

Some references related to concerns about oral contraceptive use



1. Sexual dysfunction and O.C.

I Goldstein et al. 2005 (New Scientist May 27, 2005)

Panzer, C.; Wise, S.; Fantini, G.; Kang, D.; Munarriz, R.; Guay, A., and Goldstein, I. Impact of oral contraceptives on sex hormone-binding globulin and androgen levels: a retrospective study in women with sexual dysfunction. *J Sex Med.* 2006 Jan; 3(1):104-13.

Women who take the contraceptive pill are in danger of permanently dampening their libido, according to a team of American scientists. Irwin Goldstein, Claudia Panzer and their colleagues at Boston University studied 125 young women who attended a sexual dysfunction clinic. Sixty-two of them were taking oral contraceptives, 40 had previously taken them and 23 had never taken them. The team measured levels of SHBG in the women every three months for a year, and found that in pill users they were seven times as high as in women who had never taken them. Levels had declined a bit in women who had stopped taking the pill, but remained three to four times as high as in those who had never taken it, the researchers told a meeting of the American Association of Clinical Endocrinologists in Washington DC. "There's the possibility it is imprinting a woman for the rest of her life," says Goldstein. According to Dr Panzer, "Doctors who prescribe the pill should tell women about the effect it might have."

2. CVS disease and O.C.

Baillargeon JP et al. Association between the current use of low-dose oral contraceptives and cardiovascular arterial disease: a meta-analysis. *J Clin Endocrinol Metab.* 2005 Jul;90(7):3863-70 .

"In conclusion, a rigorous meta-analysis of the literature suggests that current use of low-dose OCs significantly increases the risk of both cardiac and vascular arterial events, including a significant risk of vascular arterial complications with third generation OCs."

3. Human Carcinogenicity and O.C.

Cogliano V, Grosse Y, Baan R, Straif K, Secretan B, El Ghissassi F; World Health Organization International Agency for Research on Cancer. *Lancet Oncol.* 2005 Aug;6(8):552-3. Carcinogenicity of combined oestrogen-progestagen contraceptives and menopausal treatment.

“After examining all the evidence, the Working Group classified combined estrogen-progestagen hormone therapy as carcinogenic to humans...[In contrast to many who claim the pill has a protective effect] The Working Group did not find the evidence sufficient to infer a protective effect at any site.”

Oral contraceptive is a *human carcinogen -increases the risk of certain cancers including breast and cervix*

#### 4. Ovulation on O.C.

Pierson RA et al. Ortho Evra/Evra versus oral contraceptives: follicular development and ovulation in normal cycles and after an intentional dosing error. *Fertil Steril* 2003;80:34-42.

Many patients and physicians alike assume that the oral contraceptive works by consistently preventing ovulation and thus precluding fertilization. According to this study and subsequent communications by the lead author, ovulation is a not uncommon event in women taking the oral contraceptive.

Table 4. Number ovulating (%) in properly dosed treatment cycles. (cycle 3 for example)

Monophasic levonorgestrel	oral contraceptives – 28%
Triphasic levonorgestrel	oral contraceptives - 18%
Triphasic norgestimate	oral contraceptives - 16%

#### 5. Congenital anomalies and O.C.

Weir HK, Marrett LD, Kreiger N, Darlington GA, Sugar L. Pre-natal and peri-natal exposures and risk of testicular germ-cell cancer. *Int J Cancer* 2000; 87:438-43.

Not infrequently, women become pregnant while on the O.C. or do not realize they are pregnant and continue to take the O.C. Many MDs claim there is no consequence to exogenous exposure to synthetic estrogens in early gestation. This claim may not be accurate.

“The present case-control study was undertaken to investigate the association between exposure to maternal hormones and risk of testicular germ-cell cancer by histologic subgroups. Cases were males, aged 16 to 59 years, diagnosed with testicular germ-cell cancer in Ontario between 1987 and 1989... We found evidence that exposure to maternal hormones, particularly estrogens, is associated with testicular germ-cell cancer risk.”

6. Osteoporosis and O.C.

Prior, JC et al. CMAJ. 2001 Oct 16;165(8):1023-9. Oral contraceptive use and bone mineral density

We currently have an increasing epidemic of osteoporosis. According to this study, “National, population-based data show lower BMD values for the trochanter and spine in premenopausal women who have used OCs compared with those who have never used OCs.”

7. HIV shedding and O.C.

Mostad SB et al. Hormonal contraception, vitamin A deficiency, and other risk factors for shedding of HIV-1 infected cells from the cervix and vagina. Lancet. 1997 Sep 27;350(9082):922-7

“Factors that influence shedding of HIV-1 infected cells in cervical and vaginal secretions may be important determinants of sexual and vertical transmission of the virus. We investigated whether hormonal contraceptive use, vitamin A deficiency, and other variables were risk factors for cervical and vaginal shedding of HIV-infected cells. ...Our study documents several novel correlates of HIV-1 shedding in cervical and vaginal secretions, most notably hormonal contraceptive use and vitamin A deficiency. These factors may be important determinants of sexual or vertical transmission of HIV-1 and are of public health importance because they are easily modified by simple interventions.”

8. Peak Bone Mass and O.C.

Teegarden, D.; Legowski, P.; Gunther, C. W.; McCabe, G. P.; Peacock, M., and Lyle, R. M. Dietary Calcium Intake Protects Women Consuming Oral Contraceptives From Spine and Hip Bone Loss. J Clin Endocrinol Metab. 2005 Jul 5.

Normal bone development continues through the teen years and into the 20s. This development continues until the individual reaches what is referred to as “peak bone mass.” The authors from this study conclude: “It is estimated that 80% of all women have used oral contraceptives (OCP), but OCP use may prevent attainment of maximal peak bone mass in young women and thus increase the risk of osteoporosis later in life.”

## 9. SLE and O.C.

Past use of oral contraceptives and the risk of developing systemic lupus erythematosus. *Arthritis Rheum* 1997;40:804-8. Sanchez-Guerrero J, Karlson EW, Liang MH, Hunter DJ, Speizer FE, Colditz GA

The objective of this study was to examine the relationship between past use of oral contraceptives (OCs) and development of subsequent systemic lupus erythematosus (SLE) In the conclusion, the researcher claim that “past use of OCs was associated with a slightly increased risk of developing SLE.”

April 13, 2009 — Use of combined oral contraceptives (COCs) is linked to increased risk for systemic lupus erythematosus (SLE), according to the results of a population-based, nested case–control study reported in the April 15 issue of *Arthritis Care & Research*.

Risk increased further with increasing dose of ethinyl estradiol (RR, 1.42, 1.63, and 2.92 for  $\leq 30$   $\mu\text{g}$ , 31 – 49  $\mu\text{g}$ , and 50  $\mu\text{g}$ , respectively).

"The use of COCs is associated with an increased risk of SLE," the study authors write. "This risk is particularly elevated in women who recently started contraceptive use, suggesting an acute effect in a small subgroup of susceptible women."

*Arthr Care Res.* 2009;61:476–481

## 10. Environmental contamination and O.C.

Ternes TA, Stumpf M, Mueller J, Haberer K, Wilken RD, Servos M. Behavior and occurrence of estrogens in municipal sewage treatment plants--I. Investigations in Germany, Canada and Brazil. *Sci Total Environ* 1999; 225:81-90.

There is extensive evidence in numerous studies that the hormones from the oral contraceptive are now in the water supply and are not completely removed by water treatment plants. The full effect of this on wildlife and humans is currently the subject of much study.

“Using this method the behavior and occurrence of natural estrogens and synthetic contraceptives in municipal sewage treatment plants (STP) were investigated in German and Canadian facilities... In Canadian and German STP discharges estrone, 17 beta-estradiol, 17 alpha-ethinylestradiol and 16 alpha-hydroxyestrone were frequently detected within the lower ng/l-range”

### 11. Mood and sexual function and O.C.

Graham CA, Ramos R, Bancroft J, Maglaya C, Farley TM. The effects of steroidal contraceptives on the well being and sexuality of women. *Contraception* 1995;52:363-9

“The COC [combined oral contraceptive] adversely affected sexuality in the Edinburgh women, with 12 of the 25 women in this group also reporting the side effect of reduced sexual interest. There were modest negative effects of the combined pill on mood, more noticeable in the Edinburgh women.”

### 12. BMJ: Oral contraceptive use is associated with prostate cancer: an ecological study [David Margel](#), [Neil E Fleshner](#)

**Background** Several recent studies have suggested that oestrogen exposure may increase the risk of prostate cancer (PCa).

**Objectives** To examine associations between PCa incidence and mortality and population-based use of oral contraceptives (OCs). It was hypothesised that OC by-products may cause environmental contamination, leading to an increased low level oestrogen exposure and therefore higher PCa incidence and mortality.

**Methods** The hypothesis was tested in an ecological study. Data from the International Agency for Research on Cancer were used to retrieve age-standardised rates of prostate cancer in 2007, and data from the United Nations World Contraceptive Use 2007 report were used to retrieve data on contraceptive use. A Pearson correlation and multivariable linear regression were used to associate the percentage of women using OCs, intrauterine devices, condoms or vaginal barriers to the age standardised prostate cancer incidence and mortality. These analyses were performed by individual nations and by continents worldwide.

**Results** OC use was significantly associated with prostate cancer incidence and mortality in the individual nations worldwide ( $r=0.61$  and  $r=0.53$ , respectively;  $p<0.05$  for all). PCa incidence was also associated with OC use in Europe ( $r=0.545$ ,  $p<0.05$ ) and by continent ( $r=0.522$ ,  $p<0.05$ ). All other forms of contraceptives (ie, intra-uterine devices, condoms or vaginal barriers) were not correlated with prostate cancer incidence or mortality. On multivariable analysis the correlation with OC was independent of a nation's wealth.

**Conclusion** A significant association between OCs and PCa has been shown. It is hypothesised that the OC effect may be mediated through environmental oestrogen levels; this novel concept is worth further investigation.

### 13. HRT equivalency and O.C.

Goodman and Gilman. The Pharmacological Basis of Therapeutics. 9th ed. McGraw-Hill 1996.”p1421

& Lange’s Basic and Clinical Pharmacology(8th edition) McGraw-Hill 2001. BG Katzung (editor) – similar idea.

There has been substantial evidence that the use of hormone replacement therapy is associated with an increased risk for a variety of sequelae including breast cancer, cardiovascular incidents and dementia. Some researchers have expressed concern because the dose of estrogen in the oral contraceptive is proportionately much higher than the dose used in HRT (where conjugated estrogens are often used.) According to well-recognized pharmacology texts “a dose of 0.625 mg of conjugated estrogens generally is considered equivalent to 5-10ug of ethinyl estradiol.” The average dose of ethinyl estradiol in the O.C. is between 20-30 ug. In response, some claim that the studies on HRT are in postmenopausal women while the use of the O.C. is in younger women.

### 14. Dental concerns and O.C.

Garcia AG et al. Does oral contraceptive use affect the incidence of complications after extraction of a mandibular third molar? Brit Dent J 2003;194:453-5

“The results of this study support the view that oral contraceptive use favours the appearance of dry socket and postoperative pain after extraction, but has no effect on trismus.”

### 15. Cervical Cancer and O.C.

Moreno V et al. Effect of oral contraceptives on risk of cervical cancer...Lancet 2002;359:1085-92.

“Long-term use of oral contraceptives could be a cofactor that increases risk of cervical carcinoma by up to four-fold in women who are positive for cervical HPV DNA.”

There are various publications and studies which present different perspectives than those represented here. It is always important to critically assess each publication and each study, including the study design, the source of funding for the study, any conflicts of interests from the researchers, and the credibility of the particular medical journal. The following is an example of what not infrequently occurs.

In the *Journal of the American Medical Association*, Schwarz et al. report that despite the fact that papers presented at conferences and meetings are in the beginning stages of scientific scrutiny, “abstracts at scientific meetings receive substantial attention in the high-profile media.”<sup>1</sup> Furthermore, press releases often “exaggerate the perceived importance of findings”<sup>2</sup> and rarely highlight study limitations or conflicts of interest. For example, at the 2004 American Society for Reproductive Medicine’s annual scientific conference, a presentation was made, based on Women’s Health Initiative (WHI) generated data, that suggested oral contraceptives users are *less* likely to develop cardiovascular disease.<sup>3</sup> Following worldwide media attention, the director of the WHI released a definitive statement through the U.S. Department of Health and Human Services<sup>4</sup> stating that the presenting group had “flaws in both the design and interpretation.”<sup>4</sup> This latter corrective statement, however, was not reported extensively in the media; as a result, many doctors and consumers may have been left with a false perception of evidence related to hormone use.

#### Reference List

1. Schwartz LM, Woloshin S, Baczek L. Media coverage of scientific meetings: too much, too soon? *JAMA* 2002; 287:2859-63.
2. Woloshin S, Schwartz LM. Press releases: translating research into news. *JAMA* 2002; 287:2856-8.
3. Bowser A. New WHI Analysis: Oral Contraceptives May Reduce CVD Risk. *Medscape Medical News*. <http://www.medscape.com/viewarticle/491753?src=mp> [accessed March 6/2005].
4. National Institutes of Health Press Releases. Statement on oral contraceptive study from Barbara Alving, M.D., Director of the Women's Health Initiative and Acting Director of the National Heart, Lung, and Blood Institute. <http://www.nih.gov/news/pr/dec2004/nhlbi-15.htm> [accessed March 6 2005].

**Oral contraceptive use as a risk factor for premenopausal breast cancer: a meta-analysis.**

- [Kahlenborn C](#),
- [Modugno F](#),
- [Potter DM](#),
- [Severs WB](#).

Department of Internal Medicine, Altoona Hospital, Altoona, PA, USA.  
drchris@polycarp.org

**OBJECTIVE:** To perform a meta-analysis of case-control studies that addressed whether prior oral contraceptive (OC) use is associated with premenopausal breast cancer. **METHODS:** We searched the MEDLINE and PubMed databases and bibliography reviews to identify case-control studies of OCs and premenopausal breast cancer published in or after 1980. Search terms used included breast neoplasms, oral contraceptives, contraceptive agents, and case-control studies. Studies reported in all languages were included. Thirty-four studies were identified that met inclusion criteria. Two reviewers extracted data from original research articles or additional data provided by study authors. We used the DerSimonian-Laird method to compute pooled odds ratios (ORs) and confidence intervals (CIs) and the Mantel-Haenszel test to assess association between OC use and cancer. **RESULTS:** Use of OCs was associated with an increased risk of premenopausal breast cancer in general (OR, 1.19; 95% CI, 1.09-1.29) and across various patterns of OC use. Among studies that provided data on nulliparous and parous women separately, OC use was associated with breast cancer risk in both parous (OR, 1.29; 95% CI, 1.20-1.40) and nulliparous (OR, 1.24; 95% CI, 0.92-1.67) women. Longer duration of use did not substantially alter risk in nulliparous women (OR, 1.29; 95% CI, 0.85-1.96). Among parous women, the association was stronger when OCs were used before first full-term pregnancy (FFTP) (OR, 1.44; 95% CI, 1.28-1.62) than after FFTP (OR, 1.15; 95% CI, 1.06-1.26). The association between OC use and breast cancer risk was greatest for parous women who used OCs 4 or more years before FFTP (OR, 1.52; 95% CI, 1.26-1.82). **CONCLUSION:** Use of OCs is associated with an increased risk of premenopausal breast cancer, especially with use before FFTP in parous women.



**Does the pill make a difference? Previous maternal use of contraceptive pills and allergic diseases among offspring.** *Allergy* 2006;61:1467-1472

- [Keski-Nisula L](#), [Pekkanen J](#), [Xu B](#), [Putus T](#), [Koskela P](#).

Environmental Epidemiology Unit, National Public Health Institute, Kuopio, Finland.

**BACKGROUND:** Maternal use of oral contraceptive pills (OCPs) might increase the prevalence of allergic diseases among offspring. The aim of the study was to clarify if there are differences between OCP types in this association. **METHODS:** Primary outcomes were asthma, allergic rhinitis and atopic eczema among 1182 children (618 asthmatic and 564 controls) aged 5-6 years. **RESULTS:** Maternal previous use of desogestrel, gestodene or cyproterone acetate before pregnancy, each combined with ethinyloestradiol (EO), increased the risk of allergic rhinitis among offspring compared with those children whose mothers had not used OCPs (OR 1.67, 95% CI 1.07-2.59,  $P < 0.024$ ), and this risk was increased mainly in those children with parental allergy (OR 1.78, 95% CI 1.11-2.86,  $P < 0.018$ ), especially in boys (OR 2.12, 95% CI 1.17-3.84,  $P < 0.014$ ). No associations were observed between maternal use of OCPs before pregnancy and asthma or atopic eczema among offspring. The association between the previous use of OCPs and allergic rhinitis was not mediated through maternal sex steroid levels during early pregnancy, but women who had used more androgenic types of progestin formulas had higher serum levels of progesterone during early pregnancy. **CONCLUSION:** Maternal previous use of desogestrel, gestodene or cyproterone acetate before pregnancy, each combined with EO, increased the risk of allergic rhinitis among offspring compared with those children whose mothers had not used OCPs and this risk was detected mainly in boys and in children with parental allergy.

NEW YORK (Reuters Health) Dec 29 - Previous maternal use of oral contraceptive pills (OCPs) appears to influence the risk of allergic rhinitis in subsequent offspring, Finnish researchers report in the December issue of *Allergy*.

\

## Recent Oral Contraceptive Use and Adverse Birth Outcomes

1. XiKuan Chen, Shi Wu Wen, Luming Sun, Qiuying Yang, **Mark C. Walker**, Daniel Krewski. Recent Oral Contraceptive Use and Adverse Birth Outcomes. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, May 2009, 144(1); 40-43.

McLaughlin Center for Population Health Risk Assessment, Institute of Population Health, University of Ottawa, Ontario, Canada. xikuan.chen@gmail.com

**OBJECTIVE:** To examine the possible association between oral contraceptive use and adverse birth outcomes. **STUDY DESIGN:** We conducted a population-based cohort study of pregnant women who used oral contraceptives within 3 months before their last menstrual period. Subjects were divided into three groups, according to the interval (0-30, 31-60, and 61-90 days) between the dispensing date and their last menstrual period. For each exposed subject, 4 subjects without exposure to oral contraceptives were individually matched by infant's year of birth and plurality and by mother's age and parity. **RESULTS:** Oral contraceptive use within 30 days prior to the last menstrual period was associated with increased risks of very low birth weight (OR: 3.24, 95% CI: 1.18, 8.92), low birth weight (OR: 1.93, 95% CI: 1.17, 3.20), and preterm birth (OR: 1.61, 95% CI: 1.01, 2.55); however, oral contraceptive use 31-90 days prior to the last menstrual period did not increase the risk of low birth weight or preterm birth. **CONCLUSION:** Our results indicate the use of oral contraceptives near the time of conception may be associated with an increased risk of low birth weight and preterm birth

## Diet and lifestyle risk factors associated with incident hypertension in women

- “Hypertension contributes to more excess deaths in woman than any other preventable cause.”
- Followed 83,882 adult women in Nurses Health Study
- Oral contraceptive use was associated with an increased risk of hypertension

*Forman JP, Stampfer MJ, Curham GC. Diet and lifestyle risk factors associated with incident hypertension in women. JAMA 2009. 302:401-11.*

## **Effect of depo-medroxyprogesterone acetate on breast cancer risk among women 20-44 years of age**

Christopher I Li, Elisabeth F Beaber, Mei-Tzu C Tang, et al.

*Cancer Res* Published OnlineFirst February 27, 2012

An injectable form of progestin-only birth control has been found to double the risk of breast cancer in young women after just a year or more of use, a new study suggests.

According to the researchers, this is the first large-scale U.S. study to examine the link between depo-medroxyprogesterone acetate (DMPA) and an increased risk of breast cancer. DMPA is the main component in the branded progestin-only contraceptive Depo-Prevara.

The contraceptive contains the same type of progestin used in a certain kind of menopausal hormone-therapy regimen that uses both estrogen and progestin to treat the symptoms of menopause. A clinical study of the regimen by the Women's Health Initiative revealed an increased breast cancer risk in the postmenopausal women who utilized the therapy.

These findings were what prompted the researchers to study DMPA specifically.

“We know that women who use DMPA - it works by providing a high enough level of progestin that confers contraception for a long period of time,” said Dr. Christopher Li, a breast cancer epidemiologist at the Fred Hutchinson Cancer Research Center in Seattle, Wash., and the lead author of the study. “Other studies have implicated progestin as potentially harmful for the body. Such a sustained incidence of progestin could increase this risk.”

Li and his team conducted a case controlled study of 1,028 women aged 20 to 44 in the Seattle area who had been diagnosed with breast cancer. After gathering information about their birth control methods, the researchers then compared this group to another group of similarly aged women who had no history of breast cancer.

## Hypertension and oral contraceptives

Oral contraceptive use in girls and alcohol consumption in boys are associated with increased blood pressure in late adolescence *European Journal of Preventive Cardiology* 2047487312452966, first published on July 11, 2012 as doi:10.1177/2047487312452966

Chi Le-Ha et al.

“The use of birth control pills was significantly associated with higher blood pressure in girls.”.

**Conclusion:** In addition to gender-related differences in the effects of adiposity on BP, we found lifestyle-related health behaviours such as high salt intake for both sexes, consumption of alcohol in boys, and OC use in girls were important factors associated with BP measurements in late adolescence. This suggests that gender-specific behavioural modification in adolescence may prevent adult hypertension.

## Prostate Cancer and oral contraceptives

[BMJ Open](#). 2011 Nov 14;1(2):e000311. Print 2011.

# Oral contraceptive use is associated with prostate cancer: an ecological study.

[Margel D](#), [Fleshner NE](#).

Source: Division of Urologic Oncology, Princess Margaret Hospital, University of Toronto, Toronto, Ontario, Canada

- Explored regional aggregate use of contraception and rates of prostate cancer:
  - “We have demonstrated a significant correlation between OC use and prostate cancer incidence and mortality” via environmental estrogen levels.

[Eur J Obstet Gynecol Reprod Biol](#). 2008 Dec;141(2):127-30. Epub 2008 Aug 28.

# Adverse mood effects of combined oral contraceptives in relation to personality traits.

[Borgström A](#), [Odlind V](#), [Ekselius L](#), [Sundström-Poromaa I](#).

## Source

Department of Women's and Children's Health, Uppsala University, SE-751 85 Uppsala, Sweden.

## Abstract

### OBJECTIVE:

**Mood symptoms, such as depressed mood, anxiety and increased irritability, remain one of the major reasons for discontinuation of combined oral contraceptive (COC) pills.** The aim of this study was to compare personality traits in women with ongoing or previous use of COCs and different experiences from these compounds with respect to adverse mood symptoms.

### STUDY DESIGN:

Thirty women currently on COCs with no reports of adverse mood symptoms, 28 women currently on COCs and experiencing mood-related side effects, 27 women who had discontinued COC use for reasons other than adverse mood symptoms and 33 women who had discontinued COC use due to adverse mood effects were included. All participants were asked to fill out the Swedish universities Scales of Personality (SSP) to assess different personality traits.

### RESULTS:

The women who were experiencing mood-related side effects on their current COC use exhibited higher scores on the somatic anxiety and stress susceptibility traits as compared to the women who did not experience any mood-related side effects from their current COCs. Women who had discontinued COC treatment because of adverse mood effects had higher scores of detachment and mistrust compared to women who had discontinued COC for reasons unrelated to mood effects.

[Contraception](#). 2006 Feb;73(2):189-94. Epub 2005 Oct 21.

## **Use of combined oral contraceptives among women with migraine and nonmigrainous headaches: a systematic review.** [Curtis KM](#), [Mohllajee AP](#), [Peterson HB](#).)

### **Source**

WHO Collaborating Center in Reproductive Health, Division of Reproductive Health, Centers for Disease Control and Prevention, Atlanta, GA 30341, USA. [kmc6@cdc.gov](mailto:kmc6@cdc.gov)

### **Abstract**

This systematic review examines evidence evaluating whether women with headaches who use combined oral contraceptives (COCs) have a greater risk of stroke than women with headaches who do not use COCs. We searched MEDLINE for articles published from 1966 through March 2005 relevant to headaches and COC use as risk factors for stroke. Of the 79 articles identified, nine met our selection criteria (eight reports of six observational studies plus one meta-analysis). All studies reported specifically on migraine headaches. Evidence from six case-control studies suggested that COC users with a history of migraine were two to four times as likely to have an ischemic stroke as nonusers with a history of migraine. The odds ratios for ischemic stroke ranged from 6 to almost 14 for COC users with migraine compared with nonusers without migraine. The three studies that provided evidence on hemorrhagic stroke reported low or no risk associated with migraine or with COC use.

# Risk of ischaemic stroke in people with migraine: systematic review and meta-analysis of observational studies.

[Etminan M](#), [Takkouche B](#), [Isorna FC](#), [Samii A](#).

## Source

Division of Epidemiology, Royal Victoria and Vancouver Hospitals, Canada.  
Mahyar.etminan@mail.mcgill.ca

## Abstract

### OBJECTIVE:

To explore the association between migraine and risk of ischaemic stroke.

### DESIGN:

Systematic review and meta-analysis.

### DATA SOURCES:

Observational studies published between 1966 and June 2004 (identified through Medline and Embase) that examined the association between migraine and risk of ischaemic stroke.

### RESULTS:

14 studies (11 case-control studies and 3 cohort studies) were identified. These studies suggest that the risk of stroke is increased in people with migraine (relative risk 2.16, 95% confidence interval 1.89 to 2.48). This increase in risk was consistent in people who had migraine with aura (relative risk 2.27, 1.61 to 3.19) and migraine without aura (relative risk 1.83, 1.06 to 3.15), as well as in *those taking oral contraceptives (relative risk 8.72, 5.05 to 15.05)*.

### CONCLUSIONS:

Data from observational studies suggest that migraine may be a risk factor in developing stroke. More studies are needed to explore the mechanism of this potential association. In addition, the risk of migraine among users of oral contraceptives must be further investigated.

[Contraception](#). 2012 Nov 12. pii: S0010-7824(12)00899-2. doi: 10.1016/j.contraception.2012.10.010. [Epub ahead of print]

# Randomized comparison of two Internet-supported fertility-awareness-based methods of family planning.

[Fehring RJ](#), [Schneider M](#), [Raviele K](#), [Rodriguez D](#), [Pruszynski J](#).

## Source

Marquette University, College of Nursing, Milwaukee, WI 53233, USA. Electronic address: richard.fehring@marquette.edu.

## Abstract

### BACKGROUND:

The aim was to compare the efficacy and acceptability of two Internet-supported fertility-awareness-based methods of family planning.

### STUDY DESIGN:

Six hundred and sixty-seven women and their male partners were randomized into either an electronic hormonal fertility monitor (EHFM) group or a cervical mucus monitoring (CMM) group. Both groups utilized a Web site with instructions, charts and support. Acceptability was assessed online at 1, 3 and 6 months. Pregnancy rates were determined by survival analysis.

### RESULTS:

The EHFM participants (N=197) had a total pregnancy rate of 7 per 100 users over 12 months of use compared with 18.5 for the CMM group (N=164). The log rank survival test showed a significant difference ( $p < .01$ ) in survival functions. Mean acceptability for both groups increased significantly over time ( $p < .0001$ ). Continuation rates at 12 months were 40.6% for the monitor group and 36.6% for the mucus group.

### CONCLUSION:

In comparison with the CMM, the EHFM method of family planning was more effective. All users had an increase in acceptability over time. Results are tempered by the high dropout rate.



