

2.2.12 Cancer of the cervix

Cancer of the cervix is the fourth most common cancer in women. Human papilloma-virus (HPV) infection, which is present in almost all cases of cervical cancer, is not related to adiposity (Wee et al., 2008). In 2001, the Working Group of the *IARC Handbook on weight control and physical activity* (IARC, 2002) concluded that the evidence of an association between avoidance of weight gain and cervical cancer was *inadequate*.

(a) Cohort studies

Since 2001, at least eight cohort studies of cervical cancer and body weight (Wolk et al., 2001; Calle et al., 2003; Rapp et al., 2005; Reeves et al., 2007; Song et al., 2008; Ulmer et al., 2012; Lee et al., 2013; Bhaskaran et al., 2014) and one pooled analysis of 39 cohort studies (Parr et al., 2010) have been published (Table 2.2.12a; web only; available at: <http://publications.iarc.fr/570>). Although some studies reported statistically significant increases, the data overall remained inconsistent.

(b) Case-control studies

The five case-control studies assessing the association between body fatness and cervical cancer (Cusimano et al., 1989; Brinton et al., 1993; Ursin et al., 1996; Lacey et al., 2003; Máchová et al., 2007) had relatively small sample sizes (< 150 cases), and the results are inconsistent (Table 2.2.12b; web only; available at: <http://publications.iarc.fr/570>).

References

- Bhaskaran K, Douglas I, Forbes H, dos-Santos-Silva I, Leon DA, Smeeth L (2014). Body-mass index and risk of 22 specific cancers: a population-based cohort study of 5.24 million UK adults. *Lancet*, 384(9945):755–65. doi:[10.1016/S0140-6736\(14\)60892-8](https://doi.org/10.1016/S0140-6736(14)60892-8) PMID:[25129328](https://pubmed.ncbi.nlm.nih.gov/25129328/)
- Brinton LA, Herrero R, Reeves WC, de Britton RC, Gaitan E, Tenorio F (1993). Risk factors for cervical cancer by histology. *Gynecol Oncol*, 51(3):301–6. doi:[10.1006/gyno.1993.1294](https://doi.org/10.1006/gyno.1993.1294) PMID:[8112636](https://pubmed.ncbi.nlm.nih.gov/8112636/)
- Calle EE, Rodriguez C, Walker-Thurmond K, Thun MJ (2003). Overweight, obesity, and mortality from cancer in a prospectively studied cohort of U.S. adults. *N Engl J Med*, 348(17):1625–38. doi:[10.1056/NEJMoa021423](https://doi.org/10.1056/NEJMoa021423) PMID:[12711737](https://pubmed.ncbi.nlm.nih.gov/12711737/)
- Cusimano R, Dardanoni G, Dardanoni L, La Rosa M, Pavone G, Tumino R, et al. (1989). Risk factors of female cancers in Ragusa population (Sicily) – 1. Endometrium and cervix uteri cancers. *Eur J Epidemiol*, 5(3):363–71. doi:[10.1007/BF00144839](https://doi.org/10.1007/BF00144839) PMID:[2792311](https://pubmed.ncbi.nlm.nih.gov/2792311/)
- IARC (2002). Weight control and physical activity. Lyon, France: IARC Press (IARC Handbooks of Cancer Prevention, Vol. 6). Available from: <http://publications.iarc.fr/376>.
- Lacey JV Jr, Swanson CA, Brinton LA, Altekruse SF, Barnes WA, Gravitt PE, et al. (2003). Obesity as a potential risk factor for adenocarcinomas and squamous cell carcinomas of the uterine cervix. *Cancer*, 98(4):814–21. doi:[10.1002/cncr.11567](https://doi.org/10.1002/cncr.11567) PMID:[12910527](https://pubmed.ncbi.nlm.nih.gov/12910527/)
- Lee JK, So KA, Piyathilake CJ, Kim MK (2013). Mild obesity, physical activity, calorie intake, and the risks of cervical intraepithelial neoplasia and cervical cancer. *PLoS One*, 8(6):e66555. doi:[10.1371/journal.pone.0066555](https://doi.org/10.1371/journal.pone.0066555) PMID:[23776686](https://pubmed.ncbi.nlm.nih.gov/23776686/)
- Máchová L, Cízek L, Horáková D, Koutná J, Lorenc J, Janoutová G, et al. (2007). Association between obesity and cancer incidence in the population of the District Sumperk, Czech Republic. *Onkologie*, 30(11):538–42. doi:[10.1159/000108284](https://doi.org/10.1159/000108284) PMID:[17992023](https://pubmed.ncbi.nlm.nih.gov/17992023/)
- Parr CL, Batty GD, Lam TH, Barzi F, Fang X, Ho SC, et al.; Asia-Pacific Cohort Studies Collaboration (2010). Body-mass index and cancer mortality in the Asia-Pacific Cohort Studies Collaboration: pooled analyses of 424,519 participants. *Lancet Oncol*, 11(8):741–52. doi:[10.1016/S1470-2045\(10\)70141-8](https://doi.org/10.1016/S1470-2045(10)70141-8) PMID:[20594911](https://pubmed.ncbi.nlm.nih.gov/20594911/)
- Rapp K, Schroeder J, Klenk J, Stoehr S, Ulmer H, Concin H, et al. (2005). Obesity and incidence of cancer: a large cohort study of over 145,000 adults in Austria. *Br J Cancer*, 93(9):1062–7. doi:[10.1038/sj.bjc.6602819](https://doi.org/10.1038/sj.bjc.6602819) PMID:[16234822](https://pubmed.ncbi.nlm.nih.gov/16234822/)
- Reeves GK, Pirie K, Beral V, Green J, Spencer E, Bull D; Million Women Study Collaboration (2007). Cancer incidence and mortality in relation to body mass

- index in the Million Women Study: cohort study. *BMJ*, 335(7630):1134. doi:[10.1136/bmj.39367.495995.AE](https://doi.org/10.1136/bmj.39367.495995.AE) PMID:[17986716](https://pubmed.ncbi.nlm.nih.gov/17986716/)
- Song YM, Sung J, Ha M (2008). Obesity and risk of cancer in postmenopausal Korean women. *J Clin Oncol*, 26(20):3395–402. doi:[10.1200/JCO.2007.15.7867](https://doi.org/10.1200/JCO.2007.15.7867) PMID:[18612154](https://pubmed.ncbi.nlm.nih.gov/18612154/)
- Ulmer H, Bjørge T, Concin H, Lukanova A, Manjer J, Hallmans G, et al. (2012). Metabolic risk factors and cervical cancer in the Metabolic Syndrome and Cancer Project (Me-Can). *Gynecol Oncol*, 125(2):330–5. doi:[10.1016/j.ygyno.2012.01.052](https://doi.org/10.1016/j.ygyno.2012.01.052) PMID:[22330614](https://pubmed.ncbi.nlm.nih.gov/22330614/)
- Ursin G, Pike MC, Preston-Martin S, d'Ablaing G 3rd, Peters RK (1996). Sexual, reproductive, and other risk factors for adenocarcinoma of the cervix: results from a population-based case-control study (California, United States) *Cancer Causes Control*, 7(3):391–401. doi:[10.1007/BF00052946](https://doi.org/10.1007/BF00052946) PMID:[8734834](https://pubmed.ncbi.nlm.nih.gov/8734834/)
- Wee CC, Huang A, Huskey KW, McCarthy EP (2008). Obesity and the likelihood of sexual behavioral risk factors for HPV and cervical cancer. *Obesity (Silver Spring)*, 16(11):2552–5. doi:[10.1038/oby.2008.394](https://doi.org/10.1038/oby.2008.394) PMID:[18719677](https://pubmed.ncbi.nlm.nih.gov/18719677/)
- Wolk A, Gridley G, Svensson M, Nyrén O, McLaughlin JK, Fraumeni JF, et al. (2001). A prospective study of obesity and cancer risk (Sweden). *Cancer Causes Control*, 12(1):13–21. doi:[10.1023/A:1008995217664](https://doi.org/10.1023/A:1008995217664) PMID:[11227921](https://pubmed.ncbi.nlm.nih.gov/11227921/)