

POSTER PRESENTATION

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# P02.101. Vitamin D status of female healthcare employees of childbearing age

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## Purpose

To examine the relationship between vitamin D status, reported vitamin D intake and body mass index in female health care employees.

## Methods

Prospective observation study of 10,646 employees of a Midwestern integrated health care system who were measured for 25-OH-vitamin D by CLIA technology.

## Results

A total of 5,628 women (aged 15-49) met eligibility criteria. Of these, 1,710 (32.4%) did not meet 2010 ACOG or IOM vitamin D guidelines for vitamin D sufficiency ( $\geq 20$  ng/ml); 3,684 (65.5%) did not meet 2010 international guidelines ( $\geq 30$  ng/ml); and 4,874 (86.6%) did not meet 2011 Endocrine Society guidelines (40-60 ng/ml). Only 2,644 (46.97%) reported taking any vitamin D. For those participants who reported vitamin D<sub>3</sub> intake equal to that found in prenatal and multivitamins (200-400 IUs) ( $n = 430$ ), 17.7% had 25-OH-vitamin D levels  $<20$  ng/ml, 59.5% had levels  $<30$  ng/ml, and 85.3% had levels  $<40$  ng/ml. Mean 25-OH-vitamin D serum levels and standard deviations for higher reported vitamin D<sub>3</sub> daily intakes of 1,001-2,000 IUs, 2001-3,000 IUs and 3,001-4,000 IUs and  $>4,000$  IUs were 34.09 ng/ml (12.79), 39.52 ng/ml (16.16), 38.57 ng/ml (17.06) and 37.98 ng/ml (16.40), respectively. For all of these reported intakes, women with a BMI  $\geq 30$  exhibited significantly lower 25-OH-vitamin D status compared to those women with BMI  $< 30$  ( $p < .0001$ ).

## Conclusion

Female healthcare workers of child bearing age demonstrate a high incidence of vitamin D deficiency. Daily prenatal or multivitamin supplementation does not

ensure adequate 25-OH-vitamin D levels. A BMI  $\geq 30$  represents a substantially increased risk of suboptimal 25-OH-vitamin D status. Reported daily intake of  $>4,000$  IUs did not result in elevated serum levels of vitamin D. These findings have substantial public health implications as vitamin D deficiency has been associated with increased obstetrical and perinatal risks including gestational diabetes mellitus, premature delivery and emergent c-section.

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