



*Accelerating research towards a cure for multiple sclerosis*

## MS and the Menstrual Cycle – Does one affect the other?

There is mounting evidence that female hormones, such as estrogen and progesterone, not only affect the reproductive system, but also impact the nervous and immune systems. [MRI studies](#) done in women with MS at different times of the menstrual cycle indicate that disease activity as measured on MRI may cyclically vary in synchrony with a fluctuating hormonal environment. Many women, too, find that their MS symptoms worsen just before, and during a period (especially weakness, balance, fatigue and depression). The decrease in estrogen levels leading up to menstruation may be a contributing factor. A slight rise in [core body temperature](#) that occurs a few days before and during menses may also make MS symptoms feel worse.



Some women with MS find it helpful to keep a monthly journal to look for patterns in their neurological symptoms. If MS symptoms worsen predictably around menses, schedule changes can be made to allow for more rest when symptoms will be on the rise, or perhaps increased doses of medication for symptom management. Drinking cool fluids, as well as [cooling equipment](#) can also be helpful at this time. A [small study](#) done at Mayo Clinic suggests that aspirin may also relieve fluctuating MS symptoms associated with the menstrual cycle. However, it is important to note that the number of subjects in this study was small (only 3),

and subjects took a fairly high dose of aspirin (650 mg twice daily), which poses risks if taken long term.



Another solution may be to reduce the impact of periods or even stop them altogether. A [study](#) published in 2009 shows that using oral contraceptives has the potential to ease MS symptoms. Researchers are still working to fully understand this effect. [Extended cycle oral contraceptives](#) (COC's) can be used to delay, or stop menstruation. Traditionally, oral contraceptives are packaged with 21 active (hormone-containing) pills and 7 inactive (placebo) pills. During the week of placebo pills, withdrawal bleeding occurs and this simulates an average 28-day menstrual cycle. COC's reduce or eliminate the placebo week, which in effect delays or stops monthly periods. Menstrual cycles can also be eliminated with the use of [hormone-based intrauterine devices](#). The safety of hormone-based contraception depends on your age, smoking status, mobility status, and other aspects of your medical history. Whether or not hormone-based contraception is appropriate is something that should be discussed with one's healthcare provider.

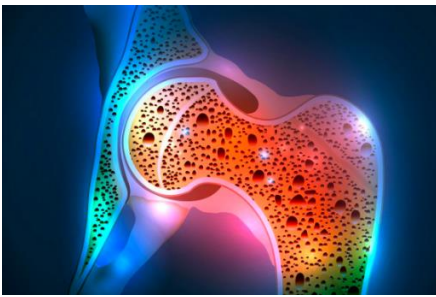
Some medications used to treat MS can have an effect on the menstrual cycle. Copaxone (glatiramer acetate) has no known effects on menstruation. On the other hand, drugs such as Novantrone (Mitoxantrone), Cytosan (cyclophosphamide), Tysabri (natalizumab) and beta interferons (Avonex, Betaseron, Extavia, Plegridy and Rebif) are known to cause irregularities in the menstrual cycle. Beta interferon treatment, for example, can cause vaginal bleeding between cycles.

The median age at natural menopause in women with MS is the same as for women in the general population, about 51 years old. As women with MS age, they face the typical symptoms of menopause: hot flashes and changes in mood, sleep, energy levels, as well as in bladder function. All women should make sure their regular health maintenance (bone density testing and other screening tests) is up to date as they approach menopause.



MS symptoms may slightly worsen while going through menopause. One possible reason for this is the decline in estrogen that occurs around this time of life. Levels of estrogen fluctuate

during perimenopause (the period leading up to menopause) and decrease after menopause. [Hormone replacement therapy](#) (HRT) can be used to relieve menopausal symptoms. HRT has also been found to improve symptoms of MS. Women with MS can use all forms of HRT (tablets, patches, gels and implants), however many choose against it because of the associated risks involved. HRT increases the risk of certain serious conditions, including heart disease, stroke, blood clots and breast cancer. Women should discuss these risks and other treatment options with their doctors. Some women with MS use antidepressant therapy or stress management techniques instead. Others use alternative therapies, such as topical hormone creams.



[Studies](#) have shown that women with MS can be at a higher risk for [osteoporosis](#). Among many factors, regular weight-bearing exercise can help prevent osteoporosis in women. However, physical exercise can be difficult and exhausting for some MS patients. Many experience a reduction in mobility, and this lack of mobility can increase the chances of

osteoporosis (those in wheelchairs being most at risk). In addition to not being active, the use of steroids during MS treatment can also increase the chances of developing osteoporosis. Women with MS should talk to their doctor about the factors that increase their individual risk for osteoporosis and what, if anything can be done to lower it. In addition, women with MS should begin having bone density scanning earlier than the standard age of 65.

It is important to note that MS symptoms and menopause symptoms may overlap. Identifying which symptoms are due to MS and which are due to menopause can be challenging. This is an important distinction when deciding on treatment. A new MS symptom might call for a change in a woman's MS treatment plan, while a symptom of menopause might call for lifestyle changes, hormone therapy, or some other type of drug treatment. In either case, symptoms caused by one condition may worsen symptoms of the other. For example, if hot flashes keep a patient up all night, she may be more likely to feel fatigue, depression and exacerbated MS symptoms the next day.

Very little research has been done on the effects of the menstrual cycle and menopause on MS disease activity. The studies that have been conducted to date suggest the interval surrounding both may be linked to worsened MS symptoms in some women, but more studies are needed to confirm these associations. In addition, more research is needed into the benefits of hormone-

based therapies for women with MS before any determination can be made as to whether their benefits outweigh the risks. The fundamental tenet of the Accelerated Cure Project's mission is to facilitate research efforts such as these. It is our hope that, through research, diagnosis, treatment outcomes and quality of life will be improved for all people living with MS until a cure is found.

