

Migraine and Contraception

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Just as a woman's own hormones can have an effect on migraine, so can hormones used for contraception. Because different types of contraception work in different ways, each can have different effects on migraine. Understanding how each method works can help you make the best choice for contraception, sometimes even with benefit for migraine.

What types of contraception are available?

There are two main types of contraception: hormonal and non-hormonal. Hormonal includes combined hormonal contraceptives (the 'pill' and the 'patch'), which contain synthetic oestrogen and progestogen. These are usually used for 21 consecutive days before a 7-day hormone-free interval during which a woman usually has a withdrawal bleed, just like a period. They are very effective methods of contraception as their main effect is to stop an egg being released from the ovaries (ovulation) each month. Combined hormonal contraception (CHC) is very safe for most women, including most women with migraine. However, it is not suitable for women who are at a higher background risk of blood clots, particularly women who smoke, have high blood pressure, who are very overweight, or who have migraine aura, since the oestrogen component can further increase the risk.

Other hormonal methods contain only progestogen and are usually suitable for women who are unable to, or do not wish to take oestrogens. The most effective methods work in the same way as the combined hormonal contraceptives, inhibiting ovulation,

but without the oestrogen. These include: the implant, which lasts for three years; the injection, which lasts for three months at a time; and the new oestrogen-free pill, which is taken every day without a break and contains the progestogen desogestrel. Other progestogen-only methods include the levonorgestrel intra-uterine system, which is inserted into the womb, slowly releasing progestogen into the lining of the womb over its five-year lifespan. This keeps the lining of the womb thin so that periods can be light or even absent, despite the normal hormone cycle and monthly ovulation continuing. The progestogen-only 'mini' pill doesn't reliably inhibit ovulation but helps the mucous secretions from the cervix stay thick and impenetrable to sperm. Menstrual cycles can be erratic although a few women find that their periods stop completely.

Of the non-hormonal methods, the standard copper intra-uterine device remains a highly effective method of contraception. However, it can cause increased and prolonged menstrual bleeding, which may be associated with migraine. Sterilisation, condoms, caps (diaphragms) and natural family planning methods have little effect on the normal hormonal cycle and therefore their use is not associated with any change in the pattern of migraine.

How do they affect migraine?

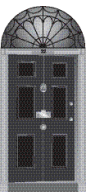
Headache is a common symptom during the early months of using hormonal contraception but usually resolves with time. With regard to migraine, many women, particularly those who have migraine without aura, report

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improvement. If attacks occur, they tend to come during the hormone-free week.^{1,2,3} Other women, usually those with migraine with aura, note a worsening in frequency or severity of attacks.⁴ A few women develop aura for the first time.

I've got migraine and I want to take the combined pill, is it safe?

For the majority of women combined hormonal contraceptives (CHCs) are a highly effective and safe method of contraception, with added health benefits such as reduced risk of womb, ovarian and bowel cancers, lighter menstrual periods, and relief from premenstrual symptoms. Some women even take CHCs to help treat menstrual migraine. However, for a minority of women, including those who have migraine with aura CHCs are associated with an increase in the risk of stroke.⁵ Fortunately, the actual likelihood of a stroke occurring in a young woman with migraine with aura who takes the 'pill' is extremely low. It is also an avoidable risk since most contraceptives that do not contain oestrogen are at least as effective as CHCs and some are more effective.

So how great is the risk? Imagine a group of 100,000 women, all under 35, who do not have migraine and who don't take CHCs. Only around one of those women is likely to have an ischaemic stroke within the next year. If the same group of women started on CHCs, 5 of them are at risk of an ischaemic stroke within the next year. If all 100,000 women had migraine with aura and took CHCs, around 28 would be at risk.⁶

As you can see, the risk of having a stroke is low even if you have migraine and take the pill, and is likely to be even lower if you don't smoke and don't have high blood pressure. However, as the risk is directly related to the oestrogen in the CHCs, it can be avoided by using non-oestrogen methods of contraception.^{7,8,9}

Hence the World Health Organization have made recommendations to ensure safe prescribing of CHCs by identifying women at risk of arterial thrombosis and, where the risks outweigh the benefit of the method, offering alternative contraception.¹⁰ These risk factors include high blood pressure, obesity, smoking and migraine with aura. Due to the increasing choice of methods available, there should be no loss of contraceptive efficacy. Women with a distant past history of migraine with aura, such as during childhood, may be offered a trial of CHCs but these should be discontinued immediately if aura symptoms occur.

I can often sense I'm going to get a migraine – is this an 'aura'?

Migraine with aura accounts for around 20% to 30% of migraines, and in 1% of cases there is no headache. The symptoms of aura are almost invariably visual, developing gradually over 5 to 20 minutes and lasting for less than 1 hour before disappearing.¹¹ People usually describe the visual aura as starting from a small, just off-centre bright spot, which enlarges to a bright, curved, zig-zag line (scintillation). The scintillations make map-like "fortification" figures that flicker with the brilliant intensity of a fluorescent bulb. Within these lines, vision can be dark and blank (scotoma). Sensory symptoms, such as feeling 'pins and needles' spreading up the arm from one hand and into the mouth, and difficulty saying the right words can also occur.

After the aura subsides, a typical migraine headache ensues, although sometimes the headache that follows is not a migraine-type headache, or there may be no headache.

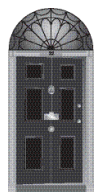
The crucial characteristics of aura are the duration and timing of symptoms in relation to onset of migraine headache. Aura should not be confused with the more common premonitory symptoms that occur 1 or 2 days before a

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migraine attack; these can be generalized visual spots, blurred vision or flashes occurring several hours before or even during the headache itself.

If you're not sure whether your warning symptoms are aura, ask yourself the following questions:

Do you ever have visual disturbances:

- Starting ***before the headache?***
- Lasting up to ***one hour?***
- Resolving ***before the headache?***

If you answer 'yes' to all three questions, it is likely that your symptoms are aura.¹²

What causes migraine in the 'pill-free' week?

Migraine occurring exclusively in the hormone-free week is probably triggered by falling levels of oestrogen.¹³ Such attacks are typically migraine without aura and usually commence a couple of days after the hormones are stopped. If acute treatment is inadequate to control symptoms, hormonal prophylaxis may help.

What can I do to help myself?

For the majority of women with migraine who are using hormonal contraception, management does not differ from standard treatment recommendations. This means treating attacks with pain-killers and keeping diary cards to establish the pattern of attacks and to identify non-hormonal triggers. Often effective acute treatment is usually all that is necessary, particularly if attacks only occur once or twice a month.

What can my doctor do to help me?

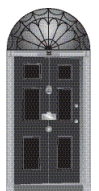
If pain-killers are not effective, your doctor can prescribe a number of different treatments

including a combination of analgesics with anti-nauseant drugs that help the painkillers to work more effectively, non-steroidal anti-inflammatory drugs, triptans, and ergot derivatives.

If acute treatment is inadequate to control symptoms, hormonal prophylaxis may be considered. Although there are no data from clinical trials to support the following suggestions, they are widely used in practice. The tri-cycle regimen of three consecutive hormone cycles without a break followed by a hormone-free interval means that you would have only five such migraines a year instead of 13. In some countries CHC pills are licensed for a 91-day cycle of 84 days of pill-taking followed by a 7-day break, resulting in only 4 pill-free intervals a year. Using natural oestrogen supplements during the hormone-free interval is another option. This provides some protection against oestrogen withdrawal, while enabling a progestogen withdrawal bleed to occur. Types of oestrogen available include 100 µg patches twice within the hormone-free week, 1.5 mg gel daily, or 2 mg oral oestradiol valerate daily during the pill-free interval.¹³

Key points

- Combined hormonal contraceptives (the 'Pill' and the 'Patch') are safe for healthy non-smoking women with migraine without aura
- Combined hormonal contraceptives are contraindicated for women with migraine with aura because of an increased risk of ischaemic stroke.
- Progestogen-only and non-hormonal methods of contraception are not associated with an increased risk of ischaemic stroke.
- Some progestogen-only and non-hormonal methods are more effective contraceptives than combined hormonal contraceptives.



Every effort has been taken to ensure that this article is accurate and complete but this cannot be guaranteed. Rapid advances in medicine may cause information contained here to become outdated, invalid or subject to debate.
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References

1. Kudrow L. The relationship of headache frequency to hormone use in migraine. *Headache* 1975;15(1):36-40.
2. Larsson-Cohn U, Lundberg PO. Headache and treatment with oral contraceptives. *Acta Neurol Scand* 1970;46:267-78.
3. Ryan R. A controlled study of the effect of oral contraceptives on migraine. *Headache* 1978;17(6):250-1.
4. Granella F, Sances G, Pucci E, Nappi RE, Ghiotto N, Nappi G. Migraine with aura and reproductive life events: a case control study. *Cephalalgia* 2000;20(8):701-7.
5. Etminan M, Takkouche B, Isorna FC, Samii A (2005) Risk of ischaemic stroke in people with migraine: systematic review and meta-analysis of observational studies. *BMJ* 330(7482): 63-65.
6. Becker WJ. Use of oral contraceptives in patients with migraine. *Neurology* 1999;53(4 Suppl 1):S19-25.
7. World Health Organization. Cardiovascular disease and use of oral and injectable progestogen-only contraceptives and combined injectable contraceptives. *Contraception* 1998;57:315-324.
8. Poulter NR, Chang CL, Farley TMM, Meirik O. Risk of cardiovascular diseases associated with oral progestogen preparations with therapeutic indications. *Lancet* 1999(354):1610.
9. Heinemann LA, Assmann A, DoMinh T, Garbe E. Oral progestogen-only contraceptives and cardiovascular risk: results from the Transnational Study on Oral Contraceptives and the Health of Young Women. *Eur J Contracept Reprod Health Care*. 1999;4(2):67-73.
10. World Health Organization. Medical eligibility criteria for contraceptive use. Third ed. Geneva: WHO, 2004.
11. Headache Classification Subcommittee of the International Headache Society (IHS). The International Classification of Headache Disorders (2nd edition). *Cephalalgia* 2004;24(suppl 1):1-160.
12. Gervil M, Ulrich V, Olesen J, Russell M. Screening for migraine in the general population: validation of a simple questionnaire. *Cephalalgia* 1998;18:342-8.
13. MacGregor EA, Hackshaw A. Prevention of migraine in the pill-free week of combined oral contraceptives using natural oestrogen supplements. *J Family Planning and Reproductive Healthcare* 2002;28(1):27-31.

