



# Understanding infertility

*Walgreens*





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# What you need to know about infertility

Dealing with infertility might feel disheartening, especially at first. But understanding your diagnosis can help you take control of your health. Many treatment options and lifestyle changes can help. You can improve your health and increase the chances of pregnancy.

Work with your doctor and your healthcare team. Together you can create a treatment plan that works best for you. Your doctor can adjust your treatment as your needs change.

This booklet will discuss:

- Infertility
- What to expect after diagnosis
- How to manage fertility treatments
- How to maintain your overall health and support fertility

Infertility is a disease characterized by the failure to establish a pregnancy after 12 months of regular, unprotected sexual intercourse or due to an impairment of a person's capacity to reproduce either as an individual or with his/her partner.<sup>1</sup>

## Infertility by the numbers – US statistics

**About 12%** of women aged 15 to 44 can't get pregnant or carry a baby to term.<sup>5</sup>

**Approximately 10 to 15%** of couples have trouble getting pregnant.<sup>2</sup>

Infertility is one of the most common diseases for people **aged 20-45**.<sup>2</sup>

Fertility interventions may be initiated in less than 12 months based on medical, sexual and reproductive history, age, physical findings and diagnostic testing.<sup>2,3</sup>



Roughly 30% of cases are due to female factors.<sup>4</sup> Another 30% are linked to men.<sup>2,4</sup> Another 30% of cases are a mix of factors that affect women and men together.<sup>2,4</sup> In about 10% of cases, the cause is not known.<sup>2,3</sup>

## Causes

Many things can affect fertility in women and men, including:

- Age
- Genes
- Hormone issues
- Lifestyle
- Physical problems

One-quarter of infertile couples have more than one of these factors.<sup>3</sup>



# Living with infertility

There is no single treatment for infertility. But there are many ways to improve your health and increase the chances of pregnancy. Work with your doctor to find the best approach.

The goals of treatment are to restore fertility and increase the chance of successful pregnancy. Treatment can include:

- Correcting hormone imbalances
- Treating or repairing physical issues
- Assisting the reproductive process

Most infertility cases — about 85 to 90% — are treated with conventional therapies. This includes medication or surgery.<sup>7</sup>

## Medications

Certain drugs are approved to help women with issues that might be preventing pregnancy.<sup>8</sup> Table 1 lists drugs commonly used to treat infertility. These are often prescribed with lifestyle changes and other treatments.

### Infertility in women

Ovulation problems are the most common fertility issue in women.<sup>4</sup> This includes problems producing or releasing eggs. These issues might be linked to<sup>2,3</sup>:

- Increasing age, which leaves fewer, lower-quality eggs in the ovaries
- Polycystic ovary syndrome (PCOS), thyroid disease and other hormone problems
- Being overweight or underweight

Blocked or damaged fallopian tubes are also common.<sup>3</sup> This can prevent sperm and egg from meeting. These problems might be linked to:

- Endometriosis, a condition where uterine tissue grows outside of the uterus
- Previous pelvic or abdominal surgery
- Some sexually transmitted infections

### Infertility in men

Producing no sperm or not enough healthy sperm are the most common fertility issues in men.<sup>4,6</sup> Problems with releasing sperm are also common.<sup>2</sup>

These issues might be linked to:

- Varicoceles, or enlarged veins in the scrotum
- Other medical conditions, like diabetes or cystic fibrosis

## Diagnosis

There is no single test to diagnose infertility. Your doctor likely used many tests and procedures, such as<sup>3</sup>:

- **Blood tests.** These check the levels of certain hormones. Some are needed to make healthy eggs and sperm. Others are needed to get and stay pregnant.
- **Ovulation tests.** These can see if and when the body is making and releasing eggs. Some are blood or urine tests. Others use ultrasound. Some might check cervical mucus or body temperature.
- **Ultrasound and other imaging.** These help a doctor check for problems with the uterus, fallopian tubes or ovaries.
- **Biopsy.** This uses a sample of uterine tissue to check for hormone levels needed for pregnancy.
- **Semen analysis.** This tests if sperm and sperm production are normal and healthy.

**Table 1. Drugs to treat infertility**

Type	Name	Purpose	Intake Method
Ovarian stimulation	Clomiphene citrate	Starts or improves ovulation	Oral
	Gonadotropins	Stimulates growth of follicles and eggs	Injection
Ovarian control	Gonadotropin-releasing hormone (GnRH agonist) GnRH antagonist	Used with ovarian stimulation drugs to prevent early ovulation	Injection
Ovulation	Human chorionic gonadotropin (hcG)	Helps final growth of eggs and triggers ovulation	Injection
Uterine support	Progesterone	Prepares the lining of the uterus for pregnancy	Injection, oral, topical or vaginal
Other	Antibiotics	Treats infections before fertility procedures	Oral
	Birth control	Controls the menstrual cycle	Oral
	Insulin sensitizers	Controls blood glucose, especially in women with PCOS	Oral
	Steroids	Reduces inflammatory response to in vitro fertilization	Oral



## Managing medications

In most cases, fertility drugs must be taken at certain times during the reproductive cycle. This means you must keep track of days, times and doses. You might need to do this for more than one medication. There are a few ways you can keep things straight:

- Label and organize drugs and supplies. This can make them easier to find. It can also help prevent a mix-up of medications.
- Make portable containers of drugs and supplies. These can help you stay on track when you are away from home.
- Mark days and doses on a calendar. Check them off after you take your medication.
- Set computer or phone alerts for each dose.
- Talk with your doctor about medication schedule changes if you will be traveling across time zones.

## Follow basic steps for drug safety:

- Follow manufacturer storage instructions.
- Do not reuse needles.
- Dispose of needles in a sharps container.
- Tell your doctor right away if you miss a dose or mix up medications.
- If it gets too hard to stay on track, ask your treatment team for other tips. You can work together to make things easier to manage.

## Managing side effects

Fertility drugs do have side effects.<sup>8,9</sup> Some can cause discomfort during treatment. Common side effects might include<sup>8,9</sup>:

- Mild bloating
- Breast tenderness
- Headaches
- Hot flashes
- Mood swings
- Nausea
- Soreness or irritation at injection sites

Some days, side effects might feel like too much to handle. Do not stop taking your medication. Call your doctor first. Ask about ways you might be able to minimize side effects during treatment, and you can work together to adjust treatment as needed.

## Serious side effects

Some fertility drugs, like hCG, can raise the chances of having more than one baby at a time. Others can make the ovaries too big. Some serious side effects need immediate attention.<sup>8,9</sup> Call your doctor right away if you have any of these:

- Blurred vision
- Visual spots and flashes
- Belly pain or severe or worsening bloating
- Nausea and vomiting
- Diarrhea
- Sudden weight gain

## Staying on track with treatment

Staying on track with treatment can help your chances of getting and staying pregnant. It is also good for your overall health. Take your medicine exactly as prescribed by your doctor — at the right times and the correct doses. Do not stop treatment on your own. Tell your doctor your concerns first.

Get approval from your doctor or pharmacist before you take other drugs or supplements. You can also work with your doctor to adjust your treatment over time, if needed.

## Medical procedures

Along with fertility drugs, certain procedures can help improve fertility or increase the chances of pregnancy. Surgery in both women and men can help correct physical problems that might be preventing pregnancy. Other procedures can help with certain steps in conception.

### Surgical procedures for women

Laparoscopy and hysteroscopy can help inspect and correct problems in the uterus, ovaries and fallopian tubes that affect female fertility.<sup>10</sup> A thin, lighted tube with a camera inside is passed through the cervix or through a small incision in the belly. This gives the doctor a direct view inside the pelvis. These procedures are less invasive than major abdominal surgery. They also have a shorter recovery time.<sup>11</sup>

Hysteroscopy can be used to find and remove scar tissue, fibroids or polyps in women. It can also be used to correct malformations in the uterus that can make it hard to get pregnant or stay pregnant.<sup>12</sup>

Laparoscopy can be used to remove pelvic scar tissue. It can also open blocked fallopian tubes or remove ovarian cysts. It is often used to treat endometriosis, which can affect the ovaries, ovarian reserve, fallopian tubes and implantation.

Endometriosis is found to be the sole cause of infertility in about 35% of infertile women.<sup>3</sup>

### Surgical procedures for men

Other procedures can help correct problems in the scrotum that affect male fertility<sup>13</sup>:

- Varicocele to correct swollen blood vessels in the scrotum
- Vasectomy reversal to rebuild passageways for sperm
- Removal of blockages from infection or injury

Some men might also have surgery to retrieve sperm for use in other fertility treatments, such as in vitro fertilization (IVF).

### Intrauterine insemination (IUI)

In IUI, sperm is separated from seminal fluid, then placed into the uterus via a catheter. This process can be accompanied by stimulation drugs that help with ovulation.<sup>14</sup>

### Assisted reproductive technologies

Assisted reproductive technologies (ART) can help with one or more steps in conception. Most forms of ART begin with stimulation drugs. This helps a woman produce enough eggs. This is followed by retrieval of eggs and/or sperm to be used in ART. Examples of ART are listed in Table 2.<sup>14,15</sup>



**Table 2. Examples of ART**

Procedure	Description
In vitro fertilization (IVF)	Eggs and sperm are incubated in a lab to produce an embryo that is placed into the uterus.
Intracytoplasmic sperm injection (ICSI)	A single sperm is injected into an egg for fertilization in a lab before being placed into the uterus.
Gamete intrafallopian transfer	Eggs and sperm are collected and placed into the fallopian tube for fertilization.
Zygote intrafallopian transfer	Eggs and sperm are incubated in a lab to produce an embryo that is placed into the fallopian tube.
Assisted hatching	An opening is made in an embryo's covering before being placed into the uterus.

### Third-party reproduction

Some people use donor eggs, sperm or embryos for IUI, IVF, ICSI and other forms of ART.<sup>14,15</sup> Donors complete extensive medical and genetic screening.<sup>15</sup> Donor options can be helpful for certain people, including:

- Those who have problems with their own eggs or sperm
- Those who have a disease that could be passed on to a biological child
- Same sex, trans-gender couples or prospective single parents

Other forms of third-party reproduction involve a carrier or surrogate. This is a woman who carries a pregnancy for another person or couple. There are two types of surrogacy:

- Gestational carrier. Eggs from the intended mother are fertilized in a lab by sperm from the intended father. The resulting embryo is then placed into a gestational carrier's uterus.
- Traditional surrogacy. A female surrogate is inseminated with sperm from the intended father or a donor.

Third-party reproduction can pose unique questions and challenges.<sup>17</sup> Candidates often work with fertility counselors and legal advisors to plan their treatment.

## Fertility preservation

Cryopreservation freezes eggs, embryos, ovarian tissue or sperm for future use.<sup>15</sup> This is used in IVF to save extra embryos.<sup>15</sup> It is also used for those who are facing treatment that could harm their fertility. This might include chemotherapy for cancer. It might also be used for those who are diagnosed with infertility but are not yet ready to begin fertility treatment. For women who want to try to protect against future infertility due to reproductive aging or other causes, advance oocyte cryopreservation (OC) is an option. This is now referred to as "planned oocyte cryopreservation" or "planned OC".<sup>16</sup>

# Lifestyle changes

Along with prescribed treatment, certain lifestyle changes might help your fertility. They can also support your treatment and overall health.

## Eating well

There is not one "fertility food." Studies say it is more important to focus on good nutrition and a healthful, balanced diet.<sup>18,19</sup> This might include:

- Good fats from nuts, seeds and fish
- Protein, especially from eggs, beans, nuts, lean meats and fish
- Some full-fat dairy, like whole milk and whole-milk yogurt

- Whole fruits and vegetables
- Whole grains, like oats and brown rice

Eating many types of foods gives your body crucial vitamins and minerals. And choosing organic foods when possible can help limit your contact with chemicals that might affect fertility.<sup>20</sup> Your doctor might also suggest taking a prenatal multivitamin.

## Folic acid

Folic acid is a form of folate. This is a B vitamin. It protects against serious birth defects. Women trying to get pregnant should get 400 to 800 micrograms of folic acid each day.<sup>21</sup> Some women might need a prescription for a higher dose. Ask your doctor what is right for you.

Daily folic acid can come from a vitamin. It can also come from foods that have folate.<sup>21</sup> Some foods are naturally high in folate, including:

- Beans
- Dark green, leafy vegetables
- Nuts
- Oranges and orange juice
- Poultry and meat
- Whole grains





Certain dietary choices can lower fertility in both women and men.<sup>20,22</sup> There are a few things you should limit or avoid, including:

- **Alcohol.** It is best to avoid having more than two alcoholic drinks per day.<sup>21</sup> This can lower IVF success rates.<sup>20</sup>
- **Caffeine.** This includes coffee, tea, colas, chocolate and other food and drinks. Large amounts of caffeine, equal to more than five cups of coffee a day, can decrease fertility.<sup>22</sup>
- **Seafood high in mercury.** Albacore tuna and swordfish have some of the highest levels.<sup>20,22</sup> Choose other types of fish as your source of important omega 3 fatty acids.

Talk with your doctor about what is best for you. Those with certain health issues might need to avoid other things. For example, those with PCOS might need a diet that keeps blood glucose levels under control.<sup>23</sup> If you want more help with nutrition, ask your doctor for a referral. You might find help from a dietitian or nutritionist who specializes in fertility care.

## Avoid toxins

Research suggests that toxins might affect fertility in both women and men.<sup>20</sup> These chemicals can change hormone levels needed to get pregnant. And in those who do get pregnant, toxins can affect an unborn child. Limiting your exposure to these chemicals is vital to your fertility and overall health.

### Smoking

Smoking and secondhand smoke are linked to a host of health problems. This includes infertility. Tobacco affects sperm production and ovarian reserve.<sup>24</sup> It can raise the risk for miscarriage and birth defects.<sup>24</sup> It also negatively affects success rates for IVF.<sup>20,24</sup> Marijuana can block reproductive hormones in women and men.<sup>20</sup>

Many of these problems can be reversed.<sup>20</sup> If you smoke, talk with your doctor about quitting. Together, you can make a plan and look for the right support. This might include<sup>25</sup>:

- Counseling or support groups
- Programs in person, online or by text message
- Resources from the National Institutes of Health at [smokefree.gov](http://smokefree.gov) or 800-QUIT-NOW (784-8669)

### Other toxins

Chemicals in many everyday items might also affect fertility.<sup>20</sup> These include:

- Cleaning products
- Makeup, soaps and shampoos
- Plastics
- Pesticides

You can't avoid all toxins. But you can limit your exposure. Try small changes:

- Avoid plastic, especially for heating food
- Buy nontoxic cleaning and personal care products
- Filter your tap water
- Switch to "green" dry cleaning
- Use nontoxic lawn and garden treatments



## Staying active

Regular, moderate physical activity can help improve fertility in women and men.<sup>26</sup> Staying active can help you reach a healthy weight. It can also help you curb stress. Both things can improve overall health and fertility.

But, exercise that is too frequent or too intense can have a negative effect.<sup>26</sup> Some types of treatment and certain phases of fertility treatment might require avoiding strenuous activity. Ask your doctor what exercise is right for you during treatment.

## A word on weight

Weighing too little or too much can affect fertility.<sup>2,7,28</sup> Body mass index (BMI) is a ratio of your weight to your height.

### BMI<sup>27</sup>

**Below 18.5** = Underweight

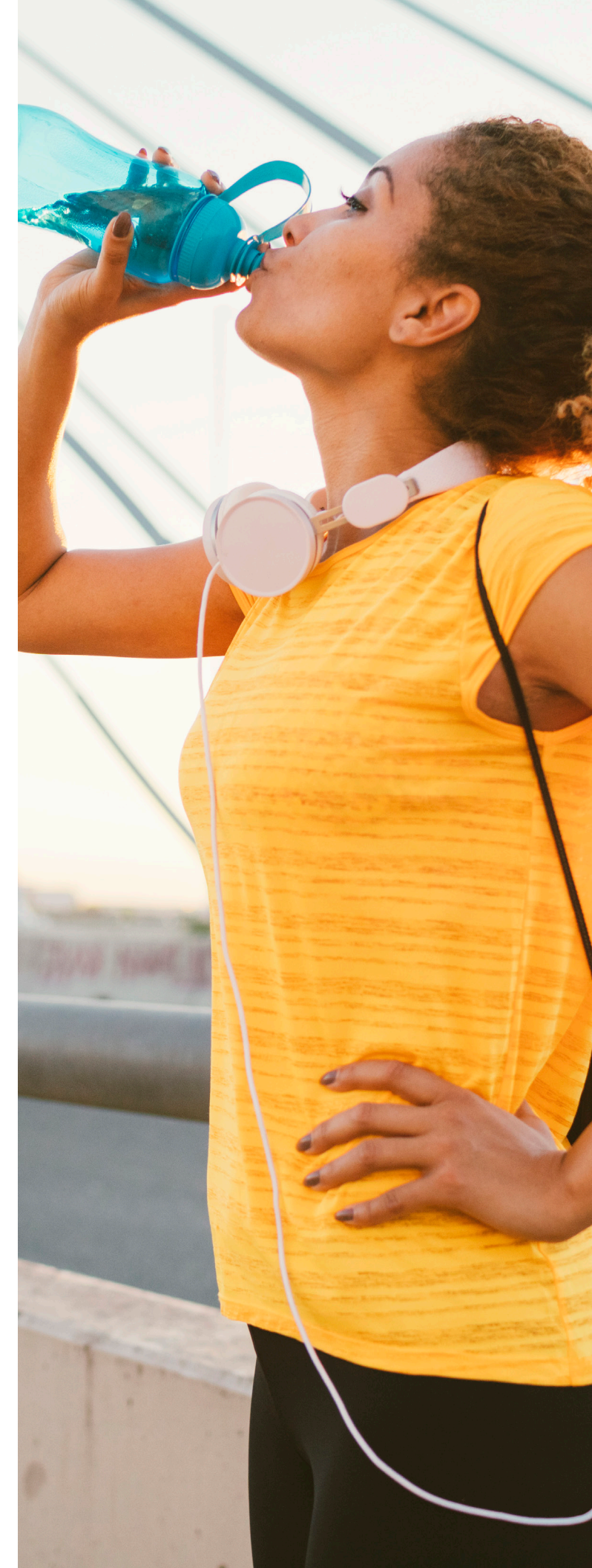
**18.5 - 24.9** = Normal weight

**25 - 29.9** = Overweight

**30 or higher** = Obese

A BMI that is too low or too high can cause irregular menstrual cycles. This affects ovulation.<sup>28</sup> A BMI above 30 might lower a woman's chances of success with IVF.<sup>28</sup> It can also affect sperm production and movement.

Reaching a healthy weight can reverse these effects.<sup>20</sup> Along with healthful eating, physical activity can help you reach and keep a healthy weight. Talk with your doctor about what is right for you during treatment.







## Rest

Treatment can be hard on your body. Rest is important. Research suggests a lack of sleep can negatively affect reproductive hormones.<sup>29</sup> But enough rest can help energy levels and the immune system. It can also help with recovery after surgery or other procedures.

Don't feel bad about taking it easy when you need to. Find small ways to rest and recover.

- **Ask for help.** It's OK to rely on others from time to time. Family, friends or even a service can lend a hand with errands or chores when you need it.
- **Don't do too much.** Choose what's most important to you. Cut back on other commitments when you can.
- **Schedule time off if possible.** Give yourself time to rest, especially after tough procedures. Take that time to truly rest.
- **Sleep well.** Current recommendations encourage about eight of hours of sleep each night.<sup>30</sup>

You can try certain methods to prepare for rest and sleep:<sup>31</sup>

- **Deep breathing.** Inhale slowly and fill your belly with air. Use your belly to squeeze the air out as you exhale slowly.
- **Imagery.** Picture something that makes you feel happy or safe.
- **Meditation.** Sit quietly and focus on a word, phrase or your breathing.
- **Progressive muscle relaxation.** Tighten, then relax your muscles slowly, moving from your head to your toes.
- **Unplug.** Turn off electronics at least an hour before bedtime.<sup>32</sup> Keep screens and other sources of light out of your bedroom for sound sleep.

## Emotional health

Managing your treatment while dealing with daily life can be stressful. And going through the emotional ups and downs of the process can be draining. It is important to find healthy ways to cope.

### Dealing with emotional challenges

You might feel overwhelmed, depressed or anxious. Or, connections with your partner and others might feel strained. These feelings are normal. But they aren't always easy to manage. And medication side effects can sometimes make things feel worse.<sup>8</sup>

Professional counseling or therapy might help you sort through your emotions. Ask your doctor for a referral. Individual therapy or couple's counseling might help. Or, you might look for a fertility counselor.<sup>36</sup> This person is trained in both the medical and psychological aspects of fertility treatment. Some are part of fertility treatment teams. Others work in private practice. No matter who you see, counseling can be a helpful part of treatment.

### Managing stress

Research has shown that stress can affect how you make decisions and deal with challenges.<sup>33</sup> These things are vital during treatment. You can manage stress before it gets overwhelming.

- See the signs. People respond to stress in different ways.<sup>34</sup> Some feel anxious or grouchy. Others have headaches or trouble sleeping. Knowing how you react to stress can help you take control.
- Set priorities. Don't let treatment be your only focus. Make time for things you enjoy. You might try the "20-minute rule" to limit how long you talk about infertility for a given evening.<sup>35</sup>
- Tend to your body and mind. Exercise can curb stress and help you feel better.<sup>34</sup> Getting enough rest can, too. Other things, like acupuncture, journaling or massage might also help.<sup>33,34</sup> Ask your doctor what activities are compatible with your treatment.

If you are having trouble dealing with stress, ask for help. Your doctor can suggest healthy ways to cope.





## Finding support networks

Seeing a counselor can be helpful. And family and friends can be good sources of support. But it can also help to talk with others who know just what you are going through. Joining an infertility support group might help you:<sup>36,38</sup>

- Feel less alone
- Express negative feelings
- Learn positive ways to cope
- Feel better about yourself

Some groups meet in person. Other groups share experiences online. Your doctor might suggest a local group that is right for you.



## Depression

If you have been feeling some or all of the following for more than two weeks, it is important to seek help.<sup>36,37</sup>

Signs of despression:

- Aches and pains that don't go away with treatment
- Being tired or lacking energy
- Eating too much or too little
- Feeling hopeless or negative
- Feeling restless or irritable
- Feeling sad, empty or anxious most of the time
- Feeling worthless, helpless or guilty
- Having a hard time concentrating or making decisions
- Having panic attacks
- Losing interest or pleasure in activities that you used to enjoy
- Losing interest in relationships
- Sleeping too much or too little
- Thinking about death or suicide
- Using or thinking about using over-the-counter remedies, drugs or alcohol to cope

If you have thoughts of harming yourself or others, call 911 or your local emergency services number. You can also call a doctor, mental health professional, crisis center or hotline for help.



## Ongoing care

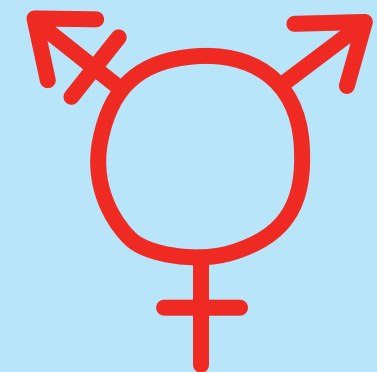
Not every fertility treatment works for every person. Sometimes, it can take time to find what is right for you. Talk to your care team about how things are going. Your doctor can monitor any medication side effects and adjust your treatment as needed. Continue to discuss all your options to build a treatment plan that is right for you.







We've provided this information because we believe the more you know about infertility, the better prepared you will be to monitor your health and manage your treatment. In addition, the Walgreens specialty pharmacy care team is here to provide you with dependable, personalized support to help you manage medication side effects and stay on track with your prescribed therapy. We look forward to being a member of your healthcare team and helping you get the best results from your treatment.





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