Your Menstrual Cycle

- How It Works
- How to Manage It

The National Women's Health Resource Center, Inc. (NWHRC), is the leading independent not-for-profit health information source for women. NWHRC develops and distributes up-to-date and objective women's health information based on the latest advances in medical research and practice.

FOR MORE INFORMATION, CONTACT:
National Women's Health Resource Center
157 Broad Street, Suite 106
Red Bank, NJ 07701
877-986-9472
www.HealthyWomen.org

MEDICAL ADVISOR FOR THIS PUBLICATION:
Thomas L. Lyons, MD, MS, FACOG
The Center for Women's Care and Reproductive Surgery
Clinical Assistant Professor, Department of Obstetrics and Gynecology
Emory University Medical School
Atlanta, GA

This publication was produced with the support of an educational grant from Wyeth Pharmaceuticals.

Menstrual Cycle Overview

When you were 11 or 12, you either couldn't wait for it to happen or you dreaded its arrival. Now that you're an adult, you probably can't wait for it to end.

We're talking about menstruation, the four or five days a month when your body reminds you of one of your prime functions as a woman: **reproduction**. The fact that you *don't* get pregnant is why you're bleeding, as the same complex symphony of hormones that build up the lining of your uterus to nurture an embryo reverses course, signaling your body to cease and desist its baby-preparation platform.

By now, of course, you know the result:

Your period begins.

Your Menstrual Cycle

As the graphic shows, your menstrual cycle involves four main hormones:

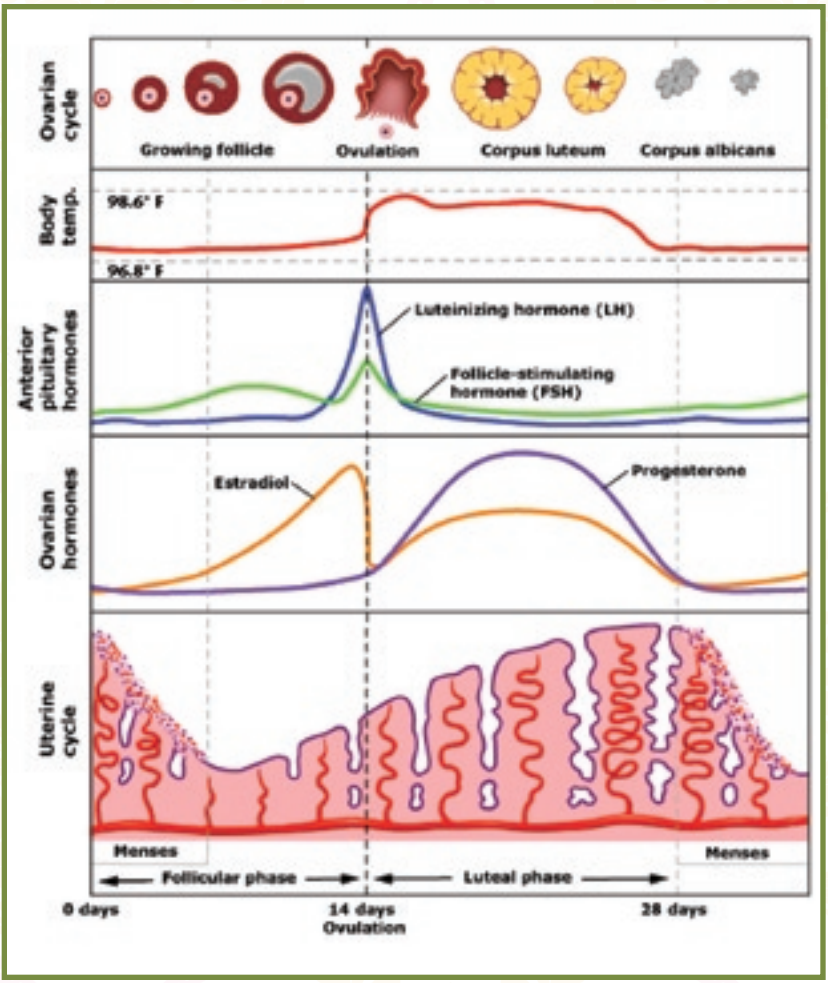
- Luteinizing hormone (LH)
- Estradiol, a form of estrogen
- Progesterone
- Follicle-stimulating hormone (FSH)

Your cycle begins the day you start bleeding. This day marks two things: The end of the previous cycle and the first day of the next one. It's from this point that you count forward. On that day, hormone levels are relatively low. Within a day or so, FSH levels begin rising, stimulating estradiol production and triggering the growth of several egg-containing follicles in your ovary. This is called, appropriately enough, the follicular phase.

By day seven, an ultrasound of your ovary would show several follicles, and a blood test would show high levels of estradiol. Thanks to the estradiol, your uterine lining has begun growing.

By day 14, one of those follicles has been picked as the lucky one. The rest stop growing and sink back into the ovary. At this point, you get a "surge" in estradiol as the hormone peaks, leading to a surge in LH and a smaller increase in FSH levels. About 36 hours after that LH surge, your ovary releases an egg.

Once the egg is gone, estradiol levels plunge, handing over the baton to progesterone, which begins its own rise and takes over the uterine-lining building job. Estrogen helps a bit, rising slightly throughout the next week or so. At the same time, FSH and LH gradually drop, and the follicle that released the egg shrinks. This is called the luteal phase. If you don't get pregnant by about day 23, progesterone and estradiol both drop, the uterine lining stops growing, and voila! On day 28 you begin bleeding, and the cycle starts all over again.



Reproduced with permission from: Corrine K. Welt, MD. "Menstrual Cycle." In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA 2008. Copyright © 2008 UpToDate, Inc. For more information, visit www.uptodate.com.

What's Normal? What's Not?

NORMAL	NOT NORMAL
Blood loss of about 2.5 ounces	Blood loss 10 to 25 times that amount—this usually means having a soaked pad and/or tampon every hour or less. It is most likely during puberty (when you first start your periods) and perimenopause (the years just before menopause), when reproductive hormones are erratic. If this sounds like your period, you may have abnormal uterine bleeding.
Menstrual cramps, typically managed with over-the-counter pain relievers.	Menstrual cramps so severe they interfere with your daily activities. These could be a sign of endometriosis or fibroids.
Some bloating, body aches, moodiness, headaches, or other physical or emotional symptoms, in the few days before your period starts. About 75 percent of women have some premenstrual symptoms.	Premenstrual symptoms that affect your quality of life. This is PMS (premenstrual syndrome) and affects about 30 to 40 percent of women. About 3 to 8 percent of women experience premenstrual dysphoric disorder (PMDD), a condition with more severe symptoms than PMS that significantly interferes with your daily life. Severe mood symptoms are the most important criteria for a PMDD diagnosis.

NORMAL	NOT NORMAL
Monthly bleeding from early adolescence through menopause, around age 51 or 52.	Any vaginal bleeding after menopause. This may be a sign of endometrial cancer. See your health care professional immediately.
Variability in your menstrual cycles. Before age 20 and after age 40, your cycle may become more variable (longer or shorter, heavier or lighter) thanks to fluctuating hormone levels.	Missing a period for more than one month (and not being pregnant or breastfeeding) or having a period that lasts more than 10 days. If either of these conditions occurs, see your health care professional.
If you think "not normal" describes your period, ask your health care professional for guidance on next steps.	

Women today menstruate about two-thirds more than our ancestors did. Once you reach menopause, you will have had an average of 450 periods, give or take a few dozen. Compare that to the 160 or fewer periods our ancestors had. Thousands or even hundreds of years ago, women menstruated far less than we do today. They had no choice: Without reliable birth control and readily accessible infant formula, they spent much of their reproductive life either pregnant or breastfeeding. Both prevent ovulation, and if you don't ovulate, you don't get a period.

Managing Your Periods

Today, for the first time in history, women have options for managing and controlling their periods instead of letting their periods manage and control them.

This is most often done with hormonal contraceptives that change your body's normal levels of reproductive hormones. These options allow women to have 12 more manageable periods, with less bleeding, fewer cramps, and more reliability; four periods a year; or just one period a year. If this seems like it's messing too much with Mother Nature, consider this: Before the advent of birth control, women rarely had as many periods as they do today. Instead, they spent much of their reproductive life either pregnant or breastfeeding, both of which suppress menstruation.

Having fewer periods is actually quite normal—and, studies find, something that women throughout the world desire. Just think: If you control your period, you can make sure it doesn't appear during that vacation to the beach, the weekend of the big marathon, or when you're in the middle of final exams. According to a survey of 250 U.S. women conducted recently for the National Women's Health Resource Center by Harris Interactive, most women agree that they would prefer to get their period less often (76%) and that they view their period as a nuisance (74%). At the same time, nearly half of women (49%) report a belief that it is not healthy to get their period less than once a month.

But there are other benefits to using hormonal contraception to manage your menstrual cycle as well as to provide safe contraception. Studies find it can:

- Reduce your risk of ovarian and endometrial cancer
- Relieve and prevent menstrual cramps
- Reduce or prevent heavy bleeding (and, as an added benefit, prevent the anemia or low iron that often results)
- Reduce the pain of endometriosis
- Prevent menstrual migraines and many of the physical and mood-related symptoms associated with PMS and PMDD, which typically result as estrogen levels plummet with ovulation

Menstrual disorders are the most common gynecologic reason women see their health care professional. About two-thirds of women aged 18 to 50—nearly 2.5 million a year—see their health care professional about something related to menstruation, including missed periods, periods that last too long, heavy bleeding, cramps, premenstrual symptoms, migraines or anemia. These are not benign problems. About one-third of women say they spend an average of 9.6 days a year in bed because of menstrual-cycle related issues, while 12 percent of emergency department visits in women aged 15 to 44 are related to gynecologic problems.

- Save money. An economic analysis found that using birth control pills for three consecutive months with no break not only saves money in terms of the costs of the pills, over-the-counter pain relievers, iron tablets, and tampons and menstrual pads, but also reduces societal costs related to physician visits and menstrual-related disability.

Interested?

The first step is an appointment with your health care professional. It is important that you consider your own health and medical history when choosing a menstrual management method. It is also important that you understand the potential downsides:

- **Breakthrough bleeding.** Typically just light spotting, which may continue for weeks or months until your body adjusts to the new hormonal regimen. This is one of the biggest reasons women stop using continuous contraception.

- **Cost.** Unless you're using a product specifically approved by the U.S. Food and Drug Administration (FDA), your insurance company many not cover the product for the time frame in which you'll need it. For instance, the company may only cover 14 packs of birth control pills every year, but if you take them continuously you need 17.

Hormonal Options for Menstrual Cycle Management

OPTION	HOW IT WORKS
Estrogen-progestin oral contraceptive pills (numerous options available)	You take one pill every day for three weeks; then either skip a week or take a week of placebo pills, during which you have your period. You can shorten the hormone-free period from seven to four or five days, or use a very low dose of estrogen during this time to further suppress ovulation and reduce menstrual symptoms. These oral contraceptives (OCs) are not approved for continuous contraception but may be used "off label," and have been for years, to reduce or stop periods.
Seasonale and Seasonique Two of three brands approved for continuous contraception	Seasonale contains 84 active pills and one week of placebo; periods are similar to those with regular birth control pills. Seasonique contains three months of active pills and one week of low-dose estrogen pills. Your period lasts an average of three days.
Lybrel Most recently approved brand for continuous contraception	You take one pill 365 days a year. In clinical trials, 59 percent of women stopped menstruating and had no spotting after one year.
Progestin-only oral contraceptive pills	This type of pill does not contain estrogen. Progestin-only pills primarily work by thickening the cervical mucus, thereby preventing sperm from entering the uterus. To work effectively, they must be taken at the same time every 24 hours. They can decrease menstrual blood loss and reduce cramps and menstrual-cycle related pain.

	BEST FOR …	CAUTIONS
	Women who want to minimize menstrual symptoms and bleeding, but who still want to have monthly periods.	Women who have had blood clots or stroke, who are 35 or older and smoke, who have a history of an estrogen-dependent cancer, or who have active liver disease or undiagnosed abnormal uterine bleeding should not use estrogen-based contraception without physician consultation.
	Women who want fewer periods but don't want to eliminate their periods.	Women who have had blood clots or stroke, who are 35 or older and smoke, who have a history of an estrogen-dependent cancer, or who have active liver disease or undiagnosed abnormal uterine bleeding should not use estrogen-based contraception without physician consultation.
	Women who don't want to have any periods.	Women who have had blood clots or stroke, who are 35 or older and smoke, who have a history of an estrogen-dependent cancer, or who have active liver disease or undiagnosed abnormal uterine bleeding should not use estrogen-based contraception without physician consultation. Higher rates of breakthrough bleeding than with other oral contraceptives.
	Ideal for breastfeeding women because it can be started immediately after delivery, whereas estrogen reduces milk production; also ideal for women who cannot take estrogen.	May cause irregular bleeding patterns, spotting or break-through bleeding, amenorrhea (absence of a monthly period), heavy bleeding, abdominal pain and headaches.

OPTION	HOW IT WORKS
Contraceptive patch (Ortho Evra)	You stick the patch to your skin for three weeks and then replace it with a fresh patch. One study in 239 women found 12 percent stopped menstruating when they used the patch continuously over three months, and most had lighter and shorter periods. Not approved and usually not recommended for continuous contraception, but can be prescribed "off label" if your health care professional agrees.
Contraceptive vaginal ring (NuvaRing)	You insert the ring into the vagina and leave it for three weeks then replace with a new one. Not approved for continuous contraception but can be prescribed "off label" if your health care professional agrees. In the one study of continuous use of the ring, women who used the ring for one year stopped menstruating. However, they had several days of spotting in the first three months.
Injectable contraceptive (Depo-Provera, Lunelle)	You have one injection every month (Lunelle) or every three months (Depo-Provera) at your health care provider's office. Half of women stop having periods after a year; 90 percent within two years.
Levonorgestrel intrauterine system (Mirena)	This type of IUD is inserted in your uterus by a health care professional during a pelvic exam. It releases a continuous dose of progestin. It may be left in place for up to five years. Studies find it significantly reduces bleeding, and about 20 percent of users stop having periods within one year.
Progestin implant (Implanon)	Your health care provider implants a tiny rod about the size of a matchstick in your shoulder. Studies find 22 percent of women stop having periods during the first two years, and a third have three or fewer bleeding/spotting episodes in 90 days. May be left in place up to three years.
Norethindrone acetate tablets (Aygestin)* ** Not a contraceptive*	You take one to three pills a day. Reduces bleeding by 87 percent after three months of use.

	BEST FOR ...	CAUTIONS
	Women who don't want to have to remember to take a pill every day.	Women who have had blood clots or stroke, who are 35 or older and smoke, who have a history of an estrogen-dependent cancer, or who have active liver disease or undiagnosed abnormal uterine bleeding should not use estrogen-based contraception without physician consultation. Breakthrough bleeding is common with continuous use. The patch leads to higher blood levels of estrogen than other estrogen-based products, which could increase the risk of blood clots or stroke.
	Women who don't want to have to remember to take a pill every day.	Side effects may include vaginal infections and irritations, vaginal secretions, headaches, weight gain and nausea.
	Women who don't want to take pills every day and want to reduce the frequency and severity of their periods.	Side effects may include breakthrough bleeding, weight gain and temporary loss of bone density.
	Women who don't want to have to worry about contraception and/or can't use estrogen-based products.	Side effects may include breakthrough bleeding, ovarian cysts and acne.
	Women who can't use estrogen-based products, who don't want to use pills or shots and who want long-acting contraception.	Side effects may include breakthrough bleeding, headache, acne and breast pain.
	Women who use another form of contraception and need help with heavy bleeding and other menstrual symptoms.	Side effects may include mood changes, bloating and weight gain.

Managing Your Menstrual Cycle with Supplements

You may have heard about using herbal or nutritional supplements for managing symptoms associated with your menstrual cycle. Here's what we know:

Black cohosh. There is no evidence that this herb has any significant effects on PMS, so don't waste your money.

Vitamins and minerals. Studies of magnesium find that 200 milligrams a day taken throughout the month can help reduce bloating, weight gain and swelling and, at 360 milligrams a day, may help improve mood, reduce migraine headaches and soothe menstrual cramps. Meanwhile, the American College of Obstetricians and Gynecologists recommends 400 IU of vitamin E for PMS, primarily because of its low risk and good potential for improvement. Studies find it can also help relieve breast pain and menstrual cramps. Vitamin B6 is also worth trying, since an analysis of nine clinical trials found 100 milligrams a day could significantly reduce premenstrual symptoms like bloating, breast pain, headache and lack of energy.

Chasteberry. This herbal remedy limits prolactin production, a hormone that reduces estrogen levels. Most studies find chasteberry can improve PMS symptoms, but few studies compared the herb to placebo. Still, it's worth a try.

Be sure and discuss any supplements you take or want to try with your health care professional.

Facts to Know about Managing Your Menstrual Cycle

1. Your menstrual period is your body's way of ridding itself of the extra blood and nutrients it has built up in your uterus to support a pregnancy.
2. Most women get their periods around age 11 or 12; most women stop menstruating around age 52.
3. The typical menstrual cycle is 28 days long. It begins and ends on the first day of your period. Ovulation occurs around day 14.
4. Four hormones are primarily involved in menstruation: luteinizing hormone, follicle-stimulating hormone, estradiol and progesterone.
5. While many women have no problems with their menstrual cycles, some experience heavy bleeding, cramping, mood swings, bloating and other symptoms during their premenstrual and menstrual periods that affect their quality of life.
6. Women today have numerous options for preventing their periods, reducing their intensity and duration or resolving bothersome symptoms.
7. Hormone-based contraception offers women various options for eliminating their periods for up to a year.
8. The major downside to continuous contraception is breakthrough bleeding in the first few weeks or months.
9. Continuous contraception designed to stop a woman's periods is safe, with no side effects other than those seen with regular contraception.
10. Women were never meant to have as many periods as they have today.

Questions to Ask Your Health Care Professional

1. How do I know if my periods are normal or not?
2. What treatments are available for heavy menstrual bleeding?
3. What are the advantages, disadvantages and risks of the treatment option you are suggesting to control or end my heavy bleeding?
4. Is there anything I can do about the terrible PMS I get every month?
5. What are the risks and benefits of the treatment option you've recommended for my PMS? How effective is it?
6. Is there anything I can do to relieve the awful cramps I get every month?
7. What are the risks and benefits of continuous contraception?
8. Is it better to have a period every few months or not to have one at all?
9. How will I know if I get pregnant if I'm taking continuous contraception?
10. What if I want to get pregnant? How long after stopping contraception will it take?

Have a question about managing your menstrual cycle?

Read on to learn more from NWHRC's reproductive health experts. Or, visit

www.HealthyWomen.org/menstrualcycle

Ask the Expert

Q: I'm interested in having fewer, lighter periods, but I worry that manipulating my period might not be safe.

A: Numerous studies have been conducted on the use of continuous contraception and none find any serious medical consequences to skipping periods, just the inconvenience of some breakthrough bleeding and spotting. Remember, before the days of birth control, women had far fewer menstrual cycles because they spent so much of their reproductive life either pregnant or breastfeeding, both of which suppress menstruation. The bottom line, according to experts, is that menstruation is not physiologically necessary for good health.

Q: I am 43 years old. I have three healthy children and I am in a great marriage. I know I have several more years until menopause and, to be honest, I'm tired of having my period. They get heavier every month and are becoming a real pain. Are there any permanent options to end menstruation other than a hysterectomy?

A: Your first step is a complete medical examination to determine if anything else might be causing your heavier periods beyond the fluctuating hormone levels common at your age—things like fibroids, endometriosis or even uterine hyperplasia, which is overgrowth of the uterine lining.

If everything checks out, your health care professional can recommend options such as ibuprofen and other non-steroidal anti-inflammatories; oral contraceptives; or a progestin-releasing IUD. All have been shown to significantly reduce bleeding in perimenopausal women.

If those don't work, another option is an outpatient surgical procedure called an endometrial ablation. It involves using hot water, radiofrequency waves, microwaves or freezing to destroy the lining of the uterus. Studies find it is very effective, with most women reporting their periods either end or are much lighter. However, like any surgery, it carries a risk of short- and long-term complications. There is also the chance that the endometrium will grow back, but at your age, the likelihood of that happening before menopause is low.

Q: I'm a first-time birth control pill user. I was told the best way to begin taking them was to wait until my next period begins. However, while my last period arrived at the time it should, two days after it stopped I began spotting on and off. This has continued for a week and is now getting a bit heavier. My question is, should I wait to see if this stops and begin the pills when my next cycle starts, or can I begin them now?

A: Before we get into the issue you ask about, I want to address your prolonged, heavy bleeding. Menstrual bleeding rarely continues beyond seven days, with the amount of bleeding diminishing throughout that time. I strongly recommend you contact your health care provider for a complete examination.

Now, as for your question about when to start taking oral contraceptives, there's really no hard-and-fast rule about when to start taking birth control pills. Starting in the first few days of your cycle is the surest way to prevent inadvertently taking pills while you are pregnant. If there is any chance you might be pregnant (you feel fatigue, you had to take emergency contraception last cycle, etc.), you can always take a home pregnancy test. Alternatively, you can start on the Sunday after your period starts which provides a point-in-time for when a new pill pack should begin. Some providers even suggest that you start pills as soon as you get them, provided you are reasonably sure that you are not likely to get pregnant this current cycle.

However, we still recommend you use a backup form of birth control during the first month of oral contraceptive use just to be on the safe side.

What's most important about oral contraceptive timing is that you take your pill at the same time every day. This helps you remember to take it (i.e., you always take your pill after you brush your teeth) and helps maintain steady hormone levels. It is also important that you don't miss a day. If you do miss a day, take two pills the following day. If you miss two pills, take two pills a day for two days. But if you miss more than that, you should use an alternative form of birth control until you start another pill pack. You should also check with your health care professional as to whether you should continue the current pack or just start over again once your period begins.

Q: I am 47 years old and I take oral contraceptives. My gynecologist says I can take them until age 50, but then I should stop so I can see where I am with menopause. I do not smoke and I am in good health. Is it safe to keep taking oral contraceptives?

A: Good for you for taking steps to prevent an unwanted pregnancy! I see too many women your age who think they're "too old" to get pregnant and just give up on birth control. But until you have gone 12 consecutive months without a period (the true definition of menopause), you could still become pregnant.

There's no age limit on any contraceptive option. Having said that, however, it's clear that some options are more appropriate than others based on a woman's individual circumstances and health profile. For instance, you don't mention if you're married, in a monogamous relationship or dating, or how sexually active you are. All are issues you should discuss with your health care professional when determining contraceptive options. If you're having sex infrequently, you might want to consider a barrier method, such as a condom or diaphragm.

The most common birth control method used by perimenopausal women is sterilization, either tubal ligation, i.e., "having your tubes tied," or hysterectomy. Either is a pretty drastic option, however, since both involve surgery. Plus, research shows that other options can be just as effective when used appropriately.

If you're experiencing the heavy menstrual bleeding common to perimenopausal women, talk to your health care provider about the levonorgestrel IUD, which not only provides effective birth control, but may also help with the heavy bleeding. And, of course, another good option is the one you're already using—oral contraceptives.

In the 1970s, women over 35 were told to stop taking oral contraceptives because of the potential risk of heart disease. Since then, however, we've learned that risk exists primarily for women who smoke, making birth control pills a good option for nonsmoking premenopausal women of any age. Plus, given the drop in the amount of estrogen used in oral contraceptives in recent years, the risks of other health conditions, including blood clots, stroke and heart disease, have also dropped.

In fact, long-term use of birth control pills has numerous health benefits, including reducing the risk of ovarian cancer. Studies also suggest that birth control pills reduce the risk of endometrial cancer, colorectal cancer, pelvic inflammatory disease, fibroids and even endometriosis, as well as helping alleviate some of the heavy bleeding related to fibroids and endometriosis.

One of the main reasons perimenopausal women choose oral contraceptives as their contraception of choice is to help reduce the heavy bleeding and irregular periods often a part of this time of life. There's also some evidence they can help maintain bone density and reduce the risk of osteoporosis, as well as reduce the incidence of hot flashes, both of which concern perimenopausal women. An added bonus—they can help clear up middle-aged acne.

So, to summarize, it's fine to continue taking birth control pills up to age 50 or even 51 (keep in mind that the average age of menopause in this country is 51) as long as you don't have any risk factors for heart disease or other potential complications, including smoking, obesity, diabetes, high cholesterol, high blood sugar or migraines.

One reason your doctor suggests you stop taking birth control pills when you turn 50 is so you'll know if you've reached menopause. If you continue taking them as directed—with a week's break between active pills—you'll continue to menstruate and won't know.

Although the decision is between you and your doctor, you may want to consider at least taking a break for a few months and using a non-hormonal contraception to see if your periods continue, or if you have reached menopause and no longer need contraception.

Resources

American Association of Gynecologic Laparoscopists
1-800-554-2245
www.aagl.org

American College of Obstetricians and Gynecologists
202-638-5577
www.acog.org

American Society for Reproductive Medicine
205-978-5000
www.asrm.org

Association of Reproductive Health Professionals
202-466-3825
www.arhp.org

Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
604–875-5927
www.cemcor.ubc.ca

The Hormone Foundation
1-800-467-6663
www.hormone.org

National Women's Health Resource Center
1-877-986-9472
www.HealthyWomen.org

North American Menopause Society
1-800-774-5342
www.menopause.org

References

Archer DF, Jensen JT, Johnson JV, Borisute H, Grubb GS, Constantine GD. Evaluation of a continuous regimen of levonorgestrel/ethinyl estradiol: phase 3 study results. Contraception. 2006 Dec;74(6):439-45. E-pub 2006 Sep 18.

Bendich A. The potential for dietary supplements to reduce premenstrual syndrome (PMS) symptoms. J Am Coll Nutr. 2000;19(1):3-12.

Braunstein JB, Hausfeld J, Hausfeld J, London A. Economics of reducing menstruation with trimonthly-cycle oral contraceptive therapy: comparison with standard-cycle regimens. Obstet Gynecol. 2003 Oct;102(4):699-708.

Curtis KM, Hillis SD, Kieke BA Jr, Brett KM, Marchbanks PA, Peterson HB. Visits to emergency departments for gynecologic disorders in the United States, 1992–1994. Obstet Gynecol. 1998;91(6):1007-1012.

den Tonkelaar I, Oddens BJ. Preferred frequency and characteristics of menstrual bleeding in relation to reproductive status, oral contraceptive use, and hormone replacement therapy use. Contraception. 1999 Jun;59(6):357-62.

Frankovich RJ, Lebrun CM. Menstrual cycle, contraception, and performance. Clin Sports Med. 2000 Apr;19(2):251-71. Review.

Hidalgo M, Bahamondes L, Perrotti M, Diaz J, Dantas-Monteiro C, Petta C. Bleeding patterns and clinical performance of the levonorgestrel-releasing intrauterine system (Mirena) up to two years. Contraception. 2002 Feb;65(2):129-32.

Irvine GA, Campbell-Brown MB, Lumsden MA, Heikkilä A, Walker JJ, Cameron IT. Randomised comparative trial of the levonorgestrel intrauterine system and norethisterone for treatment of idiopathic menorrhagia. Br J Obstet Gynaecol. 1998 Jun;105(6):592-8.

Kaufman DW, Shapiro S, Slone D, et al. Decreased risk of endometrial cancer among oral contraceptive users. N Engl J Med 1980; 303:1045.

Kaunitz AM. Injectable contraception. New and existing options. Obstet Gynecol Clin North Am. 2000 Dec;27(4):741-80.

Kaunitz AM, Barbieri RL , Barss VA. Hormonal contraception for suppression of menstruation. UpToDate database. Last updated: February 4, 2008.

Kaunitz AM. Menstruation: choosing whether. . .and when. Contraception. 2000;62(6):277-284.

Kjerulff KH, Erickson BA, Langenberg PW. Chronic gynecological conditions reported by US women: findings from the National Health Interview Survey, 1984 to 1992. Am J Public Health. 1996;86(2):195-199.

London RS, Murphy L, Kitlowski KE, Reynolds MA. Efficacy of alpha-tocopherol in the treatment of the premenstrual syndrome. J Reprod Med. 1987;32(6):400-404.

McGurgan P, O'Donovan P. Second-generation endometrial ablation: an overview. Best Pract Res Clin Obstet Gynaecol. 2007 Dec;21(6):931-45. E-pub 2007 May 23.

Miller L, Verhoeven CH, Hout J. Extended regimens of the contraceptive vaginal ring: a randomized trial. Obstet Gynecol. 2005 Sep;106(3):473-82.

Rosenberg MJ, Waugh MS. Oral contraceptive discontinuation: a prospective evaluation of frequency and reasons. Am J Obstet Gynecol. 1998 Sep;179(3 Pt 1):577-82.

Schellenberg R. Treatment for the premenstrual syndrome with agnus castus fruit extract: prospective, randomised, placebo controlled study. BMJ. 2001;322(7279):134-137.

Stewart FH, Kaunitz AM, Laguardia KD, Karvois DL, Fisher AC, Friedman AJ. Extended use of transdermal norelgestromin/ethinyl estradiol: a randomized trial. Obstet Gynecol. 2005 Jun;105(6):1389-96.

Sulak PJ, Kuehl TJ, Ortiz M, Shull BL. Acceptance of altering the standard 21-day/7-day oral contraceptive regimen to delay menses and reduce hormone withdrawal symptoms. Am J Obstet Gynecol. 2002 Jun;186(6):1142-9.

Weiderpass E, Adami HO, Baron JA, et al. Use of oral contraceptives and endometrial cancer risk (Sweden). Cancer Causes Control. 1999;10:277.

Wyatt KM, Dimmock PW, Jones PW, Shaughn O'Brien PM. Efficacy of vitamin B-6 in the treatment of premenstrual syndrome: systematic review. BMI. 1999;318(7195):1375-1381.

National Women's
Health Resource Center
www.healthywomen.org

157 Broad Street, Suite 106, Red Bank, NJ 07701
877-986-9472 • www.HealthyWomen.org

MMG908