

POSTER PRESENTATION

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# P02.64. Vitamin D sufficiency is necessary for integrative treatment-associated improvements in chronic pain status

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## Purpose

To examine the relationship between improved vitamin D status and reported severity of chronic pain.

## Methods

Prospective observational study over 12 weeks of 252 patients with pain of any source lasting more than 6 months who sought integrative medicine evaluation and treatment at one of 9 Bravenet clinical sites across the United States. Interventions were not mandated. Baseline vitamin D status was reported to each clinician. Treatment options included conventional therapies as well as acupuncture, nutrition, massage and mind-body skills training. Measurements included the Brief Pain Inventory and 25-OH-vitamin D status.

## Results

A total of 252 adults met eligibility criteria. Mean 25-OH-vitamin D levels and standard deviations at the start and 12 weeks later for all participants were 33.43 (17.05) and 39.58 (16.29). ( $p < 0.0001$ ). The subset of low back pain patients demonstrated similar values of 32.71 (14.34) increasing after 12 weeks to 39.19 (13.26) ( $p < 0.0001$ ). Of all participants, 153 (60.7%) achieved 25-OH-vitamin D levels above the 2010 international recommendation of  $\geq 30$  ng/ml and 99 (39.3%) did not. Of all 136 back pain participants, 90 (66.2%) achieved levels  $\geq 30$  ng/ml and 46 (33.8%) did not. Median average pain scores decreased from 5 to 4 during the study. Regardless of the integrative therapies applied, achievement of a serum level  $\geq 30$  ng/ml was necessary for significant improvement in average pain ( $p = 0.0018$  for all patients,  $p = 0.022$  for all back pain).

## Conclusion

Chronic pain patients who sought integrative medicine demonstrated a high incidence of vitamin D deficiency. In the setting of additional treatments, serum levels  $\geq 30$  ng/ml were required for significant improvement in average pain scores. Failure to achieve a serum level  $\geq 30$  ng/ml represents a confounder of any therapeutic intervention in both clinical practice and clinical trials for chronic pain including chronic low back pain.

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