



Specialty Medicine Compounding Pharmacy

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Irregular Menstrual Cycles

Irregular periods are one of the most common menstrual complaints of women. An irregular period is any type of bleeding that is abnormal when compared to a woman's usual menstrual cycle. This can include a late period, an early period or bleeding between periods. An irregular period may also appear as heavy bleeding or scanty bleeding. Many women also experience irregular periods in the form of a missed period, continuous periods, or periods that occur twice in one cycle. Irregular periods affect about 30% of women in their reproductive years. Irregular menstrual cycles may be short term or long term. Short term irregularity is defined by having one off or sporadic occurrence menstrual period. Causes of short term irregularity include: stress, dietary problems, excessive exercising, drugs, break in routine, thoughts and emotions, sexual activity, anxiety about pregnancy, illness or physiological imbalance. These cases are probably not a cause for great concern unless a woman is experiencing pain or just feels as if something is wrong. By nature, a delayed period may indicate pregnancy and this should be ruled out first. Long term irregularity can be a cycle that varies in length from month to month or the experience of various abnormal symptoms. For example, excessive bleeding, no cycle for months at a time, and very painful periods or ovulation are all abnormal symptoms of a menstrual cycle.

Irregular menstrual periods are usually the result of hormonal signals that have been thrown out of sync. In order to produce a period, a woman's body makes estrogen and progesterone hormones. These hormones are stored in some parts of the brain and ovaries inside the body. To trigger ovulation and menstruation, these parts of the body send signals to one another. When these signals get crossed or skipped irregular periods may be the result. There are a number of things that can easily cause hormone levels to change. Depending on the cause of the irregular period, there may or may not be many treatment options. However, if there is an underlying medical condition that is causing irregular periods, then receiving treatment for the condition should help to get a woman's menstrual cycle back on track. While the most common cause of irregular delayed menses is due to stress, the next most frequent type is due to polycystic ovarian syndrome.

This is a complex condition of the ovaries in which follicles grow and produce estrogen but an egg does not get released. This results in a high estrogen condition but infrequent menses. When the period does start, it often can be very heavy and persists for days or even weeks. The continuous, high estrogens can cause the uterine lining to grow and eventually the lining may become too thick and will slough off causing a menstrual-like bleed. Estrogen has been linked to endometrial cancer. Most doctors feel that a menstrual period should be induced with hormones (progesterone) so that a woman is not at risk for endometrial cancer because of the chronic and continuous estrogen stimulation associated with polycystic ovarian syndrome. Women who have polycystic ovarian syndrome will frequently have abnormal carbohydrate metabolism called insulin resistance or even develop diabetes. Additionally, excess hair growth due to extra testosterone occurs in many women this syndrome.

Treatment Options

Hormonal contraceptives are often used to help regulate menstrual cycles. These contraceptives combine estrogen and progesterone to maintain a woman's hormones at specific and balanced levels. They are available by prescription and come in oral, patch, ring, and injectable forms. They do not correct the underlying problem that causes the irregularity but they will regulate the pattern very precisely to the same day of the week each cycle. Women may also take a sequential hormone regimen. In this regimen, estrogen is given each day and then progesterone is given for 10-14 days each month in order to induce a withdrawal bleed. This regimen will not protect against pregnancy should ovulation occur so if a pregnancy is desired, this may be the best regimen.

For women with polycystic ovarian syndrome most physicians will prescribe oral progestins or progesterone to take for 10 days every two months if there has not been a spontaneous menses. This is thought to protect against the development of endometrial cancer from the long term elevation of estrogens. Carbohydrate metabolism abnormalities associated with polycystic ovarian syndrome are often successfully treated with a combination of diet



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and medications, and the menstrual irregularities may disappear. Metformin, a drug which reduces high insulin levels, has been shown to resume normal menses in some women with polycystic ovarian syndrome.

Canine Vaccinations

Annual vaccinations, also called annual boosters, have played an important role in disease prevention in dogs. There are a number of questions that should be asked before allowing a dog to be vaccinated. There are two major questions that should be answered:

1) Are multiple agent (multivalent) vaccines "overloading" the pet's immune system?
2) Are "annual vaccinations" really necessary annually?
Vaccines stimulate the immune system to produce antibodies to the disease so that the dog is protected against various organisms in the environment. If the immunized dog is later exposed to the infectious agent, the antibodies react quickly to attack and destroy the disease. Initial shots are given to puppies to gradually phase-in immunity as the mother's milk protection wears off. Puppies are generally vaccinated against parvovirus, distemper, adenovirus (vaccine also protects against hepatitis), and parainfluenza in combined shots and against rabies in a single vaccination given at the age of three months. They may be inoculated against leptospirosis, Lyme disease, and corona virus if local conditions warrant or if the pet will be traveling in an area where these diseases are known to be a problem. Those who plan to board pets or to take them to dog shows, dog parks, or other gatherings should add Bordatella vaccine to their inoculation protocol to protect against kennel cough. Initial Bordatella vaccine is administered through the nose; subsequent doses and boosters can be given as an injection.

Vaccines come in two types: killed virus or bacterin and modified live virus or bacterin. The killed vaccines are mixed with an adjuvant used to boost the effectiveness. However, various adjuvants are suspected of causing problems. Killed vaccines are more stable, but they require more injections to immunize the pet and are more likely to cause allergic reactions ranging from low-grade fever or muscle aches to hives, facial swelling, or even vomiting and diarrhea. In rare cases, a pet may collapse within a few minutes of the injection from a severe anaphylactic reaction, but most reactions take a day or more to manifest. Modified live vaccines work quickly and

for longer periods, are less expensive, and require only a single dose to be effective. However, they should not be used in sick animals and may cause suppression of the immune system in susceptible animals or abortions in pregnancy.

Vaccinations challenge the immune system in a complex manner, so it is not advisable to vaccinate a puppy or dog that is sick. Vaccines can fail if the animal has a fever or is taking steroids, or if they are given too close together or too far apart. They can also fail if the vaccine has been improperly handled or stored and may not protect a puppy that has lost immunity from mother's milk before the vaccine is administered.

Despite problems, vaccinations are still a pet owner's best line of defense against distemper and parvovirus that can kill puppies and young dogs and against rabies that kill dogs (and people) of any age. Vaccinations also protect canines against other contagious diseases that can cause short term and long term health problems. Pet owners should work with their veterinarians to design a vaccination schedule for each pet based on age, health status, reproductive status, and environment. Rotating vaccines so that they are not all given at once and obtaining titer tests for antibodies are both options.

However, titer tests are more expensive than vaccinations and not completely reliable; therefore many veterinarians do not recommend them. Adverse reactions to vaccines should be reported to the veterinarian and the US Pharmacopeia, a private organization that operates a reporting program along with the American Veterinary Medical Association. USP can be reached at www.usp.org on the internet or at (800) 822-8772.

Remodel Update

Work continues on the rear of the building. We have completed the building of the interior walls and all are covered with drywall. Most are even painted! The new lecture room looks great! The new sterile/clean room is getting its ceiling this week and the new clean room structure should be assembled by the end of the week. The new phone system has been installed and is a huge improvement! The new system has a much improved auto-attendant and routes calls much more effectively than before. Its biggest improvement is its ability to effectively route calls based on the time of day. We hope you enjoy the improvements (we do!).