

2/10/2025

Chairman Ruby and the members of the House Human Services committee,

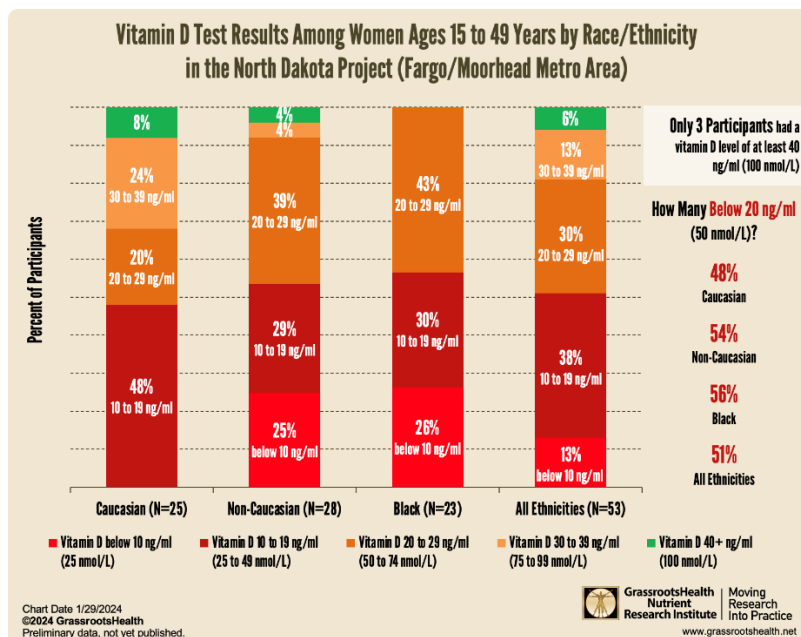
Thank you for the opportunity to testify today on behalf of proposed Concurrent Resolution 3014 regarding the prioritization of primary prevention strategies to address vitamin D deficiency in the state of North Dakota.

Vitamin D, a fat-soluble nutrient, is crucial for maintaining bone health, regulating the immune system, and supporting cellular functions throughout every cell in the body. Despite its critical role in overall health, it is estimated that a significant portion of the population is deficient in vitamin D. This deficiency is particularly prevalent among individuals with limited sun exposure, those living in northern latitudes, older adults, and people with darker skin tones.

In our state, the ray of the sun needed to generate vitamin D doesn't hit the earth for six months of the year from October to April making North Dakotans more at risk for vitamin D deficiency than individuals living at other latitudes.

Preliminary data from GrassrootsHealth Nutrient Research Institute's North Dakota Vitamin D Project shows that overall, 50% of North Dakotans are considered vitamin D deficient <20 ng/mL with 20% being dismally lower than 10 ng/mL vs. the national average 26 ng/mL. Furthermore, project data shows that 90+% are below the scientific recommended serum concentrations of 40-70 ng/mL (Grant et al., 2025). See <https://www.grassrootshealth.net/blog/dismal-vitamin-d-results-among-participants-north-dakota-project/> for 2022 preliminary data.

In 2024, the North Dakota Vitamin D Project found dismal results again among childbearing age women (overall 51% below 20 ng/mL), with a large disparity between Caucasian and non-Caucasian women as 25% of non-Caucasian women had levels less than 10 ng/mL (n=53) (Sanford et al., 2024). If these women became pregnant, these levels would be dangerous to the health of mom and baby as the demand for vitamin D increases significantly during pregnancy.



Health Benefits of Vitamin D

Research indicates that adequate vitamin D levels are associated with a wide range of health benefits beyond bone health, such as:

1. Cardiovascular disease, including hypertension, stroke, myocardial infarction and migraine headaches
2. Cancer prevention and survival
3. Immune system support and COVID-19
4. Chronic lower respiratory disease
5. Cognitive and mental health, including Alzheimer's disease and dementia, schizophrenia, depression, anxiety, ADHD, autism, and more
6. Types 1 and 2 Diabetes
7. Chronic kidney disease
8. Bone and oral health
9. Autoimmune diseases
10. Pregnancy, birth and infancy outcomes, such pre-eclampsia and preterm birth
11. All-cause mortality

Why put forth a concurrent resolution?

Increasing awareness of vitamin D deficiency can improve population health and educate both the public and healthcare professionals. In addition, research shows vitamin D deficiency is closely linked with increased healthcare costs. As far back as the early 2000's, the Veterans Administration system identified that addressing vitamin D deficiency lowered in-patient healthcare costs by 39-50% (Peiris et al., 2008; Bailey et al., 2012). Therefore, addressing vitamin D deficiency has the potential to significantly reduce state Medicaid and NDPERS costs and preserve healthcare dollars for North Dakotans and decrease human suffering.

What are the potential outcomes in human terms?

- Improved cognitive performance in North Dakotans from birth to our elderly residents, more focus for school-age children and adolescents
- Improved mental health outcomes and decreased suicide rates
- Improved prenatal and neonatal outcomes for moms and babies
- Increased chance of surviving the ambulance ride because of decreased intercranial swelling and endothelial stability of blood vessels
- Increased chance of surviving a heart attack, stroke or cancer
- Decreased surgical and hospital acquired infections
- Reduced sick days and workplace injuries

In conclusion, enhancing the health of North Dakota residents requires the implementation of policies that support primary prevention efforts. This includes acknowledging that North Dakota's geographic location poses a risk factor for vitamin D deficiency for every resident of the state. Therefore, it is essential to prioritize addressing vitamin D deficiency across all demographic groups to improve patient outcomes, enhance population health, and reduce healthcare costs.

Thank you for your time and consideration. I am happy to answer any questions.

Beth S. Sanford, DNP, RN

Lead researcher for the GrassrootsHealth Nutrient Research Institute's North Dakota Vitamin D Project
 Vitamin D researcher & advocate <https://www.researchgate.net/profile/Beth-Sanford>
 President, North Dakota Nurses Association

REFERENCES

Related to cost-effectiveness

<https://www.grassrootshealth.net/blog/results-vitamin-d-testing-programs/> (Highlights the testing program at Vibra Hospital in Fargo, ND)

<https://www.grassrootshealth.net/blog/vitamin-d-testing-reduces-healthcare-costs-2/> (Highlights a cost comparison of six Veterans Affairs medical centers with 400,000 patients)

Published Scholarly Articles

Bailey, B. A., Manning, T., & Peiris, A. N. (2012). Vitamin D testing patterns among six Veterans Medical Centers in the Southeastern United States: links with medical costs. *Military medicine*, 177(1), 70–76.
<https://doi.org/10.7205/milmed-d-11-00204>

Grant, W. B., Wimalawansa, S. J., Pludowski, P., & Cheng, R. Z. (2025). Vitamin D: Evidence-Based Health Benefits and Recommendations for Population Guidelines. *Nutrients*, 17(2), 277. <https://doi.org/10.3390/nu17020277>