

6. References

- Adam, S.A., Sheaves, J.K., Wright, N.H., Mosser, G., Harris, R.W. & Vessey, M.P. (1981) A case-control study of the possible association between oral contraceptives and malignant melanoma. *Br. J. Cancer*, **44**, 45–50
- Adami, H.-O., Bergström, R., Persson, I. & Sparén, P. (1990) The incidence of ovarian cancer in Sweden, 1960–1984. *Am. J. Epidemiol.*, **132**, 446–452
- Ahmad, M.E., Shadab, G.G.H.A., Azfer, M.A. & Afzal, M. (2001) Evaluation of genotoxic potential of synthetic progestins norethindrone and norgestrel in human lymphocytes in vitro. *Mutat. Res.*, **494**, 13–20
- Ali, M.M. & Cleland, J. (2005) Sexual and reproductive behaviour among single women aged 15–24 in eight Latin American countries: A comparative analysis. *Soc. Sci. Med.*, **60**, 1175–1185
- Althuis, M.D., Brogan, D.R., Coates, R.J., Daling, J.R., Gammon, M.D., Malone, K.E., Schoenberg, J.B. & Brinton, L.A. (2003) Hormonal content and potency of oral contraceptives and breast cancer risk among young women. *Br. J. Cancer*, **88**, 50–57
- Arai, N., Ström, A., Rafter, J.J. & Gustafsson, J.-A. (2000) Estrogen receptor beta mRNA in colon cancer cells: Growth effects of estrogen and genistein. *Biochem. biophys. Res. Commun.*, **270**, 425–431
- Arbeit, J.M., Münger, K., Howley, P.M. & Hanahan, D. (1994) Progressive squamous epithelial neoplasia in K14-human papillomavirus type 16 transgenic mice. *J. Virol.*, **68**, 4358–4368
- Arbeit, J.M., Howley, P.M. & Hanahan, D. (1996) Chronic estrogen-induced cervical and vaginal squamous carcinogenesis in human papillomavirus type 16 transgenic mice. *Proc. natl Acad. Sci. USA*, **93**, 2930–2935
- Archer, D.F. (1999) Endometrial histology during use of a low-dose estrogen–desogestrel oral contraceptive with a reduced hormone-free interval. *Contraception*, **60**, 151–154
- Archer, D.F., Timmer, C.J. & Lammers, P. (1994) Pharmacokinetics of a triphasic oral contraceptive containing desogestrel and ethinyl estradiol. *Fertil. Steril.*, **61**, 645–651
- Auborn, K.J., Woodworth, C., DiPaolo, J.A. & Bradlow, H.L. (1991) The interaction between HPV infection and estrogen metabolism in cervical carcinogenesis. *Int. J. Cancer*, **49**, 867–869
- Baan, R., Straif, K., Grosse, Y., Secretan, B., El Ghissassi, F., Bouvard, V., Altieri, A., Coglianò, V. & the WHO International Agency for Research on Cancer Monograph Working Group (2007) Carcinogenicity of alcoholic beverages. *Lancet Oncol.*, **8**, 292–293
- Back, D.J., Breckenridge, A.M., Crawford, F.E., McIver, M., Orme, M.L., Rowe, P.H. & Smith, E. (1978) Kinetics of norethindrone in women. II. Single-dose kinetics. *Clin. Pharmacol. Ther.*, **24**, 448–53
- Back, D.J., Bates, M., Breckenridge, A.M., Hall, J.M., McIver, M., Orme, M.L., Park, B.K. & Rowe, P.H. (1981) The pharmacokinetics of levonorgestrel and ethynylestradiol in women — Studies with ovran and ovranette. *Contraception*, **23**, 229–239
- Back, D.J., Grimmer, S.F.M., Shenoy, N. & Orme, M.L.E. (1987) Plasma concentrations of 3-keto-desogestrel after oral administration of desogestrel and intravenous administration of 3-keto-desogestrel. *Contraception*, **35**, 619–626

- Beard, C.M., Hartmann, L.C., Atkinson, E.J., O'Brien, P.C., Malkasian, G.D., Keeney, G.L. & Melton, L.J., III. (2000) The epidemiology of ovarian cancer: A population-based study in Olmsted County, Minnesota, 1935–1991. *Ann. Epidemiol.*, **10**, 14–23
- Beral, V., Ramcharan, S. & Faris, R. (1977) Malignant melanoma and oral contraceptive use among women in California. *Br. J. Cancer*, **36**, 804–809
- Beral, V., Evans, S., Shaw, H. & Milton, G. (1984) Oral contraceptive use and malignant melanoma in Australia. *Br. J. Cancer*, **50**, 681–685
- Beral, V., Hannaford, P. & Kay, C. (1988) Oral contraceptive use and malignancies of the genital tract. Results from the Royal College of General Practitioners' Oral Contraception Study. *Lancet*, **ii**, 1331–1335
- Beral, V., Hermon, C., Kay, C., Hannaford, P., Darby, S. & Reeves, G. (1999) Mortality associated with oral contraceptive use: 25 year follow up of cohort of 46 000 women from Royal College of General Practitioners' oral contraception study. *Br. med. J.*, **318**, 96–100
- Bergink, W., Assendorp, R., Kloosterboer, L., van Lier, W., Voortman, G. & Qvist, I. (1990) Serum pharmacokinetics of orally administered desogestrel and binding of contraceptive progestogens to sex hormone-binding globulin. *Am. J. Obstet. Gynecol.*, **163**, 2132–2137
- Berrington, A., Jha, P., Peto, J., Green, J. & Hermon, C. for the UK National Case-Control Study of Cervical Cancer (2002) Oral contraceptives and cervical cancer (Letter to the Editor). *Lancet*, **360**, 410
- Bhat, H.K., Calaf, G., Hei, T.K., Loya, T. & Vadgama, J.V. (2003) Critical role of oxidative stress in estrogen-induced carcinogenesis. *Proc. natl Acad. Sci. USA*, **100**, 3913–3918
- Biri, A., Civelek, E., Karahalil, B. & Sardas, S. (2002) Assessment of DNA damage in women using oral contraceptives. *Mutat. Res.*, **521**, 113–119
- Blackburn, R.D., Cunkelman, J.A. & Zlidar, V.M. (2000) *Oral Contraceptives — An Update* (Population Reports, Series A, No. 9), Baltimore, MD, Johns Hopkins University School of Public Health, Population Information Program
- Blode, H., Wuttke, W., Looock, W., Roll, G. & Heithecker, R. (2000) A 1-year pharmacokinetic investigation of a novel oral contraceptive containing drospirenone in healthy female volunteers. *Eur. J. Contracept. reprod. Health Care*, **5**, 256–264
- Bongaarts, J. & Johansson, E. (2000) Future trends in contraception in the developing world: Prevalence and method mix. *Stud. Fam. Plann.*, **33**
- Booth, M., Beral, V. & Smith, P. (1989) Risk factors for ovarian cancer: A case-control study. *Br. J. Cancer*, **60**, 592–598
- Bosetti, C., Negri, E., Trichopoulos, D., Franceschi, S., Beral, V., Tzonou, A., Parazzini, F., Greggi, S. & La Vecchia, C. (2002) Long-term effects of oral contraceptives on ovarian cancer risk. *Int. J. Cancer*, **102**, 262–265
- Bostick, R.M., Potter, J.D., Kushi, L.H., Sellers, T.A., Steinmetz, K.A., McKenzie, D.R., Gapstur, S.M. & Folsom, A.R. (1994) Sugar, meat, and fat intake, and non-dietary risk factors for colon cancer incidence in Iowa women (United States). *Cancer Causes Control*, **5**, 38–52
- Boyd, R.A., Zegarac, E.A., Posvar, E.L. & Flack, M.R. (2001) Minimal androgenic activity of a new oral contraceptive containing norethindrone acetate and graduated doses of ethinyl estradiol. *Contraception*, **63**, 71–76
- Brake, T. & Lambert, P.F. (2005) Estrogen contributes to the onset, persistence, and malignant progression of cervical cancer in a human papillomavirus-transgenic mouse model. *Proc. natl Acad. Sci. USA*, **102**, 2490–2495

- Brambilla, G. & Martelli, A. (2002) Are some progestins genotoxic liver carcinogens? *Mutat. Res.*, **512**, 155–163
- Bray, F., Loos, A.H., Tognazzo, S. & La Vecchia, C. (2005) Ovarian cancer in Europe: Cross-sectional trends in incidence and mortality in 28 countries, 1953–2000. *Int. J. Cancer*, **113**, 977–990
- Brinton, L.A., Daling, J.R., Liff, J.M., Schoenberg, J.B., Malone, K.E., Stanford, J.L., Coates, R.J., Gammon, M.D., Hanson, L. & Hoover, R.N. (1995) Oral contraceptives and breast cancer risk among younger women. *J. natl Cancer Inst.*, **87**, 827–835
- Brinton, L.A., Brogan, D.R., Coates, R.J., Swanson, C.A., Potischman, N. & Stanford, J.L. (1998) Breast cancer risk among women under 55 years of age by joint effects of usage of oral contraceptives and hormone replacement therapy. *Menopause*, **5**, 145–151
- Bukvic, N., Susca, F., Bukvic, D., Fanelli, M. & Guanti, G. (2000) 17 alpha Ethinylestradiol and norgestrel in combination induce micronucleus increases and aneuploidy in human lymphocyte and fibroblast cultures. *Teratog. Carcinog. Mutag.*, **20**, 147–159
- Burkman, R., Schlesselman, J.J. & Ziemann, M. (2004) Safety concerns and health benefits associated with oral contraception. *Am. J. Obstet. Gynecol.*, **190**, S5–22
- Campbell-Thompson, M., Lynch, I.J. & Bhardwaj, B. (2001) Expression of estrogen receptor (ER) subtypes and ERbeta isoforms in colon cancer. *Cancer Res.*, **61**, 632–640
- Carol, W., Klinger, G., Jager, R., Kasch, R. & Brandstadt, A. (1992) Pharmacokinetics of ethinylestradiol and levonorgestrel after administration of two oral contraceptive preparations. *Exp. clin. Endocrinol.*, **99**, 12–17
- CASH (Cancer and Steroid Hormone) (1986) Oral-contraceptive use and the risk of breast cancer. The Cancer and Steroid Hormone Study of the Centers for Disease Control and the National Institute of Child Health and Human Development. *New Engl. J. Med.*, **315**, 405–411
- CASH (Cancer and Steroid Hormone) (1987a) Combination oral contraceptive use and the risk of endometrial cancer. The Cancer and Steroid Hormone Study of the Centers for Disease Control and the National Institute of Child Health and Human Development. *J. Am. med. Assoc.*, **257**, 796–800
- CASH (Cancer and Steroid Hormone) (1987b) The reduction in risk of ovarian cancer associated with oral contraceptive use. The Cancer and Steroid Hormone Study of the Centers for Disease Control and the National Institute of Child Health and Human Development. *New Engl. J. Med.*, **316**, 650–655
- Castle, P.E., Wacholder, S., Lorincz, A.T., Scott, D.R., Sherman, M.E., Glass, A.G., Rush, B.B., Schussler, J.E. & Schiffman, M. (2002) A prospective study of high-grade cervical neoplasia risk among human papillomavirus-infected women. *J. natl Cancer Inst.*, **94**, 1406–1414
- Castoria, G., Barone, M.V., Di Domenico, M., Bilancio, A., Ametrano, D., Migliaccio, A. & Auricchio, F. (1999) Non-transcriptional action of oestradiol and progestin triggers DNA synthesis. *EMBO J.*, **18**, 2500–2510
- Cavalcanti, S.M.B., Zardo, L.G., Passos, M.R.L. & Oliveira, L.H.S. (2000) Epidemiological aspects of human papillomavirus infection and cervical cancer in Brazil. *J. Infect.*, **40**, 80–87
- Chan, W.-K., Klock, G. & Bernard, H.-U. (1989) Progesterone and glucocorticoid response elements occur in the long control regions of several human papillomaviruses involved in anogenital neoplasia. *J. Virol.*, **63**, 3261–3269

- Chatterton, R.T., Jr, Geiger, A.S., Mateo, E.T., Helenowski, I.B. & Gann, P.H. (2005) Comparison of hormone levels in nipple aspirate fluid of pre- and postmenopausal women: Effect of oral contraceptives and hormone replacement. *J. clin. Endocrinol. Metabol.*, **90**, 1686–1691
- Chen, Y.-H., Huang, L.-H. & Chen, T.-M. (1996) Differential effects of progestins and estrogens on long control regions of human papillomavirus types 16 and 18. *Biochem. biophys. Res. Commun.*, **224**, 651–659
- Chiaffarino, F., Pelucchi, C., Parazzini, F., Negri, E., Franceschi, S., Talamini, R., Conti, E., Montella, M. & La Vecchia, C. (2001) Reproductive and hormonal factors and ovarian cancer. *Ann. Oncol.*, **12**, 337–341
- Chie, W.C., Li, C.Y., Huang, C.S., Chang, K.J., Yen, M.L. & Lin, R.S. (1998) Oral contraceptives and breast cancer risk in Taiwan, a country of low incidence of breast cancer and low use of oral contraceptives. *Int. J. Cancer*, **77**, 219–223
- Chute, C.G., Willett, W.C., Colditz, G.A., Stampfer, M.J., Rosner, B. & Speizer, F.E. (1991) A prospective study of reproductive history and exogenous estrogens on the risk of colorectal cancer in women. *Epidemiology*, **2**, 201–207
- Claus, E.B., Stowe, M. & Carter, D. (2003) Oral contraceptives and the risk of ductal breast carcinoma in situ. *Breast Cancer Res. Treat.*, **81**, 129–136
- Colditz, G.A. for the Nurses' Health Study Research Group (1994) Oral contraceptive use and mortality during 12 years of follow-up: The Nurses' Health Study. *Ann. intern. Med.*, **120**, 821–826
- Collaborative Group on Hormonal Factors in Breast Cancer (1996a) Breast cancer and hormonal contraceptives: Collaborative reanalysis of individual data on 53 297 women with breast cancer and 100 239 women without breast cancer from 54 epidemiological studies. *Lancet*, **347**, 1713–1727
- Collaborative Group on Hormonal Factors in Breast Cancer (1996b) Breast cancer and hormonal contraceptives: Further results. *Contraception*, **54** (Suppl.), 1S–106S
- Collaborative MILTS Project Team (1997) Oral contraceptives and liver cancer. *Contraception*, **56**, 275–284
- Contractor, R.G., Foran, C.M., Li, S. & Willett, K.L. (2004) Evidence of gender- and tissue-specific promoter methylation and the potential for ethinylestradiol-induced changes in Japanese Medaka (*Oryzias latipes*) estrogen receptor and aromatase genes. *J. Toxicol. environ Health*, **A67**, 1–22
- Coutinho, E.M., Athayde, C., Dantas, C., Hirsch, C. & Barbosa, I. (1999) Use of a single implant of elcometrine (ST-1435), a nonorally active progestin, as a long acting contraceptive for postpartum nursing women. *Contraception*, **59**, 115–122
- Cramer, D.W., Hutchison, G.B., Welch, W.R., Scully, R.E. & Knapp, R.C. (1982) Factors affecting the association of oral contraceptives and ovarian cancer. *New Engl. J. Med.*, **307**, 1047–1051
- Cramer, D.W., Greenberg, E.R., Titus-Ernstoff, L., Liberman, R.F., Welch, W.R., Li, E. & Ng, W.G. (2000) A case-control study of galactose consumption and metabolism in relation to ovarian cancer. *Cancer Epidemiol. Biomarkers Prev.*, **9**, 95–101
- Deacon, J.M., Evans, C.D., Yule, R., Desai, M., Binns, W., Taylor, C. & Peto, J. (2000) Sexual behaviour and smoking as determinants of cervical HPV infection and of CIN3 among those infected: A case-control study nested within the Manchester cohort. *Br. J. Cancer*, **88**, 1565–1572

- Deckers, G.H., Schoonen, W.G.E.J. & Kloosterboer, H.J. (2000) Influence of the substitution of 11-methylene, Δ^{15} , and/or 18-methyl groups in norethisterone on receptor binding, transactivation assays and biological activities in animals. *J. ster. Biochem. mol. Biol.*, **74**, 83–92
- Dezarnaulds, G. & Fraser, I.S. (2002) Vaginal ring delivery of hormone replacement therapy — A review. *Expert Opin. Pharmacother.*, **4**, 201–212
- Di Domenico, M., Castoria, G., Bilancio, A., Migliaccio, A. & Auricchio, F. (1996) Estradiol activation of human colon carcinoma-derived caco-2 cell growth. *Cancer Res.*, **56**, 4516–4521
- Di Leo, A., Linsalata, M., Cavallini, A., Messa, C. & Russo, F. (1992) Sex steroid hormone receptors, epidermal growth factor receptor, and polyamines in human colorectal cancer. *Dis. Colon Rectum*, **35**, 305–309
- Di Leo, A., Messa, C., Cavallini, A. & Linsalata, M. (2001) Estrogens and colorectal cancer. *Curr. Drug Targets imm. endocr. metab. Disorders*, **1**, 1–12
- Duell, E.J. & Holly, E.A. (2005) Reproductive and menstrual risk factors for pancreatic cancer: A population-based study of San Francisco Bay area women. *Am. J. Epidemiol.*, **161**, 741–747
- Dumeaux, V., Alsaker, E. & Lund, E. (2003) Breast cancer and specific types of oral contraceptives: A large Norwegian cohort study. *Int. J. Cancer*, **105**, 844–850
- Dumeaux, V., Lund, E. & Hjartaker, A. (2004) Use of oral contraceptives, alcohol, and risk for invasive breast cancer. *Cancer Epidemiol. Biomarkers Prev.*, **13**, 1302–1307
- Edmondson, H.A., Henderson, B. & Benton, B. (1976) Liver-cell adenomas associated with use of oral contraceptives. *New Engl. J. Med.*, **294**, 470–472
- Elwood, J.M., Whitehead, S.M., Davison, J., Stewart, M. & Galt, M. (1990) Malignant melanoma in England: Risks associated with naevi, freckles, social class, hair colour, and sunburn. *Int. J. Epidemiol.*, **19**, 801–810
- Fanchin, R., de Ziegler, D., Bergeron, C., Righini, C., Torrisi, C. & Frydman, R. (1997) Transvaginal administration of progesterone. *Obstet. Gynecol.*, **90**, 396–401
- Fernandez, E., La Vecchia, C., Franceschi, S., Braga, C., Talamini, R., Negri, E. & Parazzini, F. (1998) Oral contraceptive use and risk of colorectal cancer. *Epidemiology*, **9**, 295–300
- Feskanich, D., Hunter, D.J., Willett, W.C., Spiegelman, D., Stampfer, M.J., Speizer, F.E. & Colditz, G.A. (1999) Oral contraceptive use and risk of melanoma in premenopausal women. *Br. J. Cancer*, **81**, 918–923
- Fiorelli, G., Picariello, L., Martinetti, V., Tonelli, F. & Brandi, M.L. (1999) Functional estrogen receptor β in colon cancer cells. *Biochem. biophys. Res. Commun.*, **261**, 521–527
- Forman, D., Doll, R. & Peto, R. (1983) Trends in mortality from carcinoma of the liver and the use of oral contraceptives. *Br. J. Cancer*, **48**, 349–354
- Forman, D., Vincent, T.J. & Doll, R. (1986) Cancer of the liver and the use of oral contraceptives. *Br. med. J.*, **292**, 1357–1361
- Fotherby, K. (1990) Potency and pharmacokinetics of gestagens. *Contraception*, **41**, 533–550
- Franceschi, S., La Vecchia, C., Helmrigh, S.P., Mangioni, C. & Tognoni, G. (1982) Risk factors for epithelial ovarian cancer in Italy. *Am. J. Epidemiol.*, **115**, 714–719
- Franceschi, S., Parazzini, F., Negri, E., Booth, M., La Vecchia, C., Beral, V., Tzonou, A. & Trichopoulos, D. (1991a) Pooled analysis of 3 European case-control studies of epithelial ovarian cancer. III. Oral contraceptive use. *Int. J. Cancer*, **49**, 61–65
- Franceschi, S., Bidoli, E., Talamini, R., Barra, S. & La Vecchia, C. (1991b) Colorectal cancer in northeastern Italy: Reproductive, menstrual and female hormone-related factors. *Eur. J. Cancer*, **27**, 604–608

- Fraser, I.S. (2000) Forty years of combined oral contraception: The evolution of a revolution. *Med. J. Austr.*, **173**, 541–544
- Fu, H., Darroch, J.E., Haas, T. & Ranjit, N. (1999) Contraceptive failure rates: New estimates from the 1995 National Survey of Family Growth. *Fam. Plann. Perspect.*, **31**, 56–63
- Furberg, H., Millikan, R.C., Geradts, J., Gammon, M.D., Dressler, L.G., Ambrosone, C.B. & Newman, B. (2003) Reproductive factors in relation to breast cancer characterized by p53 protein expression (United States). *Cancer Causes Control*, **14**, 609–618
- Furner, S.E., Davis, F.G., Nelson, R.L. & Haenszel, W. (1989) A case-control study of large bowel cancer and hormone exposure in women. *Cancer Res.*, **49**, 4936–4940
- Gago-Dominguez, M., Castela, J.E., Yuan, J.-M., Ross, R.K. & Yu, M.C. (1999) Increased risk of renal cell carcinoma subsequent to hysterectomy. *Cancer Epidemiol. Biomarkers Prev.*, **8**, 999–1003
- Gallagher, R.P., Elwood, J.M., Hill, G.B., Coldman, A.J., Threlfall, W.J. & Spinelli, J.J. (1985) Reproductive factors, oral contraceptives and risk of malignant melanoma: Western Canada Melanoma Study. *Br. J. Cancer*, **52**, 901–907
- Gallmeier, E., Winter, J.M., Cunningham, S.C., Kahn, S.R. & Kern, S.E. (2005) Novel genotoxicity assays identify norethindrone to activate p53 and phosphorylate H2AX. *Carcinogenesis*, **26**, 1811–1820
- Gallo, M.F., Nanda, K., Grimes, D.A. & Schulz, K.F. (2004) 20 mcg Versus > 20 mcg estrogen combined oral contraceptives for contraception (review). *Cochrane Database Syst. Rev.*, **4**, Art. No. CD003989
- Gallus, S., Bosetti, C., Franceschi, S., Levi, F., Simonato, L., Negri, E., & La Vecchia, C. (2001) Oesophageal cancer in women: Tobacco, alcohol, nutritional and hormonal factors. *Br. J. Cancer*, **85**, 341–345
- Garcia-Becerra, R., Cooney, A.J., Borja-Cacho, E., Lemus, A.E., Pérez-Palacios, G. & Larrea, F. (2004) Comparative evaluation of androgen and progesterone receptor transcription selectivity indices of 19-nortestosterone-derived progestins. *J. ster. Biochem. mol. Biol.*, **91**, 21–27
- Gefeller, O., Hassan, K. & Wille, L. (1998) Cutaneous malignant melanoma in women and the role of oral contraceptives. *Br. J. Dermatol.*, **138**, 122–124
- Gemer, O., Moscovici, O., Ben-Horin, C.L., Linov, L., Peled, R. & Segal S. (2004) Oral contraceptives and liver hemangioma: A case-control study. *Acta obstet. gynaecol. scand.*, **83**, 1199–1201
- Glaser, S.L., Clarke, C.A., Nugent, R.A., Stearns, C.B. & Dorfman, R.F. (2003) Reproductive factors in Hodgkin's disease in women. *Am. J. Epidemiol.*, **158**, 553–563
- Gnagy, S., Ming, E.E., Devesa, S.S., Hartge, P. & Whittemore, A.S. (2000) Declining ovarian cancer rates in U.S. women in relation to parity and oral contraceptive use. *Epidemiology*, **11**, 102–105
- Godard, B., Foulkes, W.D., Provencher, D., Brunet, J.S., Tonin, P.N., Mes-Masson, A.M., Narod, S.A. & Ghadirian, P. (1998) Risk factors for familial and sporadic ovarian cancer among French Canadians: A case-control study. *Am. J. Obstet. Gynecol.*, **179**, 403–410
- Goebelsmann, U., Hoffman, D., Chiang, S. & Woutersz, T. (1986) The relative bioavailability of levonorgestrel and ethinyl estradiol administered as a low-dose combination oral contraceptive. *Contraception*, **34**, 341–351

- Goldzieher, J.W. & Brody, S.A. (1990) Pharmacokinetics of ethinyl estradiol and mestranol. *Am. J. Obstet. Gynecol.*, **163**, 2114–2119
- Grabrick, D.M., Hartmann, L.C., Cerhan, J.R., Vierkant, R.A., Therneau, T.M., Vachon, C.M., Olson, J.E., Couch, F.J., Anderson, K.E., Pankratz, V.S. & Sellers, T.A. (2000) Risk of breast cancer with oral contraceptive use in women with a family history of breast cancer. *J. Am. med. Assoc.*, **284**, 1791–1798
- Green, A. & Bain, C. (1985) Hormonal factors and melanoma in women. *Med. J. Austr.*, **142**, 446–448
- Green, J., Berrington de Gonzalez, A., Smith, J.S., Franceschi, S., Appleby, P., Plummer, M. & Beral, V. (2003) Human papillomavirus infection and use of oral contraceptives. *Br. J. Cancer*, **88**, 1713–1720
- Greer, J.B., Modugno, F., Allen, G.O. & Ness, R.B. (2005) Androgenic progestins in oral contraceptives and the risk of epithelial ovarian cancer. *Obstet. Gynecol.*, **105**, 731–740
- Greggi, S., Parazzini, F., Paratore, M.P., Chatenoud, L., Legge, F., Mancuso, S. & La Vecchia, C. (2000) Risk factors for ovarian cancer in central Italy. *Gynecol. Oncol.*, **9**, 50–54
- Grodstein, F., Newcomb, P.A. & Stampfer, M.J. (1999) Postmenopausal hormone therapy and the risk of colorectal cancer: A review and meta-analysis. *Am. J. Med.*, **106**, 574–582
- Guengerich, F.P. (1988) Oxidation of 17 alpha-ethynylestradiol by human liver cytochrome P-450. *Mol. Pharmacol.*, **33**, 500–508
- Hammond, G.L., Rabe, T. & Wagner, J.D. (2001) Preclinical profiles of progestins used in formulations of oral contraceptives and hormone replacement therapy. *Am. J. Obstet. Gynecol.*, **185**, S24–S31
- Hammouda, D., Muñoz, N., Herrero, R., Arslan, A., Bouhadet, A., Oublil, M., Djedat, B., Fontanière, B., Snijders, P., Meijer, C. & Franceschi, S. (2005) Cervical carcinoma in Algiers, Algeria: Human papillomavirus and lifestyle factors. *Int. J. Cancer*, **113**, 483–489
- Hannaford, P. & Elliot, A. (2005) Use of exogenous hormones by women and colorectal cancer: Evidence from the Royal College of General Practitioners' Oral Contraception Study. *Contraception*, **71**, 95–98
- Hannaford, P.C., Villard-Mackintosh, L., Vessey, M.P. & Kay, C.R. (1991) Oral contraceptives and malignant melanoma. *Br. J. Cancer*, **63**, 430–433
- Hannaford, P.C., Croft, P.R. & Kay, C.R. (1994) Oral contraception and stroke. Evidence from the Royal College of General Practitioners' Oral Contraception Study. *Stroke*, **25**, 935–942
- Hannaford, P.C., Kay, C.R., Vessey, M.P., Painter, R. & Mant, J. (1997) Combined oral contraceptives and liver disease. *Contraception*, **55**, 145–151
- Harlow, B.L., Weiss, N.S., Roth, G.J., Chu, J. & Daling, J.R. (1988) Case-control study of borderline ovarian tumors: Reproductive history and exposure to exogenous female hormones. *Cancer Res.*, **48**, 5849–5852
- Harris, R., Whittemore, A.S., Itnyre, J. & the Collaborative Ovarian Cancer Group (1992) Characteristics relating to ovarian cancer risk: Collaborative analysis of 12 US case-control studies. III. Epithelial tumors of low malignant potential in white women. *Am. J. Epidemiol.*, **136**, 1204–1211
- Hartge, P., Schiffman, M.H., Hoover, R., McGowan, L., Leshner, L. & Norris, H.J. (1989) A case-control study of epithelial ovarian cancer. *Am. J. Obstet. Gynecol.*, **161**, 10–16

- Haselkorn, T., Stewart, S.L. & Horn-Ross, P.L. (2003) Why are thyroid cancer rates so high in Southeast Asian women living in the United States? The Bay Area Thyroid Cancer Study. *Cancer Epidemiol. Biomarkers Prev.*, **12**, 144–150
- Hasenack, H.G., Bosch, A.M.G. & Käär, K. (1986) Serum levels of 3-keto-desogestrel after oral administration of desogestrel and 3-keto-desogestrel. *Contraception*, **33**, 591–596
- Heimdal, K., Skovlund, E. & Moller, P. (2002) Oral contraceptives and risk of familial breast cancer. *Cancer Detect. Prev.*, **26**, 23–27
- Helmrich, S.P., Rosenberg, L., Kaufman, D.W., Miller, D.R., Schottenfeld, D., Stolley, P.D. & Shapiro, S. (1984) Lack of an elevated risk of malignant melanoma in relation to oral contraceptive use. *J. natl Cancer Inst.*, **72**, 617–620
- Henderson, B.E., Casagrande, J.T., Pike, M.C., Mack, T., Rosario, I. & Duke, A. (1983a) The epidemiology of endometrial cancer in young women. *Br. J. Cancer*, **47**, 749–756
- Henderson, B., Preston-Martin, S., Edmonson, H.A., Peters, R.L. & Pike, M.C. (1983b) Hepatocellular carcinoma and oral contraceptives. *Br. J. Cancer*, **48**, 437–440
- Hendrickse, C.W., Jones, C.E., Donovan, I.A., Neoptolemos, J.P. & Baker, P.R. (1993) Oestrogen and progesterone receptors in colorectal cancer and human colonic cancer cell lines. *Br. J. Surg.*, **80**, 636–640
- Heuner, A., Kuhn, W., Heger-Mahn, D., Richert, K. & Humpel, M. (1995) A single-dose and 3-month clinical-pharmacokinetic study with a new combination oral contraceptive. *Adv. Contracept.*, **11**, 207–225
- Hildreth, N.G., Kelsey, J.L., LiVolsi, V.A., Fischer, D.B., Holford, T.R., Mostow, E.D., Schwartz, P.E. & White, C. (1981) An epidemiologic study of epithelial carcinoma of the ovary. *Am. J. Epidemiol.*, **114**, 398–405
- Hoffmann, H., Hillesheim, H.G., Güttner, J., Stade, K., Merbt, E.-M., & Holle, K. (1983) Long term toxicological studies on the progestin STS 557. *Exp. clin. Endocrinol.*, **81**, 179–196
- Holly, E.A., Weiss, N.S. & Liff, J.M. (1983) Cutaneous melanoma in relation to exogenous hormones and reproductive factors. *J. natl Cancer Inst.*, **70**, 827–831
- Holly, E.A., Cress, R.D. & Ahn, D.K. (1995) Cutaneous melanoma in women. III. Reproductive factors and oral contraceptive use. *Am. J. Epidemiol.*, **141**, 943–950
- Holman, C.D., Armstrong, B.K. & Heenan, P.J. (1984) Cutaneous malignant melanoma in women: Exogenous sex hormones and reproductive factors. *Br. J. Cancer*, **50**, 673–680
- van Hooff, M.H.A., Hirasings, R.A., Kaptein, M.B.M., Koppelaar, C., Voorhorst, F.J. & Schoemaker, J. (1998) The use of oral contraception by adolescents for contraception, menstrual cycle problems or acne. *Acta obstet. gynaecol. scand.*, **77**, 898–904
- Hsing, A.W., Hoover, R.N., McLaughlin, J.K., Co-Chien, H.T., Wacholder, S., Blot, W.J. & Fraumeni, J.F. (1992) Oral contraceptives and primary liver cancer among young women. *Cancer Causes Control*, **3**, 43–48
- Hulka, B.S., Chambless, L.E., Kaufman, D.G., Fowler, W.C., Jr & Greenberg, B.G. (1982) Protection against endometrial carcinoma by combination-product oral contraceptives. *J. Am. med. Assoc.*, **247**, 475–477
- Humpel, M., Wendt, H., Dogs, G., Weiss, C., Rietz, S. & Speck, U. (1977) Intraindividual comparison of pharmacokinetic parameters of d-norgestrel, lynestrenol and cyproterone acetate in 6 women. *Contraception*, **16**, 199–215

- Humpel, M., Wendt, H., Pommerenke, G., Weiss, C. & Speck, U. (1978) Investigations of pharmacokinetics of levonorgestrel to specific consideration of a possible first-pass effect in women. *Contraception*, **17**, 207–220
- Hümpel, M., Täuber, U., Kuhn, W., Pfeffer, M., Brill, K., Heithecker, R., Louton, T. & Steinberg, B. (1990) Comparison of serum ethinyl estradiol, sex-hormone-binding globulin, corticoid-binding globulin and cortisol levels in women using two low-dose combined oral contraceptives. *Horm. Res.*, **33**, 35–39
- IARC (1979) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, Vol. 21, *Sex Hormones (II)*, Lyon
- IARC (1988) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 44, Alcohol Drinking, Lyon
- IARC (1994) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 59, Hepatitis Viruses, Lyon
- IARC (1999) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 72, *Hormonal Contraception and Post-menopausal Hormonal Therapy*, Lyon
- IARC (2004) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 83, Tobacco Smoke and Involuntary Smoking, Lyon
- IARC (2007) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, Vol. 90, *Human Papillomaviruses*, Lyon
- IMS Health (2005) *IMS Health MIDAS*, June 2005
- Iribarren, C., Haselkorn, T., Tekawa, I.S. & Friedman, G.D. (2001) Cohort study of thyroid cancer in a San Francisco Bay area population. *Int. J. Cancer*, **93**, 745–750
- Isaksson, E., von Schoultz, E., Odland, V., Soderqvist, G., Csemiczky, G., Carlström, K., Skoog, L. & von Schoultz, B. (2001) Effects of oral contraceptives on breast epithelial proliferation. *Breast Cancer Res. Treat.*, **65**, 163–169
- Ishikawa, T., Inoue, S., Kakinuma, C., Kuwayama, C., Hamada, Y. & Shibutani, Y. (2000) Growth-stimulating effect of dienogest, a synthetic steroid, on rodent, canine, and primate mammary glands. *Toxicology*, **151**, 91–101
- Jacobs, E.J., White, E. & Weiss, N.S. (1994) Exogenous hormones, reproductive history, and colon cancer (Seattle, Washington, USA). *Cancer Causes Control*, **5**, 359–366
- Jain, M.G., Rohan, T.E. & Howe, G.R. (2000) Hormone replacement therapy and endometrial cancer in Ontario, Canada. *J. clin. Epidemiol.*, **53**, 385–391
- Jänne, O.A., Zook, B.C., Didolkar, A.K., Sundaram, K. & Nash, H.A. (2001) The roles of estrogen and progesterin in producing decidual sarcoma and other lesions in the rabbit. *Toxicol. Pathol.*, **29**, 417–421
- Jick, S.S., Walker, A.M. & Jick, H. (1993) Oral contraceptives and endometrial cancer. *Obstet. Gynecol.*, **82**, 931–935
- Jick, H., Jick, S.S., Gurewich, V., Myers, M.W. & Vasilakis, C. (1995) Risk of idiopathic cardiovascular death and nonfatal venous thromboembolism in women using oral contraceptives with differing progestagen components. *Lancet*, **346**, 1589–1593
- John, E.M., Whittemore, A.S., Harris, R., Itnyre, J. & Collaborative Ovarian Cancer Group (1993) Characteristics relating to ovarian cancer risk: Collaborative analysis of seven US case-control studies. Epithelial ovarian cancer in black women. *J. natl Cancer Inst.*, **85**, 142–147
- Joosten, H.F.P., van Acker, F.A.A., van den Dobbelsteen, D.J., Horbach, G.J.M.J. & Krajnc, E.I. (2004) Genotoxicity of hormonal steroids. *Toxicol. Lett.*, **151**, 113–134

- Junod, S.W. & Marks, L. (2002) Women's trials: The approval of the first oral contraceptive pill in the United States and Great Britain. *J. Hist. Med. allied Sci.*, **57**, 117–160
- Kalandidi, A., Tzonou, A., Lipworth, L., Gamatsi, I., Filippa, D. & Trichopoulos, D. (1996) A case-control study of endometrial cancer in relation to reproductive, somatometric, and life-style variables. *Oncology*, **53**, 354–359
- Kampman, E., Bijl, A.J., Kok, C. & van't Veer, P. (1994) Reproductive and hormonal factors in male and female colon cancer. *Eur. J. Cancer Prev.*, **3**, 329–336
- Kampman, E., Potter, J.D., Slattery, M.L., Caan, B.J. & Edward S. (1997) Hormone replacement therapy, reproductive history, and colon cancer: A multicenter, case-control study in the United States. *Cancer Causes Control*, **8**, 146–158
- Karagas, M.R., Stukel, T.A., Dykes, J., Miglionico, J., Greene, M.A., Carey, M., Armstrong, B., Elwood, J.M., Gallagher, R.P., Green, A., Holly, E.A., Kirkpatrick, C.S., Mack, T., Østerlind, A., Rosso, S. & Swerdlow, A.J. (2002) A pooled analysis of 10 case-control studies of melanoma and oral contraceptive use. *Br. J. Cancer*, **86**, 1085–1092
- Kasper, P. (2001) Cyproterone acetate: A genotoxic carcinogen? *Pharmacol. Toxicol.*, **88**, 223–231
- Katsuki, Y., Sasagawa, S., Takano, Y., Shibutani, Y., Aoki, D., Udagawa, Y. & Nozawa, S. (1997a) Animal studies on the endocrinological profile of dienogest, a novel synthetic steroid. *Drugs exp. clin. Res.*, **23**, 45–62
- Katsuki, Y., Shibutani, Y., Aoki, D. & Nozawa, S. (1997b) Dienogest, a novel synthetic steroid, overcomes hormone-dependent cancer in a different manner than progestins. *Cancer*, **79**, 169–176
- Kaufman, D.W., Shapiro, S., Slone, D., Rosenberg, L., Miettinen, O.S., Stolley, P.D., Knapp, R.C., Leavitt, T., Jr, Watring, W.G., Rosenshein, N.B., Lewis, J.L., Jr, Schottenfeld, D. & Engle, R.L., Jr (1980) Decreased risk of endometrial cancer among oral-contraceptive users. *New Engl. J. Med.*, **303**, 1045–1047
- Kaufmann, G., Schlegel, J., Eychenne, B. & Schubert, K. (1983) Receptor binding of STS 557. *Exp. clin. Endocrinol.*, **81**, 222–227
- Kay, C.R. (1981) Malignant melanoma and oral contraceptives (Letter to the Editor). *Br. J. Cancer*, **44**, 479
- Kazmi, S.M., Visconti, V., Plante, R.K., Ishaque, A. & Lau, C. (1993) Differential regulation of human progesterone receptor A and B form-mediated *trans*-activation by phosphorylation. *Endocrinology*, **133**, 1230–1238
- Keam, S.J. & Wagstaff, A.J. (2003) Ethinylestradiol/drospirenone: A review of its use as an oral contraceptive. *Treat. Endocrinol.*, **2**, 49–70
- Kelsey, J.L., Livolsi, V.A., Holford, T.R., Fischer, D.B., Mostow, E.D., Schwartz, P.E., O'Connor, T. & White, C. (1982) A case-control study of cancer of the endometrium. *Am. J. Epidemiol.*, **116**, 333–342
- Ketting, E. (1988) The relative reliability of oral contraceptives; findings of an epidemiological study. *Contraception*, **37**, 343–348
- Kew, M.C., Song, E., Mohammed, A. & Hodgkinson, J. (1990) Contraceptive steroids as a risk factor for hepatocellular carcinoma: A case-control study in South African black women. *Hepatology*, **11**, 298–302
- Kirkpatrick, C.S., White, E. & Lee, J.A. (1994) Case-control study of malignant melanoma in Washington State. II. Diet, alcohol, and obesity. *Am. J. Epidemiol.*, **139**, 869–880

- Kopera, H. (1985) [Unintended effects of oral contraceptives. II. Progesterone-induced effects, drug-drug interactions]. *Wien. med. Wochenschr.*, **135**, 415–419 (in German)
- Koumantaki, Y., Tzonou, A., Koumantakis, E., Kaklamani, E., Aravantinos, D. & Trichopoulos, D. (1989) A case-control study of cancer of endometrium in Athens. *Int. J. Cancer*, **43**, 795–799
- Krattenmacher, R. (2000) Drospirenone: Pharmacology and pharmacokinetics of a unique progestogen. *Contraception*, **62**, 29–38
- Kreiger, N., Lacroix, J. & Sloan, M. (2001) Hormonal factors and pancreatic cancer in women. *Ann. Epidemiol.*, **11**, 563–567
- Kreuzer, M., Gerken, M., Heinrich, J., Kreienbrock, L. & Wichmann, H.-E. (2003) Hormonal factors and risk of lung cancer among women? *Int. epidemiol. Assoc.*, **32**, 263–271
- Kuhl, H. (1996) Comparative pharmacology of newer progestogens. *Drugs*, **51**, 188–215
- Kuhl, H., Jung-Hoffmann, C. & Heidt, F. (1988a) Serum levels of 3-keto-desogestrel and SHBG during 12 cycles of treatment with 30 µg ethinylestradiol and 150 µg desogestrel. *Contraception*, **38**, 381–390
- Kuhl, H., Jung-Hoffmann, C. & Heidt, F. (1988b) Alterations in the serum levels of gestodene and SHBG during 12 cycles of treatment with 30 micrograms ethinylestradiol and 75 micrograms gestodene. *Contraception*, **38**, 477–486
- Kuhnz, W., Humpel, M., Schutt, B., Louton, T., Steinberg, B. & Gansau, C. (1990a) Relative bioavailability of ethinyl estradiol from two different oral contraceptive formulations after single oral administration to 18 women in an intraindividual cross-over design. *Horm. Res.*, **33**, 40–44
- Kuhnz, W., Pfeffer, M. & Al Yacoub, G. (1990b) Protein binding of the contraceptive steroids gestodene, 3-keto-desogestrel and ethinylestradiol in human serum. *J. ster. Biochem.*, **35**, 313–318
- Kuhnz, W., Sostarek, D., Gansau, C., Louton, T. & Mahler, M. (1991) Single and multiple administration of a new triphasic oral contraceptive to women: Pharmacokinetics of ethinyl estradiol and free and total testosterone levels in serum. *Am. J. Obstet. Gynecol.*, **165**, 596–602
- Kuhnz, W., Al Yacoub, G. & Fuhrmeister, A. (1992) Pharmacokinetics of levonorgestrel and ethinylestradiol in 9 women who received a low-dose oral contraceptive over a treatment period of 3 months and, after a wash-out phase, a single oral administration of the same contraceptive formulation. *Contraception*, **46**, 455–469
- Kuhnz, W., Baumann, A., Staks, T., Dibbelt, L., Knuppen, R. & Jutting, G. (1993) Pharmacokinetics of gestodene and ethinylestradiol in 14 women during three months of treatment with a new tri-step combination oral contraceptive: Serum protein binding of gestodene and influence of treatment on free and total testosterone levels in the serum. *Contraception*, **48**, 303–322
- Kuhnz, W., Staks, T. & Jutting, G. (1994a) Pharmacokinetics of levonorgestrel and ethinylestradiol in 14 women during three months of treatment with a tri-step combination oral contraceptive: Serum protein binding of levonorgestrel and influence of treatment on free and total testosterone levels in the serum. *Contraception*, **50**, 563–579
- Kuhnz, W., Blode, H. & Mahler, M. (1994b) Systemic availability of levonorgestrel after single oral administration of a norgestimate-containing combination oral contraceptive to 12 young women. *Contraception*, **49**, 255–263
- Kuhnz, W., Heuner, A., Humpel, M., Seifert, W. & Michaelis, K. (1997) In vivo conversion of norethisterone and norethisterone acetate to ethinyl estradiol in postmenopausal women. *Contraception*, **56**, 379–385

- Kuiper, G.G.J.M., Enmark, E., Peltö-Huikko, M., Nilsson, S. & Gustafsson, J.A. (1996) Cloning of a novel estrogen receptor expressed in rat prostate and ovary. *Proc. natl Acad. Sci. USA*, **93**, 5925–5930
- Kuiper, G.G.J.M., Carlsson, B., Grandien, K., Enmark, E., Häggblad, J., Nilsson, S. & Gustafsson, J.-A. (1997) Comparison of the ligand binding specificity and transcript tissue distribution of estrogen receptors alpha and beta. *Endocrinology*, **138**, 863–870
- Kumar, N., Koide, S.S., Tsong, Y.-Y. & Sundaram, K. (2000) Nestorone®: A progestin with a unique pharmacological profile. *Steroids*, **65**, 629–636
- Kumle, M., Weiderpass, E., Braaten, T., Persson, I., Adami, H.-O. & Lund, E. (2002) Use of oral contraceptives and breast cancer risk: The Norwegian–Swedish Women’s Lifestyle and Health Cohort Study. *Cancer Epidemiol. Biomarkers Prev.*, **11**, 1375–1381
- Kumle, M., Alsaker, E. & Lund, E. (2003) [Use of oral contraceptives and risk of cancer, a cohort study.] *Tidsskr. Nor. Laegeforen.*, **123**, 1653–1656 (in Norwegian)
- Kumle, M., Weiderpass, E., Braaten, T., Adami, H.-O. & Lund, E. (2004) Risk for invasive and borderline epithelial ovarian neoplasias following use of hormonal contraceptives: The Norwegian–Swedish Women’s Lifestyle and Health Cohort Study. *Br. J. Cancer*, **90**, 1386–1391
- Kune, G.A., Kune, S. & Watson, L.F. (1990) Oral contraceptive use does not protect against large bowel cancer. *Contraception*, **41**, 19–25
- Lacey, J.V., Brinton, L.A., Abbas, F.M., Barnes, W.A., Gravitt, P.E., Greenberg, M.D., Green, S.M., Hadjimichael, O.C., McGowan, L., Mortel, R., Schwartz, P.E., Silverberg, S.G. & Hildesheim, A. (1999) Oral contraceptives as risk factors for cervical adenocarcinomas and squamous cell carcinomas. *Cancer Epidemiol. Biomarkers Prev.*, **8**, 1079–1085
- Langholz, B., Richardson, J., Rappaport, E., Waisman, J., Cockburn, M. & Mack, T. (2000) Skin characteristics and risk of superficial spreading and nodular melanoma (United States). *Cancer Causes Control*, **11**, 741–750
- Larrea, F., Garcia-Becerra, R., Lemus, A.E., Garcia, G.A., Pérez-Palacios, G., Jackson, K.J., Coleman, K.M., Dace, R., Smith, C.L. & Cooney, A.J. (2001) A-ring reduced metabolites of 19-nor synthetic progestins as subtype selective agonists for ER alpha. *Endocrinology*, **142**, 3791–3799
- La Vecchia, C., Decarli, A., Fasoli, M., Franceschi, S., Gentile, A., Negri, E., Parazzini, F. & Tognoni, G. (1986) Oral contraceptives and cancers of the breast and of the female genital tract. Interim results from a case-control study. *Br. J. Cancer*, **54**, 311–317
- La Vecchia, C., Negri, E., Levi, F., Decarli, A. & Boyle, P. (1998) Cancer mortality in Europe: Effects of age, cohort of birth and period of death. *Eur. J. Cancer*, **34**, 118–141
- La Vecchia, C., Ron, E., Franceschi, S., Dal Maso, L., Mark, S.D., Chatenoud, L., Braga, C., Preston-Martin, S., McTiernan, A., Kolonel, L., Mabuchi, K., Jin, F., Wingren, G., Galanti, M.R., Hallquist, A., Lund, E., Levi, F., Linos, D. & Negri, E. (1999) A pooled analysis of case-control studies of thyroid cancer. III. Oral contraceptives, menopausal replacement therapy and other female hormones. *Cancer Causes Control*, **10**, 157–166
- Lê, M.G., Cabanes, P.A., Desvignes, V., Chanteau, M.F., Mlika, N. & Avril, M.F. (1992) Oral contraceptive use and risk of cutaneous malignant melanoma in a case-control study of French women. *Cancer Causes Control*, **3**, 199–205
- Lemus, A.E., Santillán, R., Damián-Matsumura, P., Garcia, G.A., Grillasca, I. & Pérez-Palacios, G. (2001) In vitro metabolism of gestodene in target organs: Formation of A-ring reduced derivatives with oestrogenic activity. *Eur. J. Pharmacol.*, **417**, 249–256

- Lemus, A.E., Zaga, V., Santillán, R., Garcia, G.A., Grillasca, I., Damián-Matsumura, P., Jackson, K.J., Cooney, A.J., Larrea, F. & Pérez-Palacios, G. (2000) The oestrogenic effects of gestodene, a potent contraceptive progestin, are mediated by its A-ring reduced metabolites. *J. Endocrinol.*, **165**, 693–702
- Lepescheux, L., Secchi, J., Gaillard-Kelly, M. & Miller, P. (2001) Effects of 17 beta-estradiol and trimigestone alone, and in combination, on the bone and uterus of ovariectomized rats. *Gynecol. Endocrinol.*, **15**, 312–320
- Levi, F., La Vecchia, C., Gulie, C., Negri, E., Monnier, V., Franceschi, S., Delaloye, J.F. & De Grandi, P. (1991) Oral contraceptives and the risk of endometrial cancer. *Cancer Causes Control*, **2**, 99–103
- Levi, F., Pasche, C., Lucchini, F. & La Vecchia, C. (2003) Oral contraceptives and colorectal cancer. *Dig. Liver Dis.*, **35**, 85–87
- Levi, F., Lucchini, F., Negri, E., Boyle, P. & La Vecchia, C. (2004) Cancer mortality in Europe, 1995–1999, and an overview of trends since 1960. *Int. J. Cancer*, **110**, 155–169
- Lew, R.A., Sober, A.J., Cook, N., Marvell, R. & Fitzpatrick, T.B. (1983) Sun exposure habits in patients with cutaneous melanoma: A case-control study. *J. Dermatol. surg. Oncol.*, **9**, 981–986
- Loncar, D., Milosevic-Djordjevic, O., Zivanovic, A., Grujicic, D. & Arsenijevic, S. (2004) Effect of a low-dose ethinylestradiol and gestodene in combination on the frequency of micronuclei in human peripheral blood lymphocytes of healthy women in vivo. *Contraception*, **69**, 327–331
- Lubahn, D.B., Moyer, J.S., Golding, T.S., Couse, J.F., Korach, K.S. & Smithies, O. (1993) Alteration of reproductive function but not prenatal sexual development after insertional disruption of the mouse estrogen receptor gene. *Proc. natl Acad. Sci. USA*, **90**, 11162–11166
- Lüdicke, F., Johannisson, E., Helmerhorst, F.M., Campana, A., Foidart, J.-M. & Heithecker, R. (2001) Effect of a combined oral contraceptive containing 3 mg of drospirenone and 30 µg of ethinyl estradiol on the human endometrium. *Fertil. Steril.*, **76**, 102–107
- Lundberg, V., Tolonen, H., Stegmayr, B., Kuulasmaa, K. & Asplund, K. (2004) Use of oral contraceptives and hormone replacement therapy in the WHO MONICA project. *Maturitas*, **48**, 39–49
- Mack, W.J., Preston-Martin, S., Bernstein, L., Qian, D. & Xiang, M. (1999) Reproductive and hormonal risk factors for thyroid cancer in Los Angeles County females. *Cancer Epidemiol. Biomarkers Prev.*, **8**, 991–997
- Madeleine, M.M., Daling, J.R., Schwartz, S.M., Shera, K., McKnight, B., Carter, J.J., Wipf, G.C., Critchlow, C.W., McDougall, J.K., Porter, P. & Galloway, D.A. (2001) Human papillomavirus and long-term oral contraceptive use increase the risk of adenocarcinoma *in situ* of the cervix. *Cancer Epidemiol. Biomarkers Prev.*, **10**, 171–177
- Magnusson, C.M., Persson, I.R., Baron, J.A., Ekblom, A., Bergstrom, R. & Adami, H.-O. (1999) The role of reproductive factors and use of oral contraceptives in the aetiology of breast cancer in women aged 50 to 74 years. *Int. J. Cancer*, **80**, 231–236
- Mant, J.W.F. & Vessey, M.P. (1995) Trends in mortality from primary liver cancer in England and Wales 1975–92: Influence of oral contraceptives. *Br. J. Cancer*, **72**, 800–803
- Marchbanks, P.A., McDonald, J.A., Wilson, H.G., Folger, S.G., Mandel, M.G., Daling, J.R., Bernstein, L., Malone, K.E., Ursin, G., Strom, B.L., Norman, S.A. & Weiss, L.K. (2002) Oral contraceptives and the risk of breast cancer. *New Engl. J. Med.*, **346**, 2025–2032
- Martelli, A., Mattioli, F., Carrozzino, R., Ferraris, E., Marchese, M., Angiola, M. & Brambilla, G. (1999) Genotoxicity testing of potassium canrenoate in cultured rat and human cells. *Mutagenesis*, **14**, 463–472

- Martelli, A., Mattioli, F., Angiola, M., Reimann, R. & Brambilla, G. (2003) Species, sex and inter-individual differences in DNA repair induced by nine sex steroids in primary cultures of rat and human hepatocytes. *Mutat. Res.*, **536**, 69–78
- Martinez, M.E., Grodstein, F., Giovannucci, E., Colditz, G.A., Speizer, F.E., Hennekens, C., Rosner, B., Willett, W.C. & Stampfer, M.J. (1997) A prospective study of reproductive factors, oral contraceptive use, and risk of colorectal cancer. *Cancer Epidemiol. Biomarkers Prev.*, **6**, 1–5
- Mattioli, F., Garbero, C., Gosmar, M., Manfredi, V., Carrozzino, R., Martelli, A. & Brambilla, G. (2004) DNA fragmentation, DNA repair and apoptosis induced in primary rat hepatocytes by dienogest, dydrogesterone and 1,4,6-androstatriene-17beta-ol-3-one acetate. *Mutat. Res.*, **564**, 21–29
- McGuire, J.L., Phillips, A., Hahn, D.W., Tolman, E.L., Flor, S. & Kafrisen, M.E. (1990) Pharmacologic and pharmacokinetic characteristics of norgestimate and its metabolites. *Am. J. Obstet. Gynecol.*, **163**, 2127–2131
- McGuire, V., Felberg, A., Mills, M., Ostrow, K.L., DiCioccio, R., John, E.M., West, D.W. & Whittemore, A.S. (2004) Relation of contraceptive and reproductive history to ovarian cancer risk in carriers and noncarriers of BRCA1 gene mutations. *Am. J. Epidemiol.*, **160**, 613–618
- Meirik, O., Fraser, I.S. & d’Arcanges, C. for the WHO Consultation on Implantable Contraceptives for Women (2003) Implantable contraceptives for women. *Hum. Rep. Update*, **9**, 49–59
- Milewicz, T., Kolodziejczyk, J., Krzysiek, J., Basta, A., Sztefko, K., Kurek, S., Stachura, J. & Gregoraszczyk, E.L. (2002) Cyproterone, norethindrone, medroxyprogesterone and levonorgestrel are less potent local human growth hormone and insulin-like growth factor I secretion stimulators than progesterone in human breast cancer explants expressing the estrogen receptor. *Gynecol. Endocrinol.*, **16**, 319–329
- Mills, P.K., Riordan, D.G. & Cress, R.D. (2004) Epithelial ovarian cancer risk by invasiveness and cell type in the Central Valley of California. *Gynecol. Oncol.*, **95**, 215–225
- Mitsumori, K., Shimo, T., Onodera, H., Takagi, H., Yasuhara, K., Tamura, T., Aoki, Y., Nagata, O. & Hirose, M. (2000) Modifying effects of ethinylestradiol but not methoxychlor on N-ethyl-N-nitrosourea-induced uterine carcinogenesis in heterozygous *p53*-deficient CBA mice. *Toxicol. Sci.*, **58**, 43–49
- Modan, B., Hartge, P., Hirsh-Yechezkel, G., Chetrit, A., Lubin, F., Beller, U., Ben-Baruch, G., Fishman, A., Menczer, J., Ebbers, S.M., Tucker, M.A., Wacholder, S., Struewing, J.P., Friedman, E., Piura, B. & the National Israel Ovarian Cancer Study Group (2001) Parity, oral contraceptives, and the risk of ovarian cancer among carriers and noncarriers of a BRCA1 or BRCA2 mutation. *New Engl. J. Med.*, **345**, 235–240
- Modugno, F., Ness, R.B. & Wheeler, J.E. (2001) Reproductive risk factors for epithelial ovarian cancer according to histologic type and invasiveness. *Ann. Epidemiol.*, **11**, 568–574
- Modugno, F., Ness, R.B., Allen, G.O., Schildkraut, J.M., Davis, F.G. & Goodman, M.T. (2004) Oral contraceptive use, reproductive history, and risk of epithelial ovarian cancer in women with and without endometriosis. *Am. J. Obstet. Gynecol.*, **191**, 733–740
- Moerman, C.J., Bueno de Mesquita, H.B. & Runia, S. (1994) Smoking, alcohol consumption and the risk of cancer of the biliary tract; a population-based case-control study in The Netherlands. *Eur. J. Cancer Prev.*, **3**, 427–436
- Molano, M., van den Brule, A., Plummer, M., Weiderpass, E., Posso, H., Arslan, A., Meijer, C.J.L.M., Muñoz, N., Franceschi, S. & the HPV Study Group (2003) Determinants of clearance

- of human papillomavirus infections in Colombian women with normal cytology: A population-based, 5-year follow-up study. *Am. J. Epidemiol.*, **158**, 486–494
- Monsonogo, J., Magdelenat, H., Catalan, F., Coscas, Y., Zerat, L. & Sastre, X. (1991) Estrogen and progesterone receptors in cervical human papillomavirus related lesions. *Int. J. Cancer*, **48**, 533–539
- Morales-Peza, N., Auewarakul, P., Juarez, V., Garcia-Carranca, A. & Cid-Arregui, A. (2002) *In vivo* tissue-specific regulation of the human papillomavirus type 18 early promoter by estrogen, progesterone, and their antagonists. *Virology*, **294**, 135–140
- Moreno, V., Bosch, F.X., Muñoz, N., Meijer, C.J.L.M., Shah, K.V. Walboomers, J.M.M., Herrero, R. & Franceschi, S. (2002) Effect of oral contraceptives on risk of cervical cancer in women with human papillomavirus infection: The IARC multicentric case-control study. *Lancet*, **359**, 1085–1092
- Mosselman, S., Polman, J. & Dijkema, R. (1996) ER beta: Identification and characterization of a novel human estrogen receptor. *FEBS Lett.*, **392**, 49–53
- Moyer, D.L. & Felix, J.C. (1998) The effects of progesterone and progestins on endometrial proliferation. *Contraception*, **57**, 399–403
- Muhn, P., Krattenmacher, R. Beier, S., Elger, W. & Schillinger, E. (1995) Drospirenone: A novel progestogen with antimineralocorticoid and antiandrogenic activity. Pharmacological characterization in animal models. *Contraception*, **51**, 99–110
- Nakamura, M., Katsuki, Y., Shibutani, Y. & Oikawa, T. (1999) Dienogest, a synthetic steroid, suppresses both embryonic and tumor-cell-induced angiogenesis. *Eur. J. Pharmacol.* **386**, 33–40
- Nakayama, Y., Sakamoto, H., Satoh, K. & Yamamoto, T. (2000) Tamoxifen and gonadal steroids inhibit colon cancer growth in association with inhibition of thymidylate synthase, survivin and telomerase expression through estrogen receptor beta mediated system. *Cancer Lett.*, **161**, 63–71
- Naldi, L., Altieri, A., Imberti, G.L., Giordano, L., Gallus, S. & La Vecchia, C. on behalf of the Oncology Study Group of the Italian Group for Epidemiologic Research in Dermatology (GISED) (2005) Cutaneous malignant melanoma in women. Phenotypic characteristics, sun exposure, and hormonal factors: A case-control study from Italy. *Ann. Epidemiol.*, **15**, 545–550
- Nanda, K., Bastian, L.A., Hasselblad, V. & Simel, D.L. (1999) Hormone replacement therapy and the risk of colorectal cancer: A meta-analysis. *Obstet. Gynecol.* **93**, 880–888
- Narod, S.A., Risch, H., Moslehi, R., Dorum, A., Neuhausen, S., Olsson, H., Provencher, D., Radice, P., Evans, G., Bishop, S., Brunet, J.-S. & Ponder, B.A.J. for the Hereditary Ovarian Cancer Clinical Study Group (1998) Oral contraceptives and the risk of hereditary ovarian cancer. *New Engl. J. Med.*, **339**, 424–428
- Narod, S.A., Dube, M.P., Klijn, J., Lubinski, J., Lynch, H.T., Ghadirian, P., Provencher, D., Heimdal, K., Moller, P., Robson, M., Offit, K., Isaacs, C., Weber, B., Friedman, E., Gershoni-Baruch, R., Rennert, G., Pasini, B., Wagner, T., Daly, M., Garber, J.E., Neuhausen, S.L., Ainsworth, P., Olsson, H., Evans, G., Osborne, M., Couch, F., Foulkes, W.D., Warner, E., Kim-Sing, C., Olopade, O., Tung, N., Saal, H.M., Weitzel, J., Merajver, S., Gauthier-Villars, M., Jernstrom, H., Sun, P. & Brunet, J.-S. (2002) Oral contraceptives and the risk of breast cancer in BRCA1 and BRCA2 mutation carriers. *J. natl Cancer Inst.*, **94**, 1773–1779
- Nelson, R.A., Levine, A.M. & Bernstein, L. (2001) Reproductive factors and risk of intermediate- or high-grade B-cell non-Hodgkin's lymphoma in women. *J. clin. Oncol.*, **19**, 1381–1387
- Ness, R.B., Grisso, J.A., Klapper, J., Schlesselman, J.J., Silberzweig, S., Vergona, R., Morgan, M., Wheeler, J.E. & the SHARE Study Group (2000) Risk of ovarian cancer in relation to estrogen

- and progestin dose and use characteristics of oral contraceptives. *Am. J. Epidemiol.*, **152**, 233–241
- Ness, R.B., Grisso, J.A., Vergona, R., Klapper, J., Morgan, M. & Wheeler, J.E. for the Study of Health and Reproduction (SHARE) Study Group (2001) Oral contraceptives, other methods of contraception, and risk reduction for ovarian cancer. *Epidemiology*, **12**, 307–312
- Neuberger, J., Forman, D., Doll, R. & Williams, R. (1986) Oral contraceptives and hepatocellular carcinoma. *Br. med. J.*, **292**, 1355
- Newbold, R.R. & Liehr, J.G. (2000) Induction of uterine adenocarcinoma in CD-1 mice by catechol estrogens. *Cancer Res.*, **60**, 235–237
- Newbold, R.R., Bullock, B.C. & McLachlan, J.A. (1990) Uterine adenocarcinoma in mice following developmental treatment with estrogens: A model for hormonal carcinogenesis. *Cancer Res.*, **50**, 7677–7681
- Newcomb, P.A. & Trentham-Dietz, A. (2003) Patterns of postmenopausal progestin use with estrogen in relation to endometrial cancer (United States). *Cancer Causes Control*, **14**, 195–201
- Newcomer, L.M., Newcomb, P.A., Trentham-Dietz, A., Longnecker, M.P. & Greenberg, E.R. (2003) Oral contraceptive use and risk of breast cancer by histologic type. *Int. J. Cancer*, **106**, 961–964
- Newfield, L., Bradlow, H.L., Sepkovic, D.W. & Auborn, K. (1998) Estrogen metabolism and the malignant potential of human papillomavirus immortalized keratinocytes. *Proc. Soc. exp. Biol. Med.*, **217**, 322–326
- Nichols, H.B., Trentham-Dietz, A., Hampton, J.M. & Newcomb, P.A. (2005) Oral contraceptive use, reproductive factors, and colorectal cancer risk: Findings from Wisconsin. *Cancer Epidemiol. Biomarkers Prev.*, **14**, 1212–1218
- Nonogaki, H., Fujii, S., Konishi, I., Nanbu, Y., Ozaki, S., Ishikawa, Y. & Mori, T. (1990) Estrogen receptor localization in normal and neoplastic epithelium of the uterine cervix. *Cancer*, **66**, 2620–2627
- Norman, S.A., Berlin, J.A., Weber, A.L., Strom, B.L., Daling, J.R., Weiss, L.K., Marchbanks, P.A., Bernstein, L., Voigt, L.F., McDonald, J.A., Ursin, G., Liff, J.M., Burkman, R.T., Malone, K.E., Simon, M.S., Folger, S.G., Deapen, D., Wingo, P.A. & Spirtas, R. (2003) Combined effect of oral contraceptive use and hormone replacement therapy on breast cancer risk in postmenopausal women. *Cancer Causes Control*, **14**, 933–943
- Odlind, V., Weiner, E., Victor, A. & Johansson, E.D.B. (1979) Plasma levels of norethindrone after single oral dose administration of norethindrone and lynestrenol. *Clin. Endocrinol.*, **10**, 29–38
- Oehler, M.K., MacKenzie, I.Z., Wallwiener, D., Bicknell, R. & Rees, M.C.P. (2002) Wnt-7a is up-regulated by norethisterone in human endometrial epithelial cells: A possible mechanism by which progestogens reduce the risk of estrogen-induced endometrial neoplasia. *Cancer Lett.*, **186**, 75–81
- Oelkers, W. (2004) Drospirenone, a progestogen with antimineralocorticoid properties: A short review. *Mol. cell. Endocrinol.*, **217**, 255–261
- Oettel, M., Bervoas-Martin, E.W., Golbs, S., Hobe, G., Kaufmann, G., Mathieu, M., Moore, C., Puri, C., Ritter, P., Reddersen, G., Schön, R., Strauch, G. & Zimmermann, H. (1995) A 19-nor-progestin without a 17 α -ethinyl group. I. Dienogest from a pharmacokinetic point of view. *Drugs Today*, **31**, 499–516
- Olshan, A.F., Smith, J., Cook, M.N., Grufferman, S., Pollock, B.H., Stram, D.O., Seeger, R.C., Look, A.T., Cohn, S.L., Castleberry, R.P. & Bondy, M.L. (1999) Hormone and fertility drug

- use and the risk of neuroblastoma: A report from the Children's Cancer Group and the Pediatric Oncology Group. *Am. J. Epidemiol.*, **150**, 930–938
- Oosterbaan, H.P. (1999) An open-label study of the effects of a 24-day regimen of gestodene 60 µg/ethinylestradiol 15 µg on endometrial histological findings in healthy women. *Eur. J. Contracept. reprod. Health Care*, **4**, 3–8
- Orme, M., Back, D.J., Ward, S. & Green, S. (1991) The pharmacokinetics of ethinylestradiol in the presence and absence of gestodene and desogestrel. *Contraception*, **43**, 305–316
- Østerlind, A., Tucker, M.A., Stone, B.J. & Jensen, O.M. (1988) The Danish case-control study of cutaneous malignant melanoma. III. Hormonal and reproductive factors in women. *Int. J. Cancer*, **42**, 821–824
- Pakarinen, P., Lahteenmaki, P. & Rutanen, E.-M. (1999) The effect of intrauterine and oral levonorgestrel administration on serum concentrations of sex hormone-binding globulin, insulin and insulin-like growth factor binding protein-1. *Acta obstet. gynaecol. scand.*, **78**, 423–428
- Palmer, J.R., Rosenberg, L., Kaufman, D.W., Warshauer, M.E., Stolley, P. & Shapiro, S. (1989) Oral contraceptive use and liver cancer. *Am. J. Epidemiol.*, **130**, 878–882
- Palmer, J.R., Rosenberg, L., Strom, B.L., Harlap, S., Zauber, A.G., Warshauer, E.M. & Shapiro, S. (1992) Oral contraceptive use and risk of cutaneous malignant melanoma. *Cancer Causes Control*, **3**, 547–554
- Palmer, J.R., Driscoll, S.G., Rosenberg, L., Berkowitz, R.S., Lurain, J.R., Soper, J., Twigg, L.B., Gershenson, D.M., Kohorn, E.I., Berman, M., Shapiro, S. & Rao, R.S. (1999) Oral contraceptive use and risk of gestational trophoblastic tumors. *J. natl Cancer Inst.*, **91**, 635–640
- Parazzini, F., La Vecchia, C., Negri, E., Bocciolone, L., Fedele, L. & Franceschi, S. (1991a) Oral contraceptives use and the risk of ovarian cancer: An Italian case-control study. *Eur. J. Cancer*, **27**, 594–598
- Parazzini, F., Restelli, C., La Vecchia, C., Negri, E., Chiari, S., Maggi, R. & Mangioni, C. (1991b) Risk factors for epithelial ovarian tumours of borderline malignancy. *Int. J. Epidemiol.*, **20**, 871–877
- Parazzini, F., La Vecchia, C., Negri, E. & Villa, A. (1994) Estrogen replacement therapy and ovarian cancer risk. *Int. J. Cancer*, **57**, 135–136
- Parazzini, F., Cipriani, S., Mangili, G., Garavaglia, E., Guarnerio, P., Ricci, E., Benzi, G., Salerio, B., Polverino, G. & La Vecchia, C. (2002) Oral contraceptives and risk of gestational trophoblastic disease. *Contraception*, **65**, 425–427
- Parazzini, F., Chiaffarino, F., Negri, E., Surace, M., Benzi, G., Franceschi, S., Fedele, L. & La Vecchia, C. (2004) Risk factors for different histological types of ovarian cancer. *Int. J. Gynecol. Cancer*, **14**, 431–436
- Parkin, D.M., Srivatanakul, P., Khlai, M., Chenvidhya, D., Chotiwan, P., Insiripong, S., L'Abbé, K.A. & Wild, C.P. (1991) Liver cancer in Thailand. I. A case-control study of cholangiocarcinoma. *Int. J. Cancer*, **48**, 323–328
- Parslov, M., Lidegaard, O., Klinton, S., Pedersen, B., Jonsson, L., Eriksen, P.S. & Ottesen, B. (2000) Risk factors among young women with endometrial cancer: A Danish case-control study. *Am. J. Obstet. Gynecol.*, **182**, 23–29
- Persson, I., Schmidt, M., Adami, H.-O., Bergstrom, R., Pettersson, B. & Sparen, P. (1990) Trends in endometrial cancer incidence and mortality in Sweden, 1960–84. *Cancer Causes Control*, **1**, 201–208

- Peters, R.K., Pike, M.C., Chang, W.W.L. & Mack, T.M. (1990) Reproductive factors and colon cancers. *Br. J. Cancer*, **61**, 741–748
- Pettersson, B., Adami, H.-O., Bergström, R. & Johansson, E.D.B. (1986) Menstruation span — A time-limited risk factor for endometrial carcinoma. *Acta Obstet. Gynecol. Scand.*, **65**, 247–255
- Piccinino, L.J. & Mosher, W.D. (1998) Trends in contraceptive use in the United States: 1982–1995. *Fam. Plann. Perspect.*, **30**, 4–10
- Piérard-Franchimont, C., Gaspard, U., Lacante, P., Rhoa, M., Slachmuylders, P. & Piérard, G.E. (2000) A quantitative biometrological assessment of acne and hormonal evaluation in young women using a triphasic low-dose oral contraceptive containing gestodene. *Eur. J. Contracept. reprod. Health Care*, **5**, 275–286
- Pietras, R.J., Nemere, I. & Szego, C.M. (2001) Steroid hormone receptors in target cell membranes. *Endocrine*, **14**, 417–427
- Pihan, G.A., Purohit, A., Wallace, J., Knecht, H., Woda, B., Quesenberry, P. & Doxsey, S.J. (1998) Centrosome defects and genetic instability in malignant tumors. *Cancer Res.*, **58**, 3974–3985
- Pike, M.C., Pearce, C.L., Peters, R., Cozen, W., Wan, P. & Wu, A.H. (2004) Hormonal factors and the risk of invasive ovarian cancer: A population-based case-control study. *Fertil. Steril.*, **82**, 186–195
- Pollow, K., Juchem, M., Elger, W., Jacobi, N., Hoffmann, G. & Mobus, V. (1992) Dihydrospirorenone (ZK30595): A novel synthetic progestagen — characterization of binding to different receptor proteins. *Contraception*, **46**, 561–574
- Polychronopoulou, A., Tzonou, A., Hsieh, C., Kaprinis, G., Rebelakos, A., Toupadaki, N. & Trichopoulos, D. (1993) Reproductive variables, tobacco, ethanol, coffee and somatometry as risk factors for ovarian cancer. *Int. J. Cancer*, **55**, 402–407
- Potter, J.D. & McMichael, A.J. (1983) Large bowel cancer in women in relation to reproductive and hormonal factors: A case-control study. *J. natl Cancer Inst.*, **71**, 703–709
- Purdie, D., Green, A., Bain, C., Siskind, V., Ward, B., Hacker, N., Quinn, M., Wright, G., Russell, P. & Susil, B. for the Survey of Women's Health Group (1995) Reproductive and other factors and risk of epithelial ovarian cancer: An Australian case-control study. *Int. J. Cancer*, **62**, 678–684
- Purdie, D.M., Siskind, V., Bain, C.J., Webb, P.M. & Green, A.C. (2001) Reproduction-related risk factors for mucinous and nonmucinous epithelial ovarian cancer. *Am. J. Epidemiol.*, **153**, 860–864
- Rabe, T., Bohlmann, M.K., Rehberger-Schneider, S. & Prifti, S. (2000) Induction of estrogen receptor-alpha and -beta activities by synthetic progestins. *Gynecol. Endocrinol.*, **14**, 118–126
- Ramcharan S., Pellegrin, F.A., Ray, R. & Hsu, J.P. (1981) *The Walnut Creek Contraceptive Study. A Prospective Study of the Side Effects of Oral Contraceptives*, Vol. III (NIH Publ. No. 81-564), Bethesda, MD, National Institutes of Health
- Razandi, M., Pedram, A., Park, S.T. & Levin, E.R. (2003) Proximal events in signaling by plasma membrane estrogen receptors. *J. biol. Chem.*, **278**, 2701–2712
- Richardson, H., Abrahamowicz, M., Tellier, P.-P., Kelsall, G., du Berger, R., Ferenczy, A., Coutlée, F. & Franco, E.L. (2005) Modifiable risk factors associated with clearance of type-specific cervical human papillomavirus infections in a cohort of university students. *Cancer Epidemiol. Biomarkers*, **14**, 1149–1156

- Riley, R.R., Duensing, S., Brake, T., Munger, K., Lambert, P.F. & Arbeit, J.M. (2003) Dissection of human papillomavirus E6 and E7 function in transgenic mouse models of cervical carcinogenesis. *Cancer Res.*, **63**, 4862–4871
- Riman, T., Dickman, P.W., Nilsson, S., Correia, N., Nordlinder, H., Magnusson, C.M. & Persson, I.R. (2001) Risk factors for epithelial borderline ovarian tumors: Results of a Swedish case-control study. *Gynecol. Oncol.*, **83**, 575–585
- Riman, T., Dickman, P.W., Nilsson, S., Correia, N., Nordlinder, H., Magnusson, C.M. & Persson, I.R. (2002) Risk factors for invasive epithelial ovarian cancer: Results from a Swedish case-control study. *Am. J. Epidemiol.*, **156**, 363–373
- Risch, H.A., Weiss, N.S., Lyon, J.L., Daling, J.R. & Liff, J.M. (1983) Events of reproductive life and the incidence of epithelial ovarian cancer. *Am. J. Epidemiol.*, **117**, 128–139
- Risch, H.A., Marrett, L.D. & Howe, G.R. (1994) Parity, contraception, infertility, and the risk of epithelial ovarian cancer. *Am. J. Epidemiol.*, **140**, 585–597
- Risch, H.A., Marrett, L.D., Jain, M. & Howe, G.R. (1996) Differences in risk factors for epithelial ovarian cancer by histologic type. Results of a case-control study. *Am. J. Epidemiol.*, **144**, 363–372
- Rodriguez, G.C., Walmer, D.K., Cline, M., Krigman, H., Lessey, B.A., Whitaker, R.S., Dodge, R. & Hughes, C.L. (1998) Effect of progestin on the ovarian epithelium of macaques: Cancer prevention through apoptosis? *J. Soc. gynecol. Invest.*, **5**, 271–276
- Rodriguez, G.C., Nagarsheth, N.P., Lee, K.L., Bentley, R.C., Walmer, D.K., Cline, M., Whitaker, R.S., Isner, P., Berchuck, A., Dodge, R.K. & Hughes, C.L. (2002) Progestin-induced apoptosis in the Macaque ovarian epithelium: Differential regulation of transforming growth factor-beta. *J. natl Cancer Inst.*, **94**, 50–60
- Rooks, J.B., Ory, H.W., Ishak, K.G., Strauss, L.T., Greenspan, J.R., Hill, A.P. & Tyler, C.W. (1979) Epidemiology of hepatocellular adenoma. The role of oral contraceptive use. *J. Am. med. Assoc.*, **242**, 644–648
- Rosenberg, L., Shapiro, S., Slone, D., Kaufman, D.W., Helmrich, S.P., Miettinen, P.S., Stolley, P.D., Rosenshein, N.B., Schottenfeld, D. & Engle, R.L., Jr (1982) Epithelial ovarian cancer and combination oral contraceptives. *J. Am. med. Assoc.*, **247**, 3210–3212
- Rosenberg, L., Palmer, J.R., Zauber, A.G., Warshauer, M.E., Lewis, J.L., Jr, Strom, B.L., Harlap, S. & Shapiro, S. (1994) A case-control study of oral contraceptive use and invasive epithelial ovarian cancer. *Am. J. Epidemiol.*, **139**, 654–661
- Rosenblatt, K.A., Thomas, D.B. & The WHO Collaborative Study of Neoplasia and Steroid Contraceptives (1991) Hormonal content of combined oral contraceptives in relation to the reduced risk of endometrial carcinoma. *Int. J. Cancer*, **49**, 870–874
- Rosenblatt, K.A., Carter, J.J., Iwasaki, L.M., Galloway, D.A. & Stanford, J.L. (2004) Contraceptive methods and induced abortions and their association with the risk of colon cancer in Shanghai, China. *Eur. J. Cancer*, **40**, 590–593
- Ross, J., Hardee, K., Mumford, E. & Eid, S. (2002) Contraceptive method choice in developing countries. *Int. Fam. Plann. Perspect.*, **28**, 32–40
- Rossing, M.A., Voigt, L.F., Wicklund, K.G., Williams, M. & Daling, J.R. (1998) Use of exogenous hormones and risk of papillary thyroid cancer (Washington, United States). *Cancer Causes Control*, **9**, 341–349
- Royar, J., Becher, H. & Chang-Claude, J. (2001) Low-dose oral contraceptives: Protective effect on ovarian cancer risk. *Int. J. Cancer*, **95**, 370–374

- Rübig, A. (2003) Drospirenone: A new cardiovascular-active progestin with antiandosterone and antiandrogenic properties. *Climacteric*, **6** (Suppl. 3), 49–54
- Russo, I.H. & Russo, J. (1996) Mammary gland neoplasia in long-term rodent studies. *Environ. Health Perspect.*, **104**, 938–967
- Sager, G., Orbo, A., Jaeger, R. & Engström, C. (2003) Non-genomic effects of progestins — Inhibition of cell growth and increased intracellular levels of cyclic nucleotides. *J. ster. Biochem. mol. Biol.*, **84**, 1–8
- Sakoda, L.C. & Horn-Ross, P.L. (2002) Reproductive and menstrual history and papillary thyroid cancer risk: The San Francisco Bay Area Thyroid Cancer Study. *Cancer Epidemiol. Biomarkers Prev.*, **11**, 51–57
- Salazar, E.L., Mercado, E., Sojo, I. & Salcedo, M. (2001) Relationship between estradiol 16 alpha-hydroxylation and human papillomavirus infection in cervical cell transformation. *Gynecol. Endocrinol.*, **15**, 335–340
- Salazar-Martinez, E., Lazcano-Ponce, E.C., Gonzalez Lira-Lira, G., Escudero-De Los, R.P., Salmeron-Castro, J. & Hernandez-Avila, M. (1999) Reproductive factors of ovarian and endometrial cancer risk in a high fertility population in Mexico. *Cancer Res.*, **59**, 3658–3662
- Salmen, T., Heikkinen, A.-M., Mahonen, A., Kroger, H., Komulainen, M., Pallonen, H., Saarikoski, S., Honkanen, R. & Maenpää, P.H. (2003) Relation of aromatase gene polymorphism and hormone replacement therapy to serum estradiol levels, bone mineral density, and fracture risk in early postmenopausal women. *Ann. Med.*, **35**, 282–288
- Santillán, R., Pérez-Palacios, G., Reyes, M., Damian-Matsumura, P., Garcia, G.A., Grillasca, I. & Lemus, A.E. (2001) Assessment of the oestrogenic activity of the contraceptive progestin levonorgestrel and its non-phenolic metabolites. *Eur. J. Pharmacol.*, **427**, 167–174
- dos Santos Silva, I. & Swerdlow, A.J. (1995) Recent trends in incidence of and mortality from breast, ovarian and endometrial cancers in England and Wales and their relation to changing fertility and oral contraceptive use. *Br. J. Cancer*, **72**, 485–492
- Sarkar, N.N. (2003) Steroidal contraceptive vaginal rings. *Int. J. clin. Pract.*, **57**, 392–395
- Schiff, D., Suman, V.J., Yang, P., Rocca, W.A. & O'Neill, B.P. (1998) Risk factors for primary central nervous system lymphoma. *Cancer*, **82**, 975–982
- Schildkraut, J.M., Calingaert, B., Marchbanks, P.A., Moorman, P.G. & Rodriguez, G.C. (2002) Impact of progestin and estrogen potency in oral contraceptives on ovarian cancer risk. *J. natl Cancer Inst.*, **94**, 32–38
- Schindler, A.E., Campagnoli, C., Druckmann, R., Huber, J., Pasqualini, J.R., Schweppe, K.W. & Thijssen, J.H.H. (2003) Classification and pharmacology of progestins. *Maturitas*, **46** (Suppl. 1), 7–16
- Schlesselman, J.J., Stadel, B.V., Korper, M., Yu, W. & Wingo, P.A. (1992) Breast cancer detection in relation to oral contraception. *J. clin. Epidemiol.*, **45**, 449–459
- Schoonen, W.G.E.J., Dijkema, R., de Ries, R.J.H., Wagenaars, J.L., Joosten, J.W.H., de Gooyer, M.E., Deckers, G.H. & Kloosterboer, H.J. (1998) Human progesterone receptor A and B isoforms in CHO cells. II. Comparison of binding, transactivation and ED₅₀ values of several synthetic (anti)progestagens *in vitro* in CHO and MCF-7 cells and *in vivo* in rabbits and rats. *J. Ster. Biochem. mol. Biol.*, **64**, 157–170
- Schoonen, W.G.E.J., Deckers, G., de Gooijer, M.E., de Ries, R., Mathijssen-Mommers, G., Hamersma, H. & Kloosterboer, H.J. (2000) Contraceptive progestins. Various 11-substituents

- combined with four 17-substituents: 17 α -Ethinyl, five- and six-membered spiromethylene ethers or six-membered spiromethylene lactones. *J. ster. Biochem. mol. Biol.*, **74**, 109–123
- Schütz, J., Kaletsch, U., Meinert, R., Kaatsch, P., Spix, C. & Michaelis, J. (2001) Risk factors for neuroblastoma at different stages of disease. Results from a population-based case–control study in Germany. *J. clin. Epidemiol.*, **54**, 702–709
- Seeger, H., Wallwiener, D. & Mueck, A.O. (2003) The effect of progesterone and synthetic progestins on serum- and estradiol-stimulated proliferation of human breast cancer cells. *Horm. Metab. Res.*, **35**, 76–80
- Shampo, M.A. & Kyle, R.A. (2004) John Rock: Pioneer in the development of oral contraceptives. *Mayo Clin. Proc.*, **79**, 844
- Shapiro, S., Rosenberg, L., Hoffman, M., Truter, H., Cooper, D., Rao, S., Dent, D., Gudgeon, A., van Zyl, J., Katzenellenbogen, J. & Baillie, R. (2000) Risk of breast cancer in relation to the use of injectable progestogen contraceptives and combined estrogen/progestogen contraceptives. *Am. J. Epidemiol.*, **151**, 396–403
- Shapiro, S., Rosenberg, L., Hoffman, M., Kelly, J.P., Cooper, D.D., Carrara, H., Denny, L.E., du Toit, G., Allan, B.R., Stander, J.A. & Williamson, A.L. (2003) Risk of invasive cancer of the cervix in relation to the use of injectable progestogen contraceptives and combined estrogen/progestogen oral contraceptives (South Africa). *Cancer Causes Control*, **14**, 485–495
- Shenfield, G.M. (1993) Oral contraceptives. Are drug interactions of clinical significance? *Drug Saf.*, **9**, 21–37
- Shields, T.S., Brinton, L.A., Burk, R.D., Wang, S.S., Weinstein, S.J., Ziegler, R.G., Studentsov, Y.Y., McAdams, M. & Schiffman, M. (2004) A case–control study of risk factors for invasive cervical cancer among US women exposed to oncogenic types of human papillomavirus. *Cancer Epidemiol. Biomarkers Prev.*, **13**, 1574–1582
- Shields-Botella, J., Duc, I., Duranti, E., Puccio, F., Bonnet, P., Delansorne, R. & Paris, J. (2003) An overview of nomegestrol acetate selective receptor binding and lack of estrogenic action on hormone-dependent cancer cells. *J. ster. Biochem. mol. Biol.*, **87**, 111–122
- Shu, X.O., Brinton, L.A., Gao, Y.T. & Yuan, J.M. (1989) Population-based case–control study of ovarian cancer in Shanghai. *Cancer Res.*, **49**, 3670–3674
- Shu, X.O., Brinton, L.A., Zheng, W., Gao, Y.T., Fan, J. & Fraumeni, J.F., Jr (1991) A population-based case–control study of endometrial cancer in Shanghai, China. *Int. J. Cancer*, **49**, 38–43
- Siddique, Y.H. & Afzal, M. (2004) Evaluation of genotoxic potential of synthetic progestin chlormadinone acetate. *Toxicol. Lett.*, **153**, 221–225
- Siddique, Y.H., Beg, T. & Afzal, M. (2005) Genotoxic potential of ethinylestradiol in cultured mammalian cells. *Chem.-biol. Interact.*, **151**, 133–141
- Silins, I., Wang, X., Tadesse, A., Jansen, K.U., Schiller, J.T., Avall-Lundqvist, E., Frankendal, B. & Dillner, J. (2004) A population-based study of cervical carcinoma and HPV infection in Latvia. *Gynecol. Oncol.*, **93**, 484–492
- Singh, S., Poulosom, R., Hanby, M.A., Rogers, L.A., Wright, N.A., Sheppard, M.C. & Langman, M.J.S. (1998) Expression of oestrogen receptor and oestrogen-inducible genes pS2 and ERD5 in large bowel mucosa and cancer. *J. Pathol.*, **184**, 153–160
- Sisenwine, S.F., Kimmel, H.B., Liu, A.L. & Ruelius, H.W. (1975a) Excretion and stereoselective biotransformations of *dl*-, *d*- and *l*-norgestrel in women. *Drug Metab. Dispos.*, **3**, 180–188
- Sisenwine, S.F., Kimmel, H.B., Liu, A.L. & Ruelius, H.W. (1975b) The presence of *dl*-, *d*- and *l*-norgestrel and their metabolites in the plasma of women. *Contraception*, **12**, 339–353

- Siskind, V., Green, A., Bain, C. & Purdie, D. (2000) Beyond ovulation: Oral contraceptives and epithelial ovarian cancer. *Epidemiology*, **11**, 106–110
- Sitruk-Ware, R. (2002) Progestogens in hormonal replacement therapy: New molecules, risks, and benefits. *Menopause*, **9**, 6–15
- Sitruk-Ware, R. (2004a) New progestogens: A review of their effects in perimenopausal and postmenopausal women. *Drugs Aging*, **21**, 865–883
- Sitruk-Ware, R. (2004b) Pharmacological profile of progestins. *Maturitas*, **47**, 277–283
- Skinner, H.G., Michaud, D.S., Colditz, G.A., Giovannucci, E.L., Stampfer, M.J., Willett, W.C. & Fuchs, C.S. (2003) Parity, reproductive factors, and the risk of pancreatic cancer in women. *Cancer Epidemiol. Biomarkers Prev.*, **12**, 433–438
- Slattery, M.L., Samowitz, W.S. & Holden, J.A. (2000) Estrogen and progesterone receptors in colon tumors. *Am. J. clin. Pathol.*, **113**, 364–368
- Smirnoff, P., Liel, Y., Gnainsky, J., Shany, S. & Schwartz, B. (1999) The protective effect of estrogen against chemically induced murine colon carcinogenesis is associated with decreased CpG island methylation and increased mRNA and protein expression of the colonic vitamin D receptor. *Oncol. Res.*, **11**, 255–264
- Smith, M.A., Fine, J.A., Barnhill, R.L. & Berwick, M. (1998) Hormonal and reproductive influences and risk of melanoma in women. *Int. epidemiol. Assoc.*, **27**, 751–757
- Smith, J.S., Green, J., Berrington de Gonzalez, A., Appleby, P., Peto, J., Plummer, M., Franceschi, S. & Beral, V. (2003) Cervical cancer and use of hormonal contraceptives: A systematic review. *Lancet*, **361**, 1159–1167
- Song, R.X., Santen, R.J., Kumar, R., Adam, L., Jeng, M.-H., Masamura, S. & Yue, W. (2002) Adaptive mechanisms induced by long-term estrogen deprivation in breast cancer cells. *Mol. cell. Endocrinol.*, **193**, 29–42
- Song, R.X., Barnes, C.J., Zhang, Z., Bao, Y., Kumar, R. & Santen, R.J. (2004) The role of Shc and insulin-like growth factor 1 receptor in mediating the translocation of estrogen receptor ? to the plasma membrane. *Proc. natl Acad. Sci. USA*, **101**, 2076–2081
- Stanczyk, F.Z. (2003) All progestins are not created equal. *Steroids*, **68**, 879–890
- Stanczyk, F.Z. & Roy, S. (1990) Metabolism of levonorgestrel, norethindrone, and structurally related contraceptive steroids. *Contraception*, **42**, 67–96
- Stanczyk, F.Z., Mroszczak, E.J., Ling, T., Runkel, R., Henzl, M., Miyakawa, I. & Goebelsmann, U. (1983) Plasma levels and pharmacokinetics of norethindrone and ethinylestradiol administered in solution and as tablets to women. *Contraception*, **28**, 241–251
- Stanczyk, F.Z., Lobo, R.A., Chiang, S.T. & Woutersz, T.B. (1990) Pharmacokinetic comparison of two triphasic oral contraceptive formulations containing levonorgestrel and ethinylestradiol. *Contraception*, **41**, 39–53
- Stanford, J.L., Brinton, L.A., Berman, M.L., Mortel, R., Twigg, L.B., Barrett, R.J., Wilbanks, G.D. & Hoover, R.N. (1993) Oral contraceptives and endometrial cancer: Do other risk factors modify the association? *Int. J. Cancer*, **54**, 243–248
- Sturdee, D.W., Rantala, M.L., Colau, J.C., Zahradnik, H.P., Riphagen, F.E. & Multicenter MLS Investigators (2004) The acceptability of small intrauterine progestogen-releasing system for continuous combined hormone therapy in early postmenopausal women. *Climacteric*, **7**, 404–411
- Sulak, P.J. (2004) Contraceptive redesign: New progestins/new regimens. *J. Fam. Pract.*, **Suppl.**, S3–S8

- Sutter-Dub, M.-T. (2002) Rapid non-genomic and genomic responses to progestogens, estrogens, and glucocorticoids in the endocrine pancreatic B cell, the adipocyte and other cell types. *Steroids*, **67**, 77–93
- Swerdlow, A.J., English, J., MacKie, R.M., O'Doherty, C.J., Hunter, J.A.A., Clark, J. & Hole, D.J. (1986) Benign melanocytic naevi as a risk factor for malignant melanoma. *Br. med. J.*, **292**, 1555–1559
- Taioli, E. & Wynder, E.L. (1994) Re: Endocrine factors and adenocarcinoma of the lung in women. *J. natl Cancer Inst.*, **86**, 869–870
- Takahashi, M., Shimomoto, T., Miyajima, T.K., Yoshida, M., Katashima S., Uematsu, F., Maekawa, A. & Nakae, D. (2004) Effects of estrogens and metabolites on endometrial carcinogenesis in young adult mice initiated with *N*-ethyl-*N'*-nitro-*N*-nitrosoguanidine. *Cancer Lett.*, **211**, 1–9
- Tarone, R.E. & Chu, K.C. (2000) Age-period-cohort analyses of breast-, ovarian-, endometrial- and cervical-cancer mortality rates for Caucasian women in the USA. *J. Epidemiol. Biostat.*, **5**, 221–231
- Tauber, U., Tack, J.W. & Matthes, H. (1989) Single dose pharmacokinetics of gestodene in women after intravenous and oral administration. *Contraception*, **40**, 461–479
- Tavani, A., Negri, E., Parazzini, F., Franceschi, S. & La Vecchia, C. (1993) Female hormone utilisation and risk of hepatocellular carcinoma. *Br. J. Cancer*, **67**, 635–637
- Tavani, A., Ricci, E., La Vecchia, C., Surace, M., Benzi, G., Parazzini, F. & Franceschi, S. (2000) Influence of menstrual and reproductive factors on ovarian cancer risk in women with and without family history of breast or ovarian cancer. *Int. J. Epidemiol.*, **29**, 799–802
- Tavani, A., Bosetti, C., Dal Maso, L., Giordano, L., Franceschi, S. & La Vecchia, C. (2004) Influence of selected hormonal and lifestyle factors on familial propensity to ovarian cancer. *Gynecol. Oncol.*, **92**, 922–926
- Teichmann, A. (2003) Pharmacology of estradiol valerate/dienogest. *Climacteric*, **6** (Suppl. 2), 17–23
- Terry, M.B., Gammon, M.D., Schoenberg, J.B., Brinton, L.A., Arber, N. & Hibshoosh, H. (2002) Oral contraceptive use and cyclin D1 overexpression in breast cancer among young women. *Cancer Epidemiol. Biomarkers Prev.*, **11**, 1100–1103
- Tessaro, S., Beria, J.U., Tomasi, E. & Barros, A.J. (2001) [Oral contraceptive and breast cancer: A case-control study]. *Rev. Saude publica*, **35**, 32–38 (in Spanish)
- Thomas, D.B., Ray, R.M., Koetsawang, A., Kiviat, N., Kuypers, J., Qin, Q., Ashley, R.L. & Koetsawang, S. (2001a) Human papillomaviruses and cervical cancer in Bangkok. I. Risk factors for invasive cervical carcinomas with human papillomavirus types 16 and 18 DNA. *Am. J. Epidemiol.*, **153**, 723–731
- Thomas, D.B., Qin, Q., Kuypers, J., Kiviat, N., Ashley, R.I., Koetsawang, A., Ray, R.M. & Koetsawang, S. (2001b) Human papillomaviruses and cervical cancer in Bangkok. II. Risk factors for *in situ* and invasive squamous cell cervical carcinomas. *Am. J. Epidemiol.*, **153**, 732–739
- Thomas, D.B., Ray, R.M., Qin, Q. & the WHO Collaborative Study of Neoplasia and Steroid Contraceptives (2002) Risk factors for progression of squamous cell cervical carcinoma *in situ* to invasive cervical cancer: Results of a multinational study. *Cancer Causes Control*, **13**, 683–690
- Tofteng, C.L., Kindmark, A., Brandstrom, H., Abrahamsen, B., Petersen, S., Stiger, F., Stilgren, L.S., Jensen, J.E.B., Vestergaard, P., Langdahl, B.L. & Mosekilde, L. (2004) Polymorphisms in the *CYP19* and *AR* genes — Relation to bone mass and longitudinal bone changes in post-

- menopausal women with or without hormone replacement therapy: The Danish Osteoporosis Prevention Study. *Calcif. Tissue int.*, **74**, 25–34
- Topinka, J., Oesterle, D., Reimann, R. & Wolff, T. (2004a) No-effect level in the mutagenic activity of the drug cyproterone acetate in rat liver. Part I. Single dose treatment. *Mutat. Res.*, **550**, 89–99
- Topinka, J., Oesterle, D., Reimann, R. & Wolff, T. (2004b) No-effect level in the mutagenic activity of the drug cyproterone acetate in rat liver. Part II. Multiple dose treatment. *Mutat. Res.*, **550**, 101–108
- Trapido, E.J. (1983) A prospective cohort study of oral contraceptives and cancer of the endometrium. *Int. J. Epidemiol.*, **12**, 297–300
- Troisi, R., Schairer, C., Chow, W.-H., Schatzkin, A., Brinton, L.A. & Fraumeni, J.F., Jr (1997) A prospective study of menopausal hormones and risk of colorectal cancer (United States). *Cancer Causes Control*, **8**, 130–138
- Tsukada, T., Tomooka, Y., Takai, S., Ueda, Y., Nishikawa, S., Yagi, T., Tokunaga, T., Takeda, N., Suda, Y., Abe, S., Matsuo, I., Ikawa, Y. & Aizawa, S. (1993) Enhanced proliferative potential in culture of cells from p53-deficient mice. *Oncogene*, **8**, 3313–3322
- Tuba, Z., Bardin, C.W., Dancsi, A., Francsics-Czinege, E., Molnar, C., Csorgei, J., Falkay, G., Koide, S.S., Kumar, N., Sundaram, K., Dukat-Abrok, V. & Balogh, G. (2000) Synthesis and biological activity of a new progestogen, 16-methylene-17 α -hydroxy-18-methyl-19-norpregn-4-ene-3,20-dione acetate. *Steroids*, **65**, 266–274
- Tung, K.H., Goodman, M.T., Wu, A.H., McDuffie, K., Wilkens, L.R., Kolonel, L.N., Nomura, A.M., Terada, K.Y., Carney, M.E. & Sobin, L.H. (2003) Reproductive factors and epithelial ovarian cancer risk by histologic type: A multiethnic case-control study. *Am. J. Epidemiol.*, **158**, 629–638
- Tzonou, A., Day, N.E., Trichopoulos, D., Walker, A., Saliaraki, M., Papapostolou, M. & Polychronopoulou, A. (1984) The epidemiology of ovarian cancer in Greece: A case-control study. *Eur. J. Cancer clin. Oncol.*, **20**, 1045–1052
- United Nations (2004a) *World Population Monitoring 2002, Reproductive Rights and Reproductive Health* (ST/ESA/SER.A/215), New York, Department of Economic and Social Affairs, Population Division
- United Nations (2004b) *Press Release: Majority of World's Couples of Reproductive Age are Using Contraception* (DEV/2469; POP/902), New York, Department of Public Information [http://www.un.org/esa/population/publications/contraceptive2003/WallChart_CP2003_pressrelease.htm]
- United Nations (2004c) *World Contraceptive Use 2003* (United Nations Publication, Sales No. E.Ø4.XIII.2), New York, Department of Economic and Social Affairs, Population Division
- Ursin, G., Ross, R.K., Sullivan-Halley, J., Hanisch, R., Henderson, B. & Bernstein, L. (1998) Use of oral contraceptives and risk of breast cancer in young women. *Breast Cancer Res. Treat.*, **50**, 175–184
- Ursin, G., Wu, A.H., Hoover, R.N., West, D.W., Nomura, A.M., Kolonel, L.N., Pike, M.C. & Ziegler, R.G. (1999) Breast cancer and oral contraceptive use in Asian-American women. *Am. J. Epidemiol.*, **150**, 561–567
- Vall Mayans, M., Calvet, X., Bruix, J., Bruguera, M., Costa, J., Estève, J., Bosch, F.X., Bru, C. & Rodés, J. (1990) Risk factors for hepatocellular carcinoma in Catalonia, Spain. *Int. J. Cancer*, **46**, 378–381

- Van Hoften, C., Burger, H., Peeters, P.H., Grobbee, D.E., Van Noord, P.A. & Leufkens, H.G. (2000) Long-term oral contraceptive use increases breast cancer risk in women over 55 years of age: The DOM cohort. *Int. J. Cancer*, **87**, 591–594
- Van Vliet, H.A.A.M., Grimes, D.A., Helmerhorst, F.M. & Schulz, K.F. (2006a) Biphasic versus monophasic oral contraceptives for contraception (Review). *Cochrane Database Syst. Rev.*, **3**, Art. No. CD002032
- Van Vliet, H.A.A.M., Grimes, D.A., Lopez, L.M., Schulz, K.F. & Helmerhorst, F.M. (2006b) Triphasic versus monophasic oral contraceptives for contraception. *Cochrane Database Syst. Rev.*, **3**, Art. No. CD003553
- Van Vliet, H.A.A.M., Grimes, D.A., Helmerhorst, F.M. & Schulz, K.F. (2006c) Biphasic versus triphasic oral contraceptives for contraception (review). *Cochrane Database Syst. Rev.*, **3**, Art. No. CD003283
- Vegeto, E., Shahbaz, M.M., Wen, D.X., Goldman, M.E., O'Malley, B.W. & McDonnell, D.P. (1993) Human progesterone receptor A form is a cell- and promoter-specific repressor of human progesterone receptor B function. *Mol. Endocrinol.*, **7**, 1244–1255
- Vessey, M.P. & Painter, R. (1995) Endometrial and ovarian cancer and oral contraceptives — Findings in a large cohort study. *Br. J. Cancer*, **71**, 1340–1342
- Vessey, M.P., Villard Mackintosh, L., McPherson, K. & Yeates, D. (1989) Mortality among oral contraceptive users: 20 year follow up of women in a cohort study. *Br. med. J.*, **299**, 1487–1491
- Vessey, M., Painter, R. & Yeates, D. (2003) Mortality in relation to oral contraceptive use and cigarette smoking. *Lancet*, **362**, 185–191
- de Villiers, E.-M. (2003) Relationship between steroid hormone contraceptives and HPV, cervical intraepithelial neoplasia and cervical carcinoma. *Int. J. Cancer*, **103**, 705–708
- Voigt, L.F., Deng, Q. & Weiss, N.S. (1994) Recency, duration, and progestin content of oral contraceptives in relation to the incidence of endometrial cancer (Washington, USA). *Cancer Causes Control*, **5**, 227–233
- Waetjen, L.E. & Grimes, D.A. (1996) Oral contraceptives and primary liver cancer: Temporal trends in three countries. *Obstet. Gynecol.*, **88**, 945–949
- Waliszewski, P., Blaszczyk, M., Wolinska-Witort, E., Drews, M., Snochowski, M. & Hurst, R.E. (1997) Molecular study of sex steroid receptor gene expression in human colon and in colorectal carcinomas. *J. surg. Oncol.*, **64**, 3–11
- Walker, G.R., Schlesselman, J.J. & Ness, R.B. (2002) Family history of cancer, oral contraceptive use, and ovarian cancer risk. *Am. J. Obstet. Gynecol.*, **186**, 8–14
- van Wayenburg, C.A.M., van der Schouw, Y.T., van Noord, P.A.H. & Peeters, P.H.M. (2000) Age at menopause, body mass index, and the risk of colorectal cancer mortality in the Dutch Diagnostisch Onderzoek Mammacarcinoom (DOM) cohort. *Epidemiology*, **11**, 304–308
- Weiderpass, E., Adami, H.-O., Baron, J.A., Magnusson, C., Lindgren, A. & Persson, I. (1999) Use of oral contraceptives and endometrial cancer risk (Sweden). *Cancer Causes Control*, **10**, 277–284
- Weiss, N.S. & Sayvetz, T.A. (1980) Incidence of endometrial cancer in relation to the use of oral contraceptives. *New Engl. J. Med.*, **302**, 551–554
- Weiss, N.S., Lyon, J.L., Liff, J.M., Vollmer, W.M. & Daling, J.R. (1981a) Incidence of ovarian cancer in relation to the use of oral contraceptives. *Int. J. Cancer*, **28**, 669–671
- Weiss, N.S., Daling, J.R. & Chow, W.H. (1981b) Incidence of cancer of the large bowel in women in relation to reproductive and hormonal factors. *J. natl Cancer Inst.*, **67**, 57–60

- Wellejus, A. & Loft, S. (2002) Receptor-mediated ethinylestradiol-induced oxidative DNA damage in rat testicular cells. *FASEB J.*, **16**, 195–201
- Wellejus, A., Bornholdt, J., Vogel, U.B., Risom, L., Wiger, R. & Loft, S. (2004) Cell-specific oxidative DNA damage induced by estrogen in rat testicular cells in vitro. *Toxicol. Lett.*, **150**, 317–323
- Werner, S., Kunz, S., Wolff, T. & Schwarz, L.R. (1996) Steroidal drug cyproterone acetate is activated to DNA-binding metabolites by sulfonation. *Cancer Res.*, **56**, 4391–4397
- Werner, S., Kunz, S., Beckurts, T., Heidecke, C.-D., Wolff, T. & Schwarz, L.R. (1997) Formation of DNA adducts by cyproterone acetate and some structural analogues in primary cultures of human hepatocytes. *Mutat. Res.*, **395**, 179–187
- Westerdahl, J., Olsson, H., Måsbäck, A., Ingvar, C. & Jonsson, N. (1996) Risk of malignant melanoma in relation to drug intake, alcohol, smoking and hormonal factors. *Br. J. Cancer*, **73**, 1126–1131
- White, E., Malone, K.E., Weiss, N.S. & Daling, J.R. (1994) Breast cancer among young U.S. women in relation to oral contraceptive use. *J. natl Cancer Inst.*, **86**, 505–514
- Whittemore, A.S., Balise, R.R., Pharoah, P.D., Dicioccio, R.A., Oakley-Girvan, I., Ramus, S.J., Daly, M., Usinowicz, M.B., Garlinghouse-Jones, K., Ponder, B.A., Buys, S., Senie, R., Andrulis, I., John, E., Hopper, J.L. & Piver, M.S. (2004) Oral contraceptive use and ovarian cancer risk among carriers of BRCA1 or BRCA2 mutations. *Br. J. Cancer*, **91**, 1911–1915
- Whittemore, A.S., Harris, R., Itnyre, J. & the Collaborative Ovarian Cancer Group (1992) Characteristics relating to ovarian cancer risk: Collaborative analysis of 12 US case-control studies. II. Invasive epithelial ovarian cancers in white women. *Am. J. Epidemiol.*, **136**, 1184–1203
- WHO (1995) Venous thromboembolic disease and combined oral contraceptives: Results of international multicentre case-control study. World Health Organization Collaborative Study of Cardiovascular Disease and Steroid Hormone Contraception. *Lancet*, **346**, 1575–1582
- WHO Collaborative Study of Neoplasia and Steroid Contraceptives (1988) Endometrial cancer and combined oral contraceptives. *Int. J. Epidemiol.*, **17**, 263–269
- WHO Collaborative Study of Neoplasia and Steroid Contraceptives (1989a) Epithelial ovarian cancer and combined oral contraceptives. *Int. J. Epidemiol.*, **18**, 538–545
- WHO Collaborative Study of Neoplasia and Steroid Contraceptives (1989b) Combined oral contraceptives and liver cancer. *Int. J. Cancer*, **43**, 254–259
- WHO Collaborative Study of Neoplasia and Steroid Contraceptives (1989c) Combined oral contraceptives and gallbladder cancer. *Int. J. Epidemiol.*, **18**, 309–314
- Wiegratz, I. & Kuhl, H. (2004) Progestogen therapies: Differences in clinical effects? *Trends Endocrinol. Metab.*, **15**, 277–285
- Wiegratz, I., Kutschera, E., Lee, J.H., Moore, C., Mellinger, U., Winkler, U.H. & Kuhl, H. (2003) Effect of four different oral contraceptives on various sex hormones and serum-binding globulins. *Contraception*, **67**, 25–32
- Wildemeersch, D., Batar, I., Affandi, B., Andrade, A., Shangchun, W., Jing, H. & Xiaoming, C. (2003) The 'frameless' intrauterine system for long-term reversible contraception: A review of 15 years of clinical experience. *J. obstet. gynaecol. Res.*, **29**, 164–173
- Willett, W.C., Bain, C., Hennekens, C.H., Rosner, B. & Speizer, F.E. (1981) Oral contraceptives and risk of ovarian cancer. *Cancer*, **48**, 1684–1687
- Winter, D.C., Taylor, C., O'Sullivan, G.C. & Harvey, B.J. (2000) Mitogenic effects of oestrogen mediated by a non-genomic receptor in human colon. *Br. J. Surg.*, **87**, 1684–1689

- Witte, D., Chirala, M., Younes, A., Li, Y. & Younes, M. (2001) Estrogen receptor beta is expressed in human colorectal adenocarcinoma. *Hum. Pathol.*, **32**, 940–944
- Wittenberg, J., Cook, L.S., Rossing, M.A. & Weiss, N.S. (1999) Reproductive risk factors for mucinous and non-mucinous epithelial ovarian cancer. *Epidemiology*, **10**, 761–763
- Wu, M.L., Whittemore, A.S., Paffenbarger, R.S., Jr, Sarles, D.L., Kampert, J.B., Grosser, S., Jung, D.L., Ballon, S., Hendrickson, M. & Mohle-Boetani, J. (1988) Personal and environmental characteristics related to epithelial ovarian cancer. I. Reproductive and menstrual events and oral contraceptive use. *Am. J. Epidemiol.*, **128**, 1216–1227
- Wu-Williams, A.H., Lee, M., Whittemore, A.S., Gallagher, R.P., Jiao, D., Zheng, S., Zhou, L., Wang, X., Chen, K., Jung, D., Teh, C.-Z., Ling, C., Xu, J.Y. & Paffenbarger, R.S., Jr (1991) Reproductive factors and colorectal cancer risk among Chinese females. *Cancer Res.*, **51**, 2307–2311
- Xu, X. & Thomas, M.L. (1994) Estrogen receptor-mediated direct stimulation of colon cancer cell growth in vitro. *Mol. cell. Endocrinol.*, **105**, 197–201
- Yen, S., Hsieh, C.C. & MacMahon, B. (1987) Extrahepatic bile duct cancer and smoking, beverage consumption, past medical history, and oral-contraceptive use. *Cancer*, **59**, 2112–2116
- Ylitalo, N., Sorensen, P., Josefsson, A., Frisch, M., Sparen, P., Ponten, J., Gyllenstein, U., Melbye, M. & Adami, H.-O. (1999) Smoking and oral contraceptives as risk factors for cervical carcinoma *in situ*. *Int. J. Cancer*, **81**, 357–365
- Yu, M.C., Tong, M.J., Govindarajan, S. & Henderson, B.E. (1991) Nonviral risk factors for hepatocellular carcinoma in a low-risk population, the non-Asians of Los Angeles County, California. *J. natl Cancer Inst.*, **83**, 1820–1826
- Yu, M.W., Chang, H.C., Chang, S.C., Liaw, Y.F., Lin, S.M., Liu, C.J., Lee, S.D., Lin, C.L., Chen, P.J., Lin, S.C. & Chen, C.J. (2003) Role of reproductive factors in hepatocellular carcinoma: Impact on hepatitis B- and C-related risk. *Hepatology*, **38**, 1393–1400
- Yue, W., Berstein, L.M., Wang, J.-P., Clark, G.M., Hamilton, C.J., Demers, L.M. & Santen, R.J. (2001) The potential role of estrogen in aromatase regulation in the breast. *J. ster. Biochem. mol. Biol.*, **79**, 157–164
- Yuzpe, A.A. (2002) Oral contraception: Trends over time. *J. reprod. Med.*, **47**, 967–973
- Zanetti, R., Franceschi, S., Rosso, S., Bidoli, E. & Colonna, S. (1990) Cutaneous malignant melanoma in females: The role of hormonal and reproductive factors. *Int. J. Epidemiol.*, **19**, 522–526
- Zaridze, D., Mukeria, A. & Duffy, S.W. (1992) Risk factors for skin melanoma in Moscow. *Int. J. Cancer*, **52**, 159–161
- Zatonski, W.A., Lowenfels, A.B., Boyle, P., Maisonneuve, P., Bueno de Mesquita, H.B., Ghadirian, P., Jain, M., Przewozniak, K., Baghurst, P., Moerman, C.J., Simard, A., McMichael, A.J., Hsieh, C.C. & Walker, A.M. (1997) Epidemiologic aspects of gallbladder cancer: A case-control study of the SEARCH Program of the International Agency for Research on Cancer. *J. natl Cancer Inst.*, **89**, 1131–1138
- Zivaljevic, V., Vlajinac, H., Jankovic, R., Marinkovic, J., Dzodic, R., Sipeti Grujii, S., Paunovic, I., Diklic, A. & Zivaljevic, B. (2003) Case-control study of female thyroid cancer — Menstrual, reproductive and hormonal factors. *Eur. J. Cancer Prev.*, **12**, 63–66
- Zlidar, V.M., Gardner, R., Rutstein, S.O., Morris, L., Goldberg, H. & Johnson, K. (2003) *New Survey Findings: The Reproductive Revolution Continues* (Population Reports, Series M, No. 17), Baltimore, Johns Hopkins Bloomberg School of Public Health, The INFO Project [<http://www.inforforhealth.org/pr/m17/>]