**Dietary Nutrients May Defend Against HPV**

**High levels of carotenoids may enhance clearance of HPV infection and avoid persistent infection.**

**BY SHERRY BOSCHERT**

**San Francisco Bureau**

**VANCOUVER, B.C. — Women who eat their vegetables and take vitamins may have a better chance of avoiding or clearing human papillomavirus infection, according to new research presented at the annual meeting of the American College of Obstetricians and Gynecologists.**

The lifetime risk of ovarian cancer in the general population is about 1.7%, no higher than the general population. However, women with high serum levels of vitamins E or A were twice as likely to develop incident HPV infection, compared with women with low levels of these nutrients, said Dr. Donghui Lu, M.D., University of Hawaii, Manoa. The investigators analyzed data on 242 women who had complete records from at least four clinical visits, part of a larger longitudinal study at three clinics and two university-based health services. They categorized serum micronutrient levels as either low or high. Women with low serum levels of vitamins E or A were twice as likely to develop incident HPV infection, compared with women with high levels of these nutrients. The HPV test results went from negative to positive from one visit to the next in 19% of women with low serum levels and 10% of those with high serum levels. Incident HPV infection at one visit persisted in a positive HPV test at the next clinical visit in 20% of women with high serum levels of lutein or zeaxanthin, carotenoids that are abundant in green, leafy vegetables. HPV persistence was seen in 31% of women with low levels of these carotenoids, a 60% increased risk with low serum levels of vitamins A and E.

**HPV persisted in 22% of women with high levels of β-cryptoxanthin (a carotenoid found in a variety of tropical fruits and nectarines), compared with 38% of women with low levels of this nutrient, who had a 70% increased risk for persistence.**

The risk for HPV persistence doubled with low levels of α-carotene and was 60% higher with low levels of lycopene, compared with having high levels of these nutrients. Dr. Goodman speculated that the differences might be related to the antioxidant functions of these nutrients, or to the interface between cytokine levels and local levels of antibodies. "We know that the micronutrient levels do enhance the immune response," he said.

"Interventions that might play a role. A variety of nutrients affect the genes associated with transcription. It's also possible that antioxidants could directly affect HPV viral load and cell proliferation."