

## Male Fertility: An Explanation

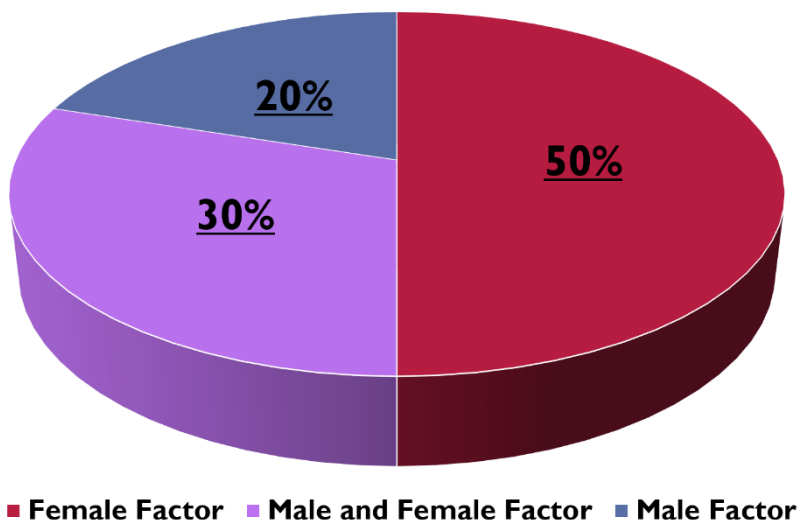
This handout explains the basics of male fertility including key terms, how conception is supposed to work, how a man's fertility potential is tested, and some key steps that men can take to improve their fertility status even before their first clinic appointment. **For an electronic copy of this brochure and more information on Male Fertility, we encourage you to visit our website at [www.MensHealthIN.com/services/male-infertility](http://www.MensHealthIN.com/services/male-infertility).** There we have several educational resources including video content and other handouts. If you ever have any questions or concerns, please feel free to call the Men's Health Center at (317) 564-5104.

### How common is male infertility?

It's estimated the approximately 15% of couples will have trouble achieving pregnancy at some point in their relationship. This difficulty could be with their first attempt at pregnancy (known as primary infertility) or with a later attempt (known as secondary infertility).

Out of couples who are having troubles conceiving, 20% will have a male factor with no female fertility issues, 50% will have a female factor with no male fertility issues, and 30% will have both a male factor and a female factor. That's why it's important for both partners to be evaluated when there's concern about fertility. Statistically, 50% of couples struggling with infertility will have a contributing male factor.

### Causes of Infertility



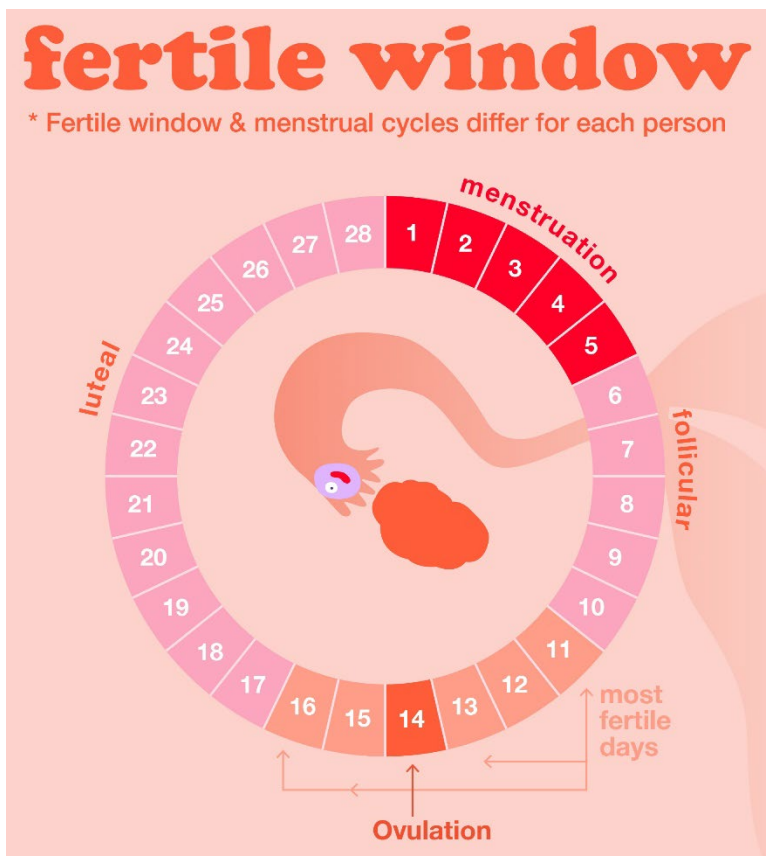
### When should a couple seek evaluation?

Infertility is traditionally defined as the inability to achieve pregnancy after 1 year of timed, unprotected intercourse. However, in the modern era with couples waiting longer to start their families, seeking an evaluation as early as 6 months is very reasonable. Couples with special circumstances (like a history of prior vasectomy, cancer treatment, or previous fertility challenges) may need to seek out care even sooner.

## How is conception (aka getting pregnant) supposed to work?

The process of achieving pregnancy, also known as conception, starts when a single sperm meets an egg in the female partner's fallopian tubes to create an embryo. This embryo then travels from the fallopian tubes to the uterus, where it implants into the lining of the uterus and becomes a pregnancy.

Timing is immensely important when trying to achieve pregnancy. Each month a woman will release a single egg as part of her monthly cycle. The release of this egg is known as ovulation. If we call the first day of woman's monthly period Day 1, then most women will ovulate on Day 14. If the freshly released egg is not fertilized within a few days, her body will sense that and trigger another period. This starts the whole process over.



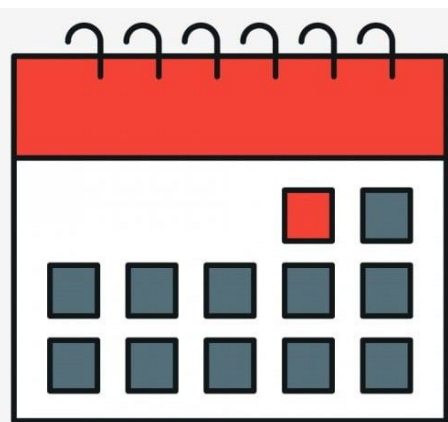
Each month a woman will have a 5-6 day 'fertile window' during which she is most likely to conceive. Because sperm can survive for about 3-4 days in the female reproductive tract, this means that the fertile window for most women will start 3 days prior to ovulation, include the day of, and then persist for about 1-2 days thereafter.

For couples trying to achieve pregnancy, we recommend sexual intercourse once daily during this fertile window.

## What's the best way to track cycles?

Since timing is so important for conception, it's essential that couples know how to track the female partner's monthly cycles. Some of the methods that we prefer include ovulation predictor kits, the calendar method and basal body temperature. Each of these methods can be effective on their own, but they become even more accurate when combined.

**Calendar Method:** Since many women have regular periods that last a similar amount of time, it's often possible to predict a couple's fertile window simply by tracking days on the calendar. Although most couples have probably heard of a system known as the Rhythm Method, our office prefers a more modern approach known as the Standard Days method. This method works best for couples with regular cycles lasting between 26 and 32 days.



- To use the Standard Days method, a couple should count the days in the female partner's cycle with the first day of her period being Day 1.
- On days 1-7, a couple is generally not fertile and the female partner will experience menstrual bleeding.
- On days 8-19, fertility is possible but is most likely to peak around the 5-6 day 'fertile window' centering on day 14 as described earlier.
- On day 20 though the end of the cycle, a couple is highly unlikely to be fertile.

The benefit of the calendar method is that it is free and easy for most couples to start with. The drawback is that it is relatively imprecise and is unable to account for month-to-month variations on its own.

**Ovulation predictor kits:** Ovulation predictor kits (OPKs) are at-home tests that analyze the female partner's urine for the presence of a hormone called luteinizing hormone (LH). A woman's body releases a surge of LH into the bloodstream which is then passed into the urine approximately 12-36 hours prior to ovulation. Every ovulation kit comes with its own unique instructions, but many instruct women to collect their urine specimens first thing in the morning. The benefit of OPKs is that they are relatively easy to use. The drawback is that they only turn positive 36 hours prior to ovulation at the earliest, which means that couples who rely on them exclusively may be missing out on 2-3 days of their monthly 'fertile window.' They also tend not to work very well for women with polycystic ovarian syndrome (PCOS) as they can experience several LH surges a month. As a result, OPKs work best when combined with other cycle tracking methods like the calendar method.

*Tip: Although most people are familiar with digital OPKs like the brand 'Clearblue', these tend to be quite expensive over time. Traditional test strips like the brand 'Pregmate' are equally accurate and much more affordable.*



**Basal Body Temperature:** Checking a female partner's basal body temperature is another method to help predict ovulation. Basal body temperature is defined as an individual's temperature when they are fully at rest. A female partner's basal body temperature may increase slightly, usually by about  $\frac{1}{2}$  a degree Fahrenheit (or 0.3 degrees Celsius), when ovulation occurs. Basal body temperature can be used to track ovulation as follows:

- The female partner should check her temperature every morning before getting out of bed using an oral digital thermometer.
- These temperature readings should be tracked over time and compared. This can be done on paper, electronically, or using a number of fertility tracking apps.
- Basal body temperature may by  $\frac{1}{2}$  a degree Fahrenheit (or 0.3 degrees Celsius) when ovulation occurs.
- Because the fertile window can start 3 days prior to ovulation, this date of temperature increase can be charted on a calendar and used to predict future ovulation and timed intercourse.



The benefit of basal body temperature is that it doesn't require special preparation beyond the purchase of a digital thermometer and it can be easy to track for most couples. The drawback is that it can be thrown off by multiple factors including changes in sleep, stress, illness, shift work, certain medications and even alcohol consumption. Consequently, tracking basal body temperature is most useful when combined with both the calendar method and the use of OPKs as mentioned above.

### What are the chances of getting pregnant each month?

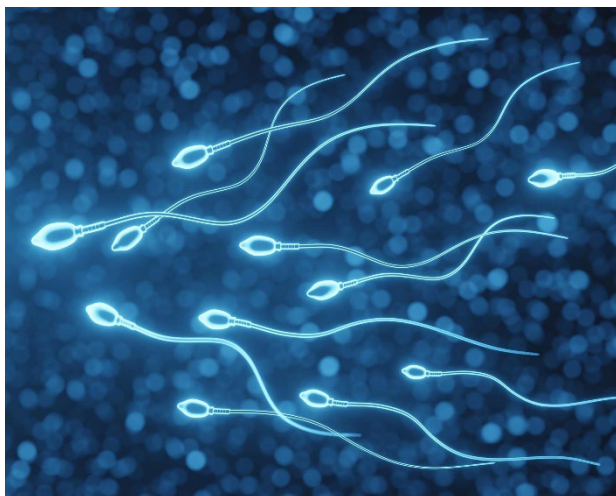
If a couple with 'normal' fertility is tracking their cycles using the methods above and having intercourse reliably during their fertile window, they will have about a 20-25% chance of achieving pregnancy each month. When that math is played out over several months, this means that couples with 'normal' fertility will have a 74-83% chance of pregnancy after 6 months and a 93-97% chance after 12 months.

It should be noted that these numbers mean that a small percentage of couples with 'normal' fertility may not be able achieve pregnancy even after several months. Still, if there's ever a concern about a couple's ability to conceive, both the male and female partner should be evaluated to assess their fertility potential.

## How is a man's fertility potential tested?

Fortunately, testing a man's fertility potential is relatively straightforward and non-invasive. There are 3 key tests that need to be performed:

- 1) Semen Analysis: Often referred to as a 'sperm count,' a semen analysis is an objective assessment of how many healthy, swimming sperm are in a man's ejaculate. The semen analysis is performed by examining a sample of a man's ejaculate under a microscope by a trained lab technician. Typically, the ejaculated specimen is collected via masturbation at the doctor's office, although it can be collected at home in special circumstances. Because the number of healthy, swimming sperm can vary significantly between collections, at least 2 separate semen analyses are needed to accurately assess a man's fertility. Also, it's important to note that (in order for the test to be accurate) **men MUST abstain from sex or masturbation for at least 3 days (but no more than 7) prior to collecting a semen analysis.**



- 2) Blood Draw: A basic lab draw is required to check certain hormone and blood levels. Hormones are chemical signals and the ones that we check are used by the brain to communicate with the testicles to signal proper sperm and testosterone production. If we already know that man doesn't produce any sperm (or very little), we may run some special genetic tests in addition to a basic hormone check.
- 3) History and Physical Exam: Along with the previously mentioned objective tests, it's important to hear a couple's story and see if there are any clues about what may be causing their current fertility struggle. Following this, a physical exam of the male partner is performed including a brief testicular exam. This is to rule out any anatomic problems that could affect fertility, such as varicoceles. To learn more about varicoceles, please see our related handout on that topic. It's worth noting that sometimes we will order an ultrasound of the testicles in addition to the physical exam in certain cases.

Although there are other more specialized tests that may be ordered in select circumstances, these are the essential first steps in evaluating almost every man's fertility potential.



## What can men do to maximize their fertility potential on their own?

If you're a man looking to optimize your fertility, there are several things you can do to improve things even before your first doctor's appointment! These including optimizing your own health, avoiding certain drugs, and potentially considering some very basic vitamins and supplements.

The data is very clear that obesity, poor diet, and a lack of exercise can have a profoundly negative effect on a man's sperm counts. So if you want to improve your fertility, focus on improving your lifestyle and maintaining a healthy weight.

Regarding diet, broadly speaking, processed carbohydrates and sugars should be avoided. We typically recommend that men try to 'eat around the edges' of the grocery store. This is where fresh fruits, meats and vegetables are typically located compared to the center aisles where processed foods are kept. If something comes in a box or can, you should think twice to make sure you're making a healthy choice. For men that want more specific dietary plan, most insurance companies cover nutrition counseling from registered dieticians. Contact your insurance company or the human resources department at your place of work to learn more about what benefits you may have available.

When it comes to exercise, its unclear what the 'optimal' regimen is for male fertility. We recommend that men do something to raise their heart rate for at least 30 minutes a day. Ideally, this should be combined with some sort of resistance training like weightlifting. Resistance training in particular has been shown to potentially increase both natural testosterone levels and sperm counts.

Things that should be avoided (or reduced to an absolute minimum) include recreational drugs like nicotine/tobacco, alcohol, and marijuana. Each of these substances have been shown to have a significant negative impact on male fertility and, as a result, no amount is considered 'safe'. Caffeine itself is more of a 'gray' area but while modest daily consumption is likely fine, energy drinks are a known exception and should be avoided.

**One category of substances that should be avoided at all costs include anabolic steroids and SARMs like testosterone.** Although naturally produced testosterone is essential for health and fertility, testosterone that is administered as a medication actually turns off sperm production. As a result, any man trying for pregnancy who is taking testosterone externally should stop immediately and seek a fertility treatment to help restart sperm production.

## Do you recommend any vitamins or supplements?

Vitamin supplementation is an area of male fertility with some controversy. Some studies suggest that modest vitamin supplementation may be beneficial, while others do not. As a result, we recommend a measured approach.

For men interested in vitamin supplementation, we recommend a regular men's daily multivitamin. An analysis of most daily men's multivitamins (both generic and branded) showed that most contain all the vitamins shown to potentially benefit male fertility with one notable exception.

The only other 'extra' vitamin that we recommend is Coenzyme Q10 also known as CoQ10. CoQ10 has been shown to independently increase sperm motility and although it isn't found in most daily men's multivitamins, it can easily be purchased from Amazon (<https://amzn.to/3EJJYVF>) or any local grocery store. We recommend a dose of 400 mg a day.

**It's important to know that it takes ~74 days for men to make new sperm.** So if you're a man starting new healthy habits to improve your fertility, stick with it!! Seeing results may take time but your fertility and overall health are worth it.

## Who should I call if I have any questions or concerns?

If you ever have any questions or concerns, please don't hesitate to call the Men's Health Center at (317) 564-5104. If you want to learn more about male fertility, please visit our website at [www.MensHealthIN.com/services/male-infertility](http://www.MensHealthIN.com/services/male-infertility). There we have several educational resources including video content and other handouts. If you still need to schedule your consultation, call our scheduling office at (877) 362-2778 to make your appointment today!