng/ml; VAS score 7
- Subject #4 (female, age 40); serum vitamin D 36 ng/ml; VAS score 5
- Subject #7 (male, age 54); serum vitamin D 34 ng/ml; VAS score 7

The ability to absorb vitamin D2 and D3 differs widely from person to person. This small study provides an excellent example that there is no "one dose fits all" approach when treating vitamin D deficiency. (See Table 2)

deficient levels of vitamin D on a blood test. There is ongoing debate regarding adequate, normal, optimal, elevated and excessive levels. Currently, blood levels of serum 25-hydroxycholecalciferol, aka 25-hydroxyvitamin D3, aka 25(OH) D, are characterized as follows: optimal: 50-70 nanograms per milliliter (ng/ml) or 125-185 nanomoles per liter (nmol/L); normal: 30-70 nanograms per milliliter (ng/ml) or 75-185 nanomoles per liter (nmol/L); low: < 30 nanograms per milliliter (ng/ml) or < 75 nanomoles per liter (nmol/L); and deficient: < 20 nanograms per milliliter (ng/ml) or < 50 nanomoles per liter (nmol/L). Note: Optimal and normal are not universally established or agreed upon. Hopefully, these grey zones will be resolved by the research generated by increased interest (in vitamin D) that is currently underway. Even when the normal laboratory levels are better established, the best providers will not make the mistake of treating a test result while ignoring symptoms, complaints, history and exam findings.