Scientific Overview — Minerals, Immunity & HPV

1. Plasma Micronutrients & HPV Clearance (Sedjo et al., 2003)

Higher levels of retinol, carotenoids, tocopherols, folate, and B12 were associated with increased clearance of oncogenic HPV. Suggests nutrient sufficiency strengthens immune surveillance.

2. Micronutrients, Minerals & HPV Progression (Ferrari et al., 2023)

Review indicates zinc, selenium, iron, and calcium may support resistance to HPV persistence. Mineral imbalances can weaken cervical tissue and immunity.

3. Magnesium Intake & HPV Risk (Chen et al., 2025)

Higher magnesium intake correlated with significantly reduced HPV infection risk (up to 29.7% lower). Demonstrates mineral status affects viral vulnerability.

4. Dietary Minerals & Cervical Cancer Risk (Wang et al., 2021)

Low calcium and trace minerals were linked to higher risk of cervical cancer, indicating mineral deficiency compromises cervical terrain integrity.

5. Trace Elements & Cervical Health (Sravani et al., 2023)

Trace elements such as copper, selenium, zinc, and manganese influence immune function and cervical tissue behavior. Dysregulated levels correlate with HPV-related pathology.

6. Vitamin K Intake & HPV Status (NHANES, 2022)

Higher Vitamin K intake up to a threshold lowered HPV infection risk. Shows overall nutrient sufficiency influences viral susceptibility.

Overall Takeaway

Emerging research supports that mineral and nutrient sufficiency plays a crucial role in cervical immunity, lymphatic function, tissue repair, and the body's ability to clear HPV. Therapeutic mineral balancing, guided by HTMA, optimizes the terrain necessary for effective viral surveillance, detoxification, and mucosal healing.