

Egg Freezing





Support for your growing family

At Northwestern Medicine, we are committed to health and wellness for you and your growing family. There are different reasons why your physician may recommend freezing your eggs. This booklet will answer many questions about this process. If you have further questions or concerns, please give us a call.

Understanding egg freezing

A woman has a group of *antral follicles* that she uses or loses every month. Eggs grow inside these follicles. But not every follicle has an egg. During the natural menstrual cycle, the brain releases hormones that let only 1 follicle in a group of follicles become the dominant follicle. During ovulation, each dominant follicle releases a single egg. Ovulation is typically monthly. Your body will lose the other follicles through a process known as atresia.

In an egg-freezing cycle, you will get combinations of reproductive hormones in higher doses than what your body naturally produces. This allows for many antral follicles to grow and develop during a single month. This way we can retrieve and freeze multiple eggs.

These eggs would otherwise have been lost. Doing a single cycle, or even multiple cycles, of egg freezing does not decrease overall fertility, make you lose your egg supply faster, or cause you to go through menopause earlier.

Ovarian reserve testing

There is no test to determine whether a woman is fertile or infertile. The testing that will be performed as part of your initial evaluation is known as *ovarian reserve screening*. These tests measure the number of eggs that the physician can retrieve in a single month and the overall egg supply within the ovary. Ovarian reserve testing can estimate the number of eggs in the ovary but cannot predict infertility. It also cannot predict the time it would take to achieve pregnancy.

It is common to do these 5 tests together:

- 1 **Antral follicle count (AFC).** This test measures the number of resting follicles in the ovary. Your care team will do this test with a transvaginal ultrasound. This is one of the most important tools to predict how many eggs they can retrieve in a single month with the use of fertility drugs.
- 2 **Anti-Müllerian hormone (AMH) blood test.** Cells that surround each egg in the ovarian follicles produce this hormone. A blood test will determine your AMH level. A high AMH means there is a high egg supply. A low AMH means there is a low egg supply. This is one of the most sensitive predictors of the overall egg supply within the ovary. AMH testing can indicate the size of the remaining pool of eggs in the ovary. The results of this test can help you and your care team decide whether and when to freeze eggs.

However, a **low AMH in someone who has never tried to conceive does not indicate infertility.** Table 1 shows the typical values for AMH according to age in the United States. This table can help determine who may have a low egg supply, but this information should be used with great caution. There are no long-term data available yet to fully understand the implications of low AMH in young women without infertility.

- 3 **Follicle stimulating hormone (FSH) test.** Your brain releases this hormone to stimulate the ovary to grow a dominant follicle each month. A blood test will determine your FSH level. It is typically taken

on day 3 of your menstrual cycle. A high FSH level in the beginning of the menstrual cycle is a sign of low egg supply.

- 4 **Estradiol (E2) test.** This is a hormone that suppresses FSH during the menstrual cycle. It is necessary to check your E2 level when we check your FSH to make sure that FSH is not falsely low due to suppression.
- 5 **Infectious disease test.** It is a requirement for patients undergoing fertility treatment to do this test. You will need to have your blood work done, and provide urine samples.

Infertility is a clinical diagnosis. This diagnosis is only for women who have tried to conceive for 1 year without success before the age of 35, or 6 months after turning 35.

Age	Median AMH	Age	Median AMH
25	3.2	36	1.2
28	2.8	37	1.1
30	2.4	38	0.9
31	2.2	39	0.8
32	1.8	40	0.7
33	1.7	41	0.6
34	1.6	42	0.5
35	1.3	43	0.4

Table 1. Adopted from Siefer, D F&S 2011



Overview of the egg-freezing process

Your physician will make your individual treatment plan. It will be based on your age, AMH level, AFC and FSH level. The egg-freezing process starts with a stimulation cycle. It includes 4 parts:

- 1 The first step is **pretreatment**. This can involve your natural cycle, birth control pills or estrogen priming. This step helps all available follicles that will be recruited to grow at the same time.
- 2 You will receive **stimulation drugs** (gonadotropins). They are hormones that encourage the follicles to grow and the eggs within them to mature. Common drug names are Gonal-F, Follistim and Menopur.
- 3 Your care team will give you an **ovulation blocker**. It prevents your body from releasing eggs from the ovaries before the day of your egg retrieval. Common drug names are Ganirelix and Cetrotide.
- 4 You will get a **trigger shot**. This is a hormone you will receive at the end of stimulation. It encourages eggs to mature. You will have an egg retrieval 36 to 38 hours after receiving the trigger shot. This will happen before ovulation. Ovulation is when your body releases eggs from the ovaries. Common drug names are Ovidrel, Novarel or Lupron.



Understanding ovarian stimulation

Before the stimulation phase, you will come in for a baseline ultrasound and blood work. This is to make sure that your ovaries are ready to start the process.

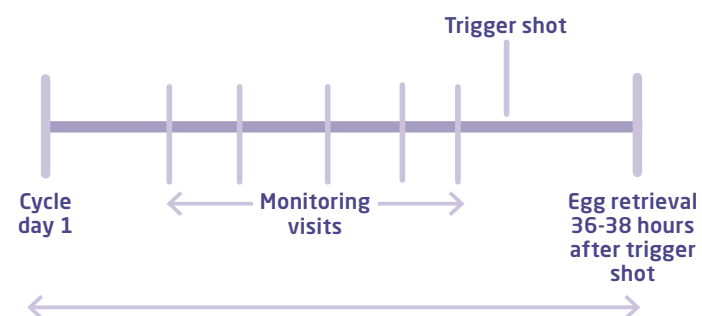
During the stimulation phase, you will inject yourself with gonadotropins in the thigh or abdomen. The needles are short and small. We will teach you how to do this safely and easily. You will inject yourself every day. This will encourage your ovaries to allow for multiple follicles to grow and develop.

You will return to the clinic on the 4th day of stimulation medications. The stimulation phase typically lasts 8 to 13 days. Most women have between 5 and 7 monitoring visits over a stimulation cycle.

During these monitoring visits, you will get a transvaginal ultrasound and blood tests. These tests are designed to track the progress of your cycle. Your estrogen level and size of your follicles will help the physician decide your appropriate medication dose and timeline. Always keep track of how much medication you have at home. You will

likely need to order refills during your stimulation cycle, especially if your dose is increased. A nurse will relay the physician's decisions about your cycle in a message in NM MyChart or during a phone call.

Your physician will make the decision to trigger. This is based on the size of your follicles and estrogen levels. You will get a call from our nursing staff on the day you are supposed to take your trigger shot. The timing of the trigger shot is extremely important, as your retrieval happens 36 to 38 hours after trigger. If you accidentally take your trigger shot more than 30 minutes before or after your assigned time, please let us know the next day.



Frequently asked questions

How will I feel during the stimulation process?

You may feel bloated as your ovaries grow follicles from the stimulation medications. It is not unusual to gain 5 to 6 pounds. It should go away within 2 weeks after egg retrieval.

You may also feel more emotional. This is because of the hormone changes. Surround yourself with supportive friends and family during this time. If you are struggling with intense emotions, call your physician. We want to make sure that we take care of all of you – your body and your mind. This can be an intense process, and we have support available.

What activities should I avoid during stimulation?

You should avoid exercise to minimize the risk of ovarian torsion. Ovarian torsion is a surgical emergency that happens when the ovaries become twisted, reducing their blood supply. If you feel a sudden onset of excruciating pain that lasts for more than 15 minutes, call us or go to the nearest emergency department. If you have any pain or concerns at any time, please call 312.695.7269 to reach the physician on call.

Who will I see during monitoring visits?

Morning monitoring visits include a transvaginal ultrasound by ultrasound technicians and a blood draw by a phlebotomist. These visits are purely for information gathering. There are no decisions made during monitoring visits. We ask the ultrasound technicians to measure follicles. But they do not interpret these measurements because these decisions are based on the ultrasound and blood work. If you have questions, please contact your care team via NM MyChart or a phone call.

How are eggs retrieved?

One of our physicians will do your egg retrieval. It will take place in our downtown office. An anesthesiologist will put you under conscious sedation for the procedure. The procedure itself typically takes about 20 minutes,

but you will be in the procedure suite for about 2 ½ hours. You must have someone present with you to drive you home after the procedure.

When are eggs retrieved?

Your care plan will be based on your individual response to stimulation. Retrievals can happen any day of the week, and we do not try to schedule them for a particular day or physician. We will be ready for your retrieval when your ovaries are ready. This can be on a weekday, weekend or holiday. We do not manipulate your cycle to best fit our schedule.

We are dedicated to giving you the best chance at a successful cycle. To meet this need, we have a comprehensive call schedule among our physicians to ensure that we have a physician available every day of the year, including holidays. The on-call physician will perform your egg retrieval.

Who will communicate with me on a daily basis?

We do our best to have your primary nursing team communicate with you Monday through Friday. On weekends, the on-call nursing team will relay your results to you. Results may be available through NM MyChart or via telephone.

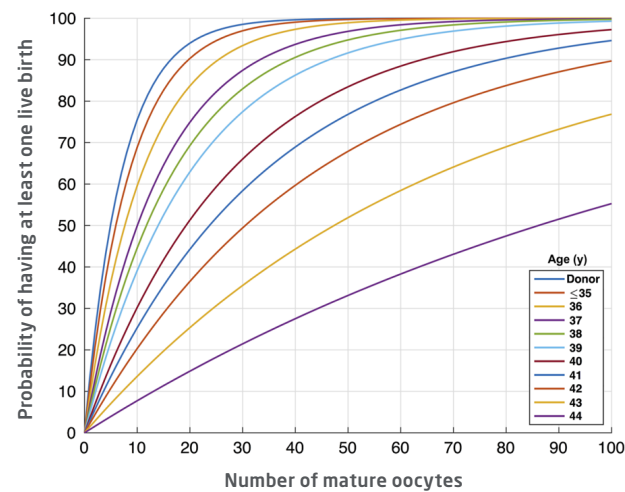
How many eggs should I expect to get?

The response to stimulation depends. Your AFC has been shown to be the best predictor of the number of eggs that you will produce, but this is just a loose guide. On average, younger patients with higher AMH levels produce more eggs. The average number of eggs produced by women of child-bearing age is 10.

There are 2 types of eggs your physician may retrieve: immature eggs (known as MI) and mature eggs (known as MII). We only freeze MII eggs because these have the best potential to achieve a live birth in the future.

What is the likelihood of having a baby with my frozen eggs?

The overall likelihood of achieving a live birth from your frozen eggs depends on the age at which you froze your eggs and the number of mature eggs retrieved.



From: Predicting the likelihood of live birth for elective oocyte cryopreservation: a counseling tool for physicians and patients. *Hum Reprod.* 2017;32(4):853-859. doi:10.1093/humrep/dex008.

What happens after egg retrieval?

We ship frozen eggs to a long-term storage facility where they are kept safe until you choose to use them.

It takes 2 weeks for your ovaries to physically recover after egg retrieval. It is common during these 2 weeks to still have some bloating and discomfort. We encourage you to schedule a follow-up visit with your physician 2 to 3 weeks after your egg-freezing cycle to discuss your results.

Depending on your age, your ultimate goals and your response to stimulation, we may talk about the option of doing another egg-freezing cycle. You and your physician can discuss your situation, your options and recommended next steps to maximize your reproductive potential.

Unintended responses to stimulation

Egg freezing is not always successful, and it can cause complications that you should understand. There is no set number of eggs that you need to have to continue with egg freezing. Your care is individualized. It will be based on your age, AFC, and levels of AMH and FSH.

- Sometimes, a cycle does not progress appropriately.** We closely monitor your cycle so that we make the best decisions regarding your care and so that we can talk about the cancellation of the cycle with you. Retrieval is a costly process, and if we have low confidence in success for this cycle, you may choose to cancel and put your money towards a second attempt at egg freezing.
- The ovary may not produce as many follicles as it is capable of in a given month.**
- We don't always get the exact number of eggs that we expect.**
- The number of eggs retrieved does not always correlate to the number of follicles seen on ultrasounds.** Some women, for reasons that are poorly understood, have empty follicles. The stimulation cycle may look good on ultrasound, but it is not until we actually do the retrieval and aspirate each follicle from the ovary that we see empty follicles. This is understandably upsetting if it happens to you.
- The response to stimulation may be too high.** When you produce too many follicles, you may develop ovarian hyperstimulation syndrome (OHSS). This is an exaggerated response to stimulation that may result in excess fluid in the abdomen 5 to 7 days after egg retrieval. On rare occasions, you may need to have this fluid drained from your abdomen if symptoms are severe (difficulty breathing or extreme discomfort). Occasionally, we can cancel cycles before egg retrieval to prevent OHSS.

It is extremely rare for other complications to happen, but as with any surgical procedure, there is a risk of bleeding or infection. If you do not feel well at any time or are concerned, please call your nursing team. If it's an emergency and outside of normal business hours, call the on-call physician.

To learn more about egg freezing or to schedule an appointment for a consultation, call Northwestern Medicine Center for Fertility and Reproductive Medicine at 312.695.7269, TTY for those who are deaf or hard of hearing: 711, or visit our website at fertility.nm.org.



Northwestern Medicine
Center for Fertility and Reproductive Medicine
259 East Erie Street, Suite 2400
Chicago, Illinois 60611
312.695.7269

600 Central Avenue, Suite 333
Highland Park, Illinois 60035
847.535.8700

2 Trans Am Plaza, Suite 400
Oakbrook Terrace, Illinois 60181
630.545.3766

TTY for all locations: 711

fertility.nm.org