Cervical Cancer

Observational Study: When compared to 227 controls, dietary histories from 189 women aged 20-74 with diagnosed cervical cancer showed that frequent consumption of dark green and yellow vegetables and fruit juices was associated with reduced risk of cervical cancer (Verreault R et al. A case-control study of diet and invasive cervical cancer. Int J Cancer 43:1050-4, 1989).

Plasma folate levels may be reduced.


Negative Observational Study: 330 pts. with newly diagnosed Stage I and II invasive cervical cancer in 4 Latin American countries were compared to 565 controls. Mean serum folate levels of pts. were similar to those of controls. No associations were observed between quartiles of serum folate and the risk of cervical cancer after adjustment for other risk factors, and no interactions with established risk factors were observed. Serum folate levels were unrelated to risk among women with recent or extended oral contraceptive usage or multiple pregnancies, factors that could compromise folate nutriture. Also, mean serum folate levels were similar by stage of disease (Potischman N, Brinton LA, Laiming VA, et al. A case-control study of serum folate levels and invasive cervical cancer. Cancer Res 51(18):4785-9, 1991).
**Observational Study:** In a prospective study, 78 women with untreated cervical cancer, when compared to 240 healthy controls, were found to have significantly lower mean values of plasma folate (Orr JW Jr et al. Nutritional status of patients with untreated cervical cancer. II. Vitamin assessment. Am J Obstet Gynecol 151(5):632-5, 1985).

**Vitamin A levels may be reduced.**

**Observational Study:** In a prospective study, 78 women with untreated cervical cancer, when compared to 240 healthy controls, were found to have significantly lower mean values of plasma vitamin A (Orr JW Jr et al. Nutritional status of patients with untreated cervical cancer. II. Vitamin assessment. Am J Obstet Gynecol 151(5):632-5, 1985).

**Observational Study:** Compared to controls, women with cervical intraepithelial neoplasia had a statistically lower level of serum vitamin A (p=0.1), although dietary profiles did not reveal a significant difference (Bernstein A, Harris B. The relationship of dietary and serum vitamin A to the occurrence of cervical intraepithelial neoplasia in sexually active women. Am J Obstet Gynecol 148(3):309-12, 1984).

**Vitamin C levels may be reduced**

**Observational Study:** When compared to 227 controls, dietary histories from 189 women aged 20-74 with diagnosed cervical cancer showed that there was an inverse relationship between vitamin C intake and the risk of cervical carcinoma. The adjusted relative risk was 0.5 for the highest quartile of intake compared to 1.0 for the first quartile (Verreault R et al. A casecontrol study of diet and invasive cervical cancer. Int J Cancer 43:1050-4, 1989).

**Review Article:** Low vitamin C status is associated fairly consistently with both cervical cancer and its precursors (Potischman N, Brinton LA. Nutrition and cervical neoplasia. Cancer Causes Control 7:113-26, 1996).
**Observational Study:** In a prospective study, 78 women with untreated cervical cancer, when compared to 240 healthy controls, were found to have significantly lower mean values of plasma vitamin C (Orr JW Jr et al. Nutritional status of patients with untreated cervical cancer. II. Vitamin assessment. Am J Obstet Gynecol 151(5):632-5, 1985).

**Observational Study:** Plasma vitamin C levels were examined in 46 women with either 2 consecutive suspicious Pap smears or 1 positive Pap smear and compared to normal controls. The mean plasma vitamin C level in cases was about 1/2 that of the controls. While plasma vitamin C was low in women with severe dysplasia or cervical cancer, it was even lower in women with severe dysplasia and lowest in women with inflammatory cervical disease (Romney SL et al. Plasma vitamin C and uterine cervical dysplasia. Am J Obstet Gynecol 151:976-80, 1985).

**Reduced Vitamin E may increase cancer risk.**

**Observational Study:** When compared to 227 controls, dietary histories from 189 women aged 20-74 with diagnosed cervical cancer showed that women with the highest vitamin E intake had 1/3 the risk of those with a low vitamin E intake (Verreault R et al. A case-control study of diet and invasive cervical cancer. Int J Cancer 43:1050-4, 1989).

**Observational Study:** Compared to controls, plasma alphatocopherol levels of women with cervical cancer were significantly decreased (Palan PR et al. Plasma levels of antioxidant beta-carotene and alpha-tocopherol in uterine cervix dysplasias and cancer. Nutr Cancer 15:13-20, 1991).

**Reduced iron stores may increase cancer risk.**

**Observational Study:** 102 low-income urban women diagnosed with cervical intraepithelial neoplasia (CIN) were compared to 102 women matched by age, race, and clinic with normal Pap smears. In a comparison of the lowest to the highest quartile of serum ferritin levels and controlling for smoking and other cancer risks, **high serum ferritin had a protective effect against cervical cancer.** There was also an inverse correlation between dietary iron intake and cervical cancer risk (Amburgey C, VanEenwyk J, Davis F, et al. Undernutrition as a risk factor for cervical intraepithelial neoplasia: A case-control analysis. Nutr Cancer 20:51-60, 1993).

**Beta-carotene**

**Observational Study:** When compared to 227 controls, dietary histories from 189 women aged 20-74 with diagnosed cervical cancer showed that a high intake of beta-carotene was associated with reduced risk for cervical cancer, while dietary intake of retinol was not associated with reduced risk (Verreault R et al. A case-control study of diet and invasive cervical cancer. Int J Cancer 43:1050-4, 1989).

**Observational Study:** In a case-control study of 191 pts. and 191 age-matched controls, intake of dietary beta-carotene (in carrots and green vegetables) was inversely and strongly related to the risk of cervical cancer. However, consumption of retinoids (in milk, liver and meats) had no effect on cervical cancer risk, suggesting that either dietary beta-carotene or some related aspect of a vegetable-rich diet is protective (La Vecchia C et al. Dietary vitamin A and the risk of invasive cervical cancer. Int J Cancer 34:319-22, 1984).
**Carotenoids (all)**

**Review Article:** Low carotenoid status is associated fairly consistently with both cervical cancer and its precursors (Potischman N, Brinton LA. Nutrition and cervical neoplasia. Cancer Causes Control 7:113-26, 1996).

**Beta-carotene, Canthaxanthin, and Lycopene**


**Observational Study:** Compared to controls, plasma betacarotene levels of women with cervical cancer were significantly decreased (Palan PR et al. Plasma levels of antioxidant betacarotene and alpha-tocopherol in uterine cervix dysplasias and cancer. Nutr Cancer 15:13-20, 1991).

**Beta-carotene**

**Experimental Study:** 30 pts. with cervical intraepithelial neoplasia stage I or II were treated with beta-carotene 30 mg daily for 6 months. The response rates were 60%, 70% and 33% at 3, 6 and 12 mo., respectively. There were significant increases noted in the beta-carotene levels of the vaginal mucosa compared to baseline and a significant correlation was noted between serum and vaginal beta-carotene levels, suggesting that serum levels can be used for monitoring purposes (Manetta A et al. b-carotene treatment of cervical intraepithelial neoplasia: a phase II study. Cancer Epidemiol Biomark Prevent 5:929-32, 1996).

**Observational Study:** The vitamin A and beta carotene intake as well as cellular retinol binding protein (CRBP) levels were assessed for 49 women with dysplastic changes or carcinoma in situ (CIS) and 49
matched controls. Women consuming less than ave. vitamin A and beta carotene were 3 times as likely to develop severe dysplasia and 2 3/4 times as likely to develop CIS. CRBP levels in the cervical tissue samples were inversely correlated with the severity of the dysplasia (Wylie-Rosett JA et al. Influence of vitamin A on cervical dysplasia and carcinoma in situ. Nutr Cancer 6(1):49-57, 1984).