Endometrial ablation refers to any method by which the lining of the uterus (endometrium) is destroyed or removed in an effort to normalize or stop menstrual flow. There are multiple techniques available to accomplish this process. An ablation is performed when a woman’s periods are troublesome in either their flow and/or length. Commonly considered a “hysterectomy alternative”, the endometrial ablation has become a mainstay in the treatment of menstrual problems.

One of the first issues to consider, however, is “what is an abnormal period?” The perception of a woman’s period is subjective at best. That is why, when taking a “menstrual history”, we ask specific questions pertaining to frequency and length of cycles, pad and tampon use, need for doubling protection, accidents and effect on activities. By definition, a heavy flow (menorrhagia=men, month+rrhagia, to burst forth) is a cycle longer than 7 days with a blood loss of over 80cc (1/3 cup) each period. Irregular, frequent or mid-cycle bleeding (metrorrhagia=metra, womb+rrhagia, to burst forth) is by definition cycles occurring less than 21 days apart (start to start), periods which occur without predictable pattern, or if regular cycles are occurring, when spotting or bleeding is occurring between these cycles. Either of these problems fall under the category known as Abnormal Uterine Bleeding (AUB), which can be more liberally defined as “any flow which is uncomfortable, causes social embarrassment, requires limiting of activities, or otherwise adversely affects a woman’s quality of life.” (Sorry guys, but interrupting your “quality of life” does not necessarily count.) Most women do not discuss menstrual issues with their female friends and, therefore, are frequently unaware that what they may consider normal would horrify other women. If you are still not sure if you have a menstrual problem, take this short quiz:

The sloughing of the endometrial lining is responsible for a woman’s period.
- Are your cycles longer than 7 days, or occur less than 3 weeks apart (or are you on more than you are off)?
- Do you have to change your protection more than every 2 hours, or have to double (pad with your tampon, two or more pads, or using supers or even diapers to prevent bleeding through)?
- Have you had more than one or two episodes of bleeding through in public necessitating an embarrassing and hasty exit?
- Are your clots bigger than a quarter or half-dollar?
- Do you avoid going out on your heavy days, or miss work because it’s too hard to try to stay on top of your bleeding?
- Are you anemic?
- Does Kotex sell to you wholesale?

If you answered yes to any of these questions, then you have AUB (sorry, but there are no prizes...)

There are many causes for AUB (we will not address these in detail here) including abnormal ovulation (i.e. the infamous “hormonal imbalance”), fibroid tumors, polyps, adenomyosis, and estrogen containing medications such as birth control pills and estrogen replacement therapy. Less common causes include endocrine abnormalities such as thyroid problems, blood clotting disorders, and simply being cursed ;). Most reasons for AUB can eventually be diagnosed, but, in some women, the exact cause is never found. That doesn’t mean that there is not a problem or that it is simply in your head—it’s just that we don’t know everything.

The traditional method for treating resistant AUB was a D&C and eventual Hysterectomy. Those who did not respond to hormonal treatments of birth control pills had no other options. Hysterectomy is still the 3rd most commonly performed surgery behind Cesarean Sections and Gall Bladder removal (We OB/GYN’s are proud that we hold the number one and 3 position). Removal of the uterus is still the best and most appropriate treatment for many female problems, but the endometrial ablation can be utilized in many of these situations thereby avoiding hysterectomy/major surgery altogether.

### Types of Endometrial Ablation

First performed in the mid 1970’s, the technique for endometrial ablation (EA) has been refined and improved with better equipment and approaches. EA destroys the uterine lining or endometrium by either...
heat, excision or freezing. Each modality has its pros and cons, which we will discuss in a bit. The uterus is lined by a glandular layer of cells called the endometrium. This is the tissue layer that provides the area for a pregnancy to implant and obtain nutrients by contacting the maternal blood flow. If pregnancy does not occur, (which is the typical monthly occurrence), then the ovarian hormones shift and decrease, the lining loses its support, breaks down and then sheds resulting in the period or menstrual cycle. Influences that disrupt this process include erratic or absent ovarian hormone production (i.e. irregular ovulation), infection, and structural abnormalities including fibroids and polyps. When this occurs, bleeding may be heavy and/or irregular resulting in AUB. There you have it.

A D&C (Dilatation of the cervix and Curettage of the uterine cavity—not “dusting and cleaning”) removes only the surface or functional layer of the endometrium. The lower (or basalis) layer of the endometrium remains intact. This is the layer that regenerates the endometrial lining each month, which will occur the next cycle after the D&C, resulting in the return of whatever bleeding pattern was occurring prior to the D&C. That is why a D&C is no longer used for treatment—only diagnosis. The EA destroys the lower endometrial lining, preventing the re-growth of endometrium in future cycles. This will typically decrease the length and flow to a period, and in many cases, will stop bleeding altogether. Endometrial ablation, however, is not a fix for every menstrual issue, such as in cases of endometriosis or large fibroid tumors, and is definitely not an option with cancer or precancerous changes.

Three basic approaches are used to perform an ablation. Heating techniques essentially burn the lining into oblivion with varying rates of success. These include the classic “rollerball” or “rollerbar”, now antiquated, whereby a electrified metal ball or bar was rolled across the uterine cavity burning the lining.

This was done through a hysteroscope and had to be performed under general anesthesia in the operating room due to the amount of discomfort it caused. Success rates were okay, but not great. Endometrial resection followed in the late ‘80’s, whereby the lining of the uterus was actually excised or cut out. This offered several advantages including a more consistent removal and destruction of the endometrium resulting in a higher success rate, and unlike any other technique, resulting in tissue which could be sent to the lab for pathologic examination. This technique has been my choice for the past 15 years of performing ablations. Its rate of slowing or stopping periods is second to

![Diagram of hysteroscope using resection loop to excise the endometrial lining in the technique of Endometrial Resection](image-url)
none. It is more difficult to perform, and hence not an approach used by most gynecologists (but my patients deserve the best). Plus, it is less expensive than the newer EA techniques which are being aggressively marketed. That brings us to our next discussion.

Contemporary approaches to EA include what is known as “global endometrial ablation” (GEA). These have been developed, each in the hope of allowing the ablation procedure to be performed in the office setting, with minimal pain and discomfort requiring smaller doses of pain medication and sedation. None of the methods utilizing a heat energy has been successfully incorporated in the office because of the discomfort they cause. They are easier to perform, but are still performed in the OR under general anesthesia because of this discomfort, resulting in increased costs, due in part to the disposable equipment necessary for the procedure, which adds a patient charge of $2,000-3000. Obviously, anesthesia and operating room expenses add even more to the overall costs. These are also considered “blind” procedures since the intrauterine cavity is not examined directly (i.e. looking at the inside of the uterus using a hysteroscope), and no tissue is obtained for pathology examination. Their success rate is also less than an endometrial resection which, again, is one of the reasons I do not perform or suggest these approaches.

GEA procedures include the Thermachoice® which uses a balloon filled with hot water, the Novasure® which consists of a electified wire mesh or net, Hydrotherm® Ablation System which circulates heated water in the uterine cavity, and Microwave Ablation which uses microwave energy (no surprise) to heat and destroy tissue. (and I don’t recommend jerry-rigging your own contraption at home). All utilize heat to destroy the uterine lining, which causes more pain during and after the procedure. Heat and electricity are also more prone to cause injury to surrounding tissues and organs.

One of the newest techniques for GEA is the HerOption® Cryotherapy Ablation system. The approach is that of freezing instead of heat to ablate the uterine lining. Freezing tissue to destroy lesions has been utilized for years in the area of Dermatology, and now is being used to treat tumors in other areas of the body including liver and prostate tumors. Its use in the EA arena has established its effectiveness and safety over the past 5+ years. Cryoablation offers several advantages including a high degree of patient satisfaction with excellent rates of lightening or even stopping periods and fewer risks when compared to heat techniques. And because it produces less pain and discomfort, it finally achieves the advantage to where it can be performed in an office setting.

The HerOption® system consists of a thin probe (measuring 5.5 mm or just under 1/4 inch) which is usually easily passed through the cervical opening into
the uterine cavity with minimal discomfort. And abdominal ultrasound is used to follow the insertion of the probe to insure proper placement. The probe is attached to a generator which creates the freeze at the tip of the probe and monitors the temperature of the surrounding tissues. The ultrasound is also used to follow the degree and depth of freezing, assuring adequate treatment of the endometrial tissues. As the tissues freeze, the area goes numb, thereby avoiding the cramping and pain seen with other techniques.

The ability to perform any procedure in the office offers several other advantages. First, is the simplicity of coming straight to the office (no registration, no pre-op procedures and no 20 people asking about your drug allergies). Second, recovery is minimal following the procedure, with many women returning immediately to work (or at least the mall) right from the office. Best of all is the cost: in-office procedures are usually billed at a different rate with a smaller copay typically required (one office copay vs. an outpatient copay). Insurance companies prefer in-office procedures because of the cost savings as compared to the additional expenses typically incurred when they are performed at the hospital. (An insurance company using common sense—hard to believe, I know).

Who is not a candidate for EA? If you may want a pregnancy in the future, then you should not have an EA. Pregnancies have occurred following all types of EA, and consistently have bad outcomes. EA is not birth control and should not be relied on to prevent pregnancy. Other forms of birth control will still be necessary. If there is a malignant or premalignant change to the endometrium, then EA is contraindicated. Obviously, if you are pregnant, EA cannot be performed. Also, if there is infection, EA should not be done.

That said, certain tests need to be performed prior to ablation. Pregnancy must be ruled-out. An ultrasound is performed to assess uterine size and anatomy, as well as to evaluate the uterine lining for polyps and fibroid tumors. Additionally, with any GEA, endometrial tissue must be tested to make sure that there is not an endometrial cancer or precancerous change that could otherwise be missed. (Endometrial Resection removes tissue which is sent to the lab for testing bypassing this risk).

**What to expect after Endometrial Ablation**

Typically, there is minimal pain following an ablation procedure such as cryoablation. Cramping is usually controlled by over the counter medications such as ibuprofen or Aleve®. There will be a watery discharge for 10-14 days. Spotting or light bleeding for the next few cycles is also typical.
Bleeding rates following EA vary by procedure. Endometrial Resection and cryoablation offer the best success rates, mostly due to their ability to customize each treatment to each uterus regardless of size, fibroids, etc. For the most part, 60-70% of patients will experience no bleeding, 20-30% will have marked improvement in their periods with only light spotting or flow. Five to ten percent of these ablations will fail with the eventual return of heavy bleeding, usually because of the presence of other pathology such as adenomyosis, a condition not usually treatable by ablation procedures. Overall, 90-95% of women express great satisfaction with their ablation procedure.

Interestingly, other menstrual problems will frequently improve following ablation. There is no set percentage or guarantee the PMS symptoms will get better, but usually they will decrease by some degree. Moodiness, bloating, headaches, bowel problems and cramping are just some examples of PMS symptoms that lessen. This is because the endometrium produces chemicals called prostaglandins during the latter part of the menstrual cycle which are responsible for various untoward symptoms before and during the period. Destroy the endometrium and there is less tissue to produce prostaglandins.

**In Conclusion**

No longer are women limited to major surgical procedures to control difficult menstrual problems. Improved technology and treatments have brought more aggressive treatment options within the reach of more women. Not only can a patient choose a treatment for problems that are less severe (i.e. you don’t have to wait until you are anemic and staying home for a week before you can have a hysterectomy), but the process is safer, easier, and more affordable. Taking days or weeks for recovery can be a thing of the past. And keeping your “parts” probably has its advantages. Although Endometrial Ablation is not a panacea and may not be a “fix-all” for every female problem, it is a relatively simple solution for many. We are happy to answer any questions regarding menstrual issues, diagnostic procedures and treatment options including medical therapy, endometrial ablative procedures and hysterectomy. Just let us know.

Sincerely,

Jeffrey M. Blake, M.D., F.A.C.O.G.