

Table S1. Characteristics of the studies included in the final analysis (n = 22).

Study (reference)	Journal	Country	Years enrolled	Participants (range of age: years)	Exposures measured	Adjustments	
Hospital-based case-control study (n = 15)							
1	Harris et al., 1986 (7)	Br J Cancer	UK	1975-1979	113 cervical cancer (43 severe dysplasia, 38 CIS, and 32 invasive cancer) cases and 226 controls	Vitamin A (serum level, µg/l): ≥655 vs. ≤428 Beta-carotene (serum level, µg/l): >620 vs. ≤150	Age stratification, number of sexual partners, current smoking status, current usage of oral contraceptives, and social class
2	Cuzick et al., 1990 (8)	Br J Cancer	UK	1984-1988	70 CIN (30 CIN I and 40 CIN III) cases and 45 controls (16-40)	Vitamin A (serum level, mg/l): ≥711 vs. ≤425 Vitamin E (serum level, mg/l): ≥9059 vs. ≤5726	Number of partners, age at first intercourse, smoking and oral contraceptive use
3	Herrero et al., 1991 (9)	Am J Epidemiol	4 Latin American countries	1986-1987	748 invasive cervical cancer cases and 1411 controls (<70)	Vitamin A (dietary intake, µg): ≥1830 vs. <217 Vitamin C (dietary intake, mg): ≥314 vs. <153 Beta-carotene (dietary intake, µg): ≥6154 vs. <2289	Age, study site, age at first intercourse, number of sexual partners, number of pregnancies, detection of HPV 16/18, interval since last cervical Pap smear, number of household facilities, and dietary beta-carotene
4	Potischman et al., 1991 (10)	Cancer Res	4 Latin American countries	1986-1987	330 early stage invasive cervical cancer cases and 565 controls (<70)	Folate (serum level, ng/ml): >6.00 vs. <3.33	Age, number of sexual partners, age at first sexual intercourse, number of pregnancies, presence of HPV 16/18, interval since last Pap smear, and number of household facilities

5	VanEenwyk et al, 1991 (11)	Int J Cancer	US	1987-1989	102 CIN cases and 102 controls (18-49)	Beta-carotene (dietary intake, quartile): 4th vs. 1st	Total caloric intake, current smoking status, monthly personal income bracket, number of sexual partners, quartile of dietary vitamin C, frequency of Pap smear, ever use of spermicidal contraceptive agents, self-reported history of genital warts, and Quetelet index
6	VanEenwyk et al, 1992 (12)	Cancer Epidemiol Biomarkers Prev	US	1987-1989	102 CIN cases and 102 controls (18-49)	Vitamin C (dietary intake, quartile): 4th vs. 1st Folate (dietary intake, quartile): 4th vs. 1st	Calories, current smoking status, monthly personal income, frequency of cervical smear, any use of spermicidal contraceptive agents, self-reported history of genital warts, quartile of Quetelet index, calories, and natural log of number of sexual partners
7	Kwasniewska et al, 1997 (13)	Eur J Gynaecol Oncol	Poland	1993-1996	228 cervical dysplasia cases and 168 controls	Folate (serum level, $\mu\text{mol/l}$): >26.05 vs. <20.24	Age at 1st intercourse, number of sexual partners, parity, cigarette smoking, and oral contraceptive use
8	Kwasniewska et al, 1997 (14)	Nutr Cancer	Poland	1993-1996	228 cervical dysplasia cases and 168 controls	Vitamin E (serum level, $\mu\text{mol/l}$): >17.95 vs. <7.65	Age at 1st intercourse, number of sexual partners, parity, cigarette smoking, and oral contraceptive use

9	Goodman et al, 1998 (15)	Cancer Epidemiol Biomarkers Prev	US	1992-1996	147 biopsy-confirmed SIL cases and 191 controls (18-65)	<p>Vitamin A/10 (plasma, ng/ml)*: >73.7 vs. ≤50.7</p> <p>Vitamin C × 100 (plasma level, mg/ml)*: ≥179 vs. >182</p> <p>Vitamin E/100 (plasma level, ng/ml)*: >116 vs. ≤75.4</p> <p>Beta-carotene (plasma level, ng/ml): >330 vs. ≤103</p> <p>Lycopene (plasma level, ng/ml): >406 vs. ≤231</p>	Age, ethnicity, tobacco smoking, alcohol drinking, and HPV detection by PCR dot-blot hybridization
10	Ho et al, 1998 (16)	Int J Cancer	US	1992-1994	378 CIN cases and 366 controls	Vitamin C (plasma level, mg/dl): ≥0.803 vs. <0.803	HPV positivity, age, ethnicity, annual household income and current smoking status.
11	Nagata et al, 1999 (17)	Br J Cancer	Japan	1995-1996	152 cervical dysplasia cases and 152 controls (≤55)	<p>Vitamin A (dietary intake, µg; tertile): 3rd vs. 1st</p> <p>Vitamin E (serum level, µmol/l; tertile): 3rd vs. 1st</p> <p>Beta-carotene (serum level, µmol/l; tertile): 3rd vs. 1st</p> <p>Lycopene (serum level, µmol/l; tertile): 3rd vs. 1st</p>	HPV infection and smoking

12	Yeo et al, 2000 (18)	Nutr Cancer		US	1994-1997	302 CIN (190 CIN and 112 CIN II/III) cases and 326 controls (18-45)	<p>Vitamin A (serum level, mg/l): >0.4465 vs. <0.3186</p> <p>Vitamin C (serum level, mg/dl): >1.30 vs. <0.93</p> <p>Vitamin E (serum level, mg/l): >9.59 vs. <6.836)</p> <p>RBC Folate (serum level, ng/ml): >231 vs. <124.6</p>	HPV status, age, annual family income, current residence, and lifetime number of sexual partners
13	Goodman et al, 2001 (19)	Cancer Epidemiol Biomarkers Prev		US	1992-1996	150 SILs cases and 179 controls (18-84)	<p>Vitamin B12 (dietary intake, ug/day:quartile): 4th vs. 1st</p> <p>Folate (dietary intake, ug/day:quartile): 4th vs. 1st</p>	Age, ethnicity, tobacco smoking (ever vs. never), alcohol drinking (ever vs. never), number of sexual partners before 20 (continuous), and HPV detection by PCR dot-blot hybridization (yes vs. no)
14	Shannon et al, 2002 (20)	Cancer Control	Causes	Thailand	1991-1993	184 cervical cancer (50 CIS and 134 invasive cancer) cases and 509 (384 hospital and 125 clinic) controls	<p>Vitamin A (dietary intake, servings/day): 4th vs. 1st</p> <p>Vitamin C (dietary intake, servings/day): 4th vs. 1st</p> <p>Vitamin E (dietary intake, servings/day): 4th vs. 1st</p> <p>Beta-carotene (dietary intake, servings/day): 4th vs. 1st</p> <p>Folate (dietary intake, servings/day): 4th vs. 1st</p>	Age, total energy, and interviewer

15	Ghosh et al, 2008 (18)	Nutr Cancer	US	1982-1998	239 cervical cancer cases and 979 controls	<p>Vitamin A (dietary intake, IU/day): >12786 vs. ≤7,420</p> <p>Vitamin C (dietary intake, mg/day): >224 vs. ≤134</p> <p>Vitamin E (dietary intake, mg/day): >8.9 vs. ≤5.7</p> <p>Alpha-carotene (dietary intake, µg/day): >1393 vs. ≤594</p> <p>Beta-carotene (dietary intake, µg/day): >7512 vs. ≤3920</p>	Age, education, smoking status, oral contraceptive use, barrier and spermicide use, family history of cervical cancer, year questionnaire completed, and total energy intake
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Population-based case-control study (n = 4)

1	Slattery et al, 1990 (19)	Epidemiology	US	1984-1987	266 cervical cancer cases and 408 controls (20-59)	<p>Vitamin A (dietary intake, IU): >13876 vs. ≤6283</p> <p>Vitamin C (dietary intake, mg): >178.9 vs. ≤86.8</p> <p>Vitamin E (dietary intake, mg): >11.3 vs. ≤5.9</p> <p>Beta-carotene (dietary intake, IU): >9376 vs. ≤3018</p> <p>Selenium (dietary intake, ug): >179.8 vs. ≤106.9</p>	Age, education, cigarette smoking, church attendance, and number of sex partners
2	Shimizu et al, 1996 (20)	Br J Cancer	Japan	1987-1988	137 cervical dysplasia cases and 137 controls	<p>Vitamin A (dietary intake, IU/week): >25024 vs. 13583</p>	Age at first marriage, number of births and menopausal status

3	Weinstein et al, 2001 (22)	J Nutr		US	1982-1983	183 invasive cervical cancer cases and 540 controls (20-74)	Folate (serum microbiologic/radiobi nding assay): high vs. low	Age, ethnicity, study site, HPV-16 serologic status, number of sexual partners, age at first intercourse, year since last Pap smear, number of pregnancies, smoking status and intensity, oral contraceptive use, education, and income
4	Thompson et al, 2002 ()	Cancer Control	Causes	US	1982-1983	354 cervical cancer (127 CIS and 227 invasive cancer) cases and 526 controls	Selenium (serum level, ng/ml): >124.0 vs. <97.5	Age at diagnosis, race/ethnicity, study center, HPV-16 serologic status, number of sexual partners, age at first intercourse, years of oral contraceptive use, history of nonspecific genital infection, smoking status and intensity, years since last Pap smear, and number of abnormal Pap smears

Nested case-control study (n = 3)

1	Batieha et al, 1993 (23)	Cancer Epidemiol Biomarkers Prev		US	1975-1990	50 carcinoma in situ and invasive cervical cancer cases and 100 controls	<p>Vitamin A (serum level, ug/dl): >53.50 vs. <41.90</p> <p>Vitamin E (serum level, mg/dl): >1.04 vs. <0.80</p> <p>Beta-carotene (serum level, ug/dl): >13.80 vs. <8.80</p> <p>Lycopene (serum level, ug/dl): >41.80 vs. <24.90</p> <p>Selenium (serum level, ppm): >0.123 vs. <0.109</p>	For each case the next younger and the next older woman who matched the case on race, age within 1 year, time of blood collection within 1 month of the case, hours since last meal at the time of blood collection in 2-h intervals, and time since last menstrual period on the collection day were selected.
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2	Lehtinen et al, 1999 (24)	Nutr Cancer	Finland and Sweden	1983-1994	36 invasive cervical cancer cases and 81 controls (30-69)	Vitamin A (serum level: tertile): 3rd vs. 1st Vitamin E (serum level: tertile): 3rd vs. 1st	The matching variables such as age at serum sampling, storage time, and country/pregnancy were included in the model.
3	Alberg et al, 2000 (21)	Cancer Epidemiol Biomarkers Prev	US	1975- 1990	39 cervical cancer (26 CIS and 13 invasive cervical cancer) cases and 78 controls (>18)	Vitamin B12 (serum level, pg/ml): >655.0 vs . <441.0 Folate (serum level, ng/ml): >4.8 vs. <2.9	Age, race, date of blood donation, education, current smoking, current oral contraceptive use, and HPV-16 positivity
