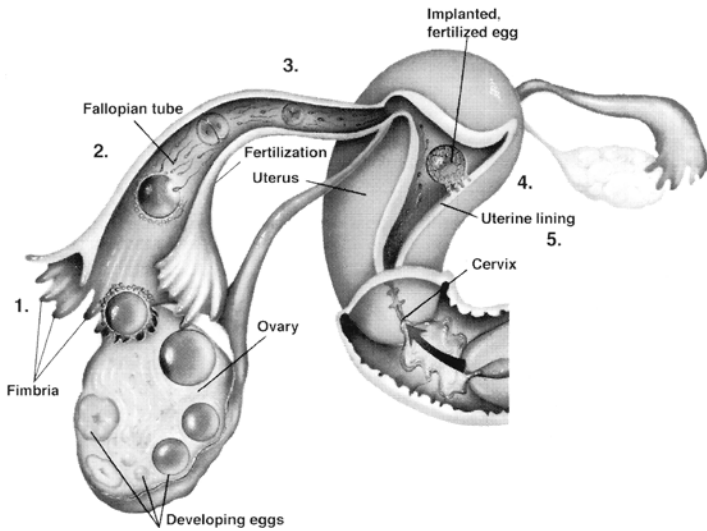


## SPONTANEOUS CONCEPTION

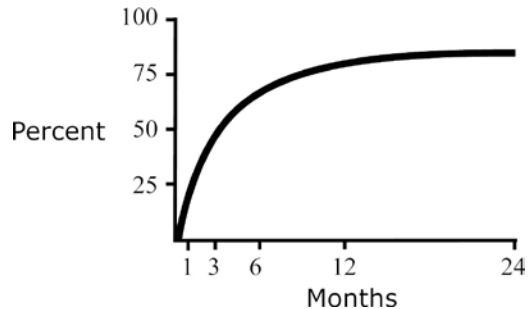


1. Fourteen days prior to the beginning of a new cycle, an ovarian follicle releases a microscopic egg.
2. Sperm, which can wait in the Fallopian tubes for several days, must fertilize the egg within 12 to 16 hours of ovulation.
3. The fertilized egg (embryo) moves through the Fallopian tube and starts to divide the day after fertilization. In two days, it has 4 cells, in three days, 8 cells and in six days it has over 100 cells.
4. Female hormones estrogen and progesterone, produced by the ovulating follicle, prepare the lining of the uterus for implantation.
5. Six to eight days after fertilization, the embryo hatches out and implants into the lining of the uterus and starts to produce the pregnancy hormone (hCG).

## INFERTILITY

Infertility is defined as no ongoing pregnancy after 6-12 months of sexual activity without contraception.

A. Speed of conception in the general population:



Monthly pregnancy probability:

1<sup>st</sup> month: 20-25%

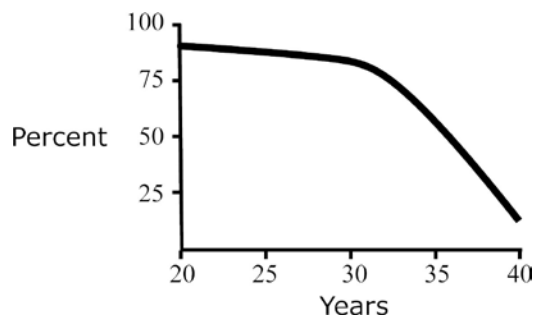
13<sup>th</sup> month: 1.5%

25<sup>th</sup> month: 0.1%

B. There are three groups of causes of infertility:

1. Male Factor: Sperm production and sperm fertilizing capacity
2. Ovulation: Egg production, egg quality and preparation of uterine lining for implantation
3. Passage: The joining of sperm and egg in the Fallopian tubes and transport of the fertilized egg

C. Female age and fertility:



Loss of female fertility:

The decrease in female fertility potential is due to the loss of high quality eggs. The receptivity of the uterus is not decreased. This age-related loss of fertility magnifies the impact of any other infertility factor(s) present.



AGING AND FEMALE FERTILITY POTENTIAL

Of the three primary factors playing a role in human conception (egg quality, sperm quality and the function of Fallopian tubes), egg quality is the most crucial in determining the probability of a live birth. It is the quality of eggs within the ovaries, rather than the receptivity of the uterus, that determines female fertility potential.

Female fertility begins to decline many years prior to menopause despite continued regular menstrual cycles. The probability of a live birth decreases 3-5% per year after the age of 30 and at an even faster rate after the age of 40. Unfortunately, as women age they also have a higher miscarriage rate.

The decreased probability of a pregnancy is due to the normal changes which occur in the woman's ovaries with aging. Most women have about 600,000 eggs in their ovaries at puberty. For each egg that matures and ovulates during a menstrual cycle, at least 500 to 1000 do not fully mature and are reabsorbed by the body.

As a woman ages, the remaining eggs in her ovaries also age, rendering them less capable of fertilization and of being able to develop into normal embryos. In addition, fertilization of these eggs is associated with a higher risk of genetic disorders. Fortunately, the vast majority of genetically abnormal pregnancies end very early, often resembling a normal menstrual period.

It is now possible to genetically test early embryos (PGD: Pre-implantation Genetic Diagnosis) as a part of In Vitro Fertilization treatment and minimize the likelihood of transferring genetically abnormal embryos into the uterus.

Risk of Chromosomal Abnormality in Newborns by Maternal Age

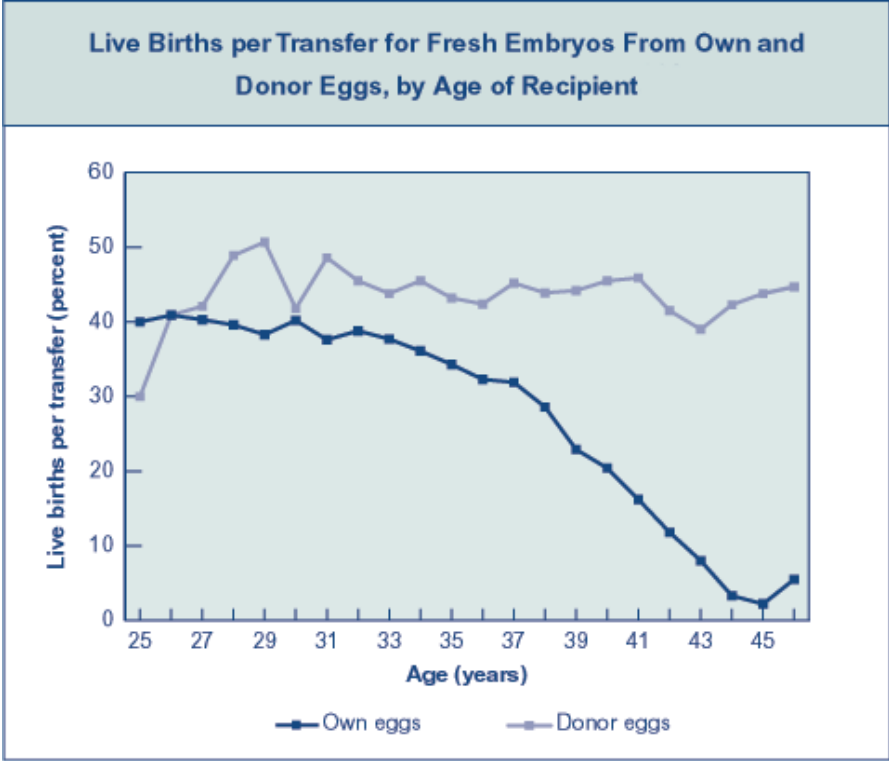
Maternal Age (years)	Risk of Chromosomal Abnormalities
20	1/526
25	1/476
30	1/385
35	1/192
40	1/66
41	1/53
42	1/42
43	1/33
44	1/26
45	1/21

Even with advanced infertility treatments, such as In Vitro Fertilization which is among the most powerful techniques to help infertile couples conceive, fertility decreases and the chance of miscarriage increases with advancing female age.

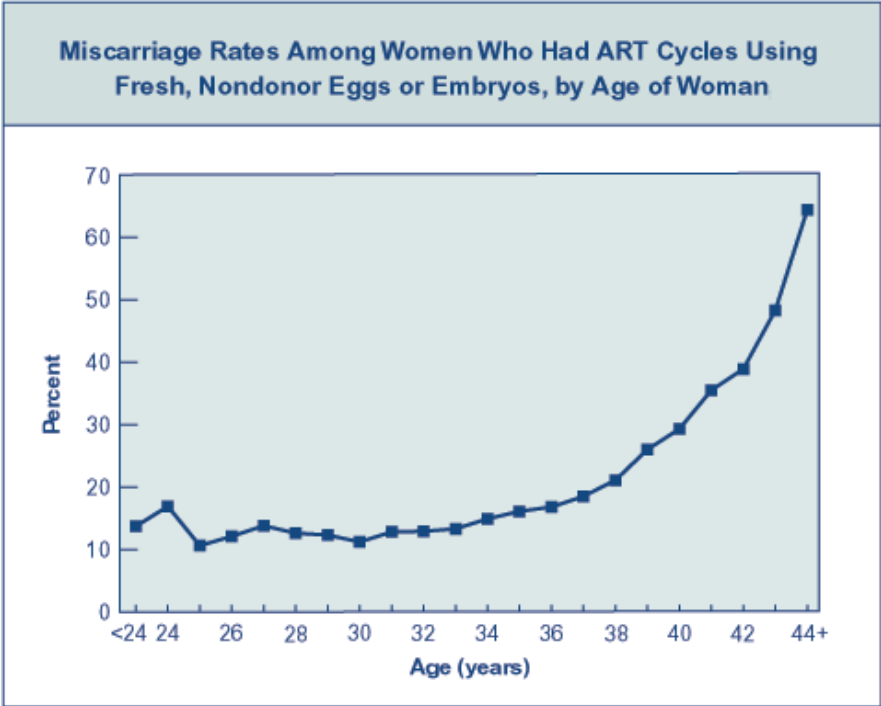
The following illustrations, from the Center for Disease Control (CDC) compilation of national IVF and oocyte donation data, show the impact of female age on the female fertility potential.

Please note that these graphs represent the nation-wide statistic; the live birth probabilities at Nova are higher.

Many infertility specialists recommend that women over the age of approximately 38 years, who are trying to conceive, should have aggressive treatment and proceed to In Vitro Fertilization quickly before their remaining fertility potential is lost.



IVF live birth rates begin to decline in the early thirties and are very low in the early forties. The likelihood of a fertilized egg implanting is related to the age of the woman who produced the egg and not to the receptivity of the uterus. Egg donors are typically in their twenties, thus the live birth rate for egg donation treatment varies only slightly across all age groups of the recipients.



This graph shows that a woman’s age also affects her risk for miscarriage. The rates begin to increase among women in their mid-to-late thirties and continue to increase with age, reaching 43% at age 42 years. The miscarriage rates observed among women undergoing ART (Assisted Reproductive Technologies, i.e. IVF) procedures appear to be no higher than in pregnancies conceived through intercourse.



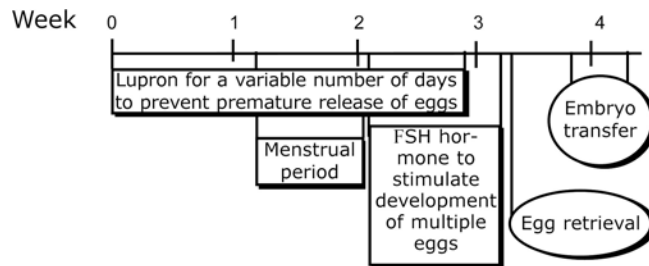
## In Vitro Fertilization

*In vitro* fertilization (IVF) is one of the most effective treatments available to help infertile couples achieve pregnancy. Most couples will have a 25-50% probability of a live birth per IVF procedure. In addition to being a very powerful treatment for infertility, IVF is an excellent test of egg and sperm quality.

*In vitro* fertilization treatment consists of:

1. Ovarian stimulation to induce growth of multiple eggs within the ovaries
2. Ultrasound guided egg retrieval
3. Fertilization of the eggs
4. Transfer of the resulting embryos into the uterus
5. Establishment of pregnancy

This is an example of an IVF treatment sequence. Actual treatment is individualized.



### 1. Ovarian Stimulation

IVF treatment begins with the onset of a menstrual period. Oral contraceptives are started within the first seven days of the menstrual cycle. They prime the ovaries for an optimal response. One to two weeks before the estimated onset of the following menstrual period, Lupron injections begin. Lupron prevents premature release of the eggs from the ovaries prior to the egg retrieval procedure. The volume of the Lupron injection is very small and it is given subcutaneously (just under the skin). Any part of your body can be used for these injections. They are given for approximately three to four weeks.

After one to two weeks of taking Lupron your menstrual period will start. Within two weeks of the onset of your period, you will begin taking FSH (Follicle Stimulating Hormone) injections in addition to the Lupron. FSH stimulates maturation of multiple eggs on your ovaries. FSH injections, like Lupron, are given subcutaneously with tiny needles. Nova IVF provides information on the proper mixing and administration of these medications. You will be taking both Lupron and FSH injections every day for approximately ten days.

During this time your progress will be monitored by ultrasound and estrogen blood levels. Once the eggs are ready, you will be instructed to stop taking the Lupron and FSH and to take a single injection of HCG hormone. This is also a subcutaneous injection. This medication triggers the final stages of egg maturation. Thirty-six hours after the HCG injection, the eggs are nonsurgically retrieved from the ovaries.

### 2. Ultrasound Guided Egg Retrieval

The egg retrieval is an office procedure at Nova IVF. Your partner is invited to be present during the egg retrieval. Using ultrasound guidance, a tip of a thin needle is passed through the top of the vagina into the cul-de-sac (a space behind the uterus). The ovaries are located near the bottom of the cul-de-sac allowing the tip of the aspirating needle to enter the ovarian follicles and aspirate the follicular fluid from them. The fluid is examined under a microscope to identify the eggs. The egg retrieval takes approximately five to ten minutes. Medications are used for analgesia. Many women do not feel the eggs being aspirated. Most will feel a short lasting menstrual-like cramp sensation

when the tip of the needle passes through the top of the vagina (once for each ovary). The egg retrieval is a very safe procedure.

### 3. IVF Laboratory

On average, eight to fourteen eggs are aspirated during the egg retrieval procedure. The eggs are identified under the microscope and are placed in culture medium filled petri dishes which have been pre-labeled with your name and an identifying code. The composition of the medium resembles the fluid secreted by the Fallopian tubes. This allows the embryos to develop in either environment at the same rate.

The male partner collects a semen specimen the day of the egg retrieval. The semen can be collected outside of the office if the specimen can be delivered within thirty minutes of collection; otherwise it should be collected at Nova IVF.

The sperm and the eggs are combined six hours after the egg retrieval. The very act of fertilization takes place over a period of several hours during the night. Your infertility history may suggest a possibility of a male factor significant enough to keep the eggs from being fertilized this way. In this case, we will perform the ICSI (Intracytoplasmic Sperm Injection) procedure in which a single sperm is inserted into an egg. This can significantly increase the fertilization rate for selected couples.

Evidence of fertilization can be seen the next day, 14 to 16 hours after the insemination. We will contact you in the morning following the egg retrieval to let you know how many eggs have fertilized. The fertilized eggs, now called embryos, are transferred into growth medium and continue to be cultured in the IVF laboratory.

### 4. Embryo Transfer

The embryo transfer is done one to five days after the egg retrieval. The embryos are "loaded" into the tip of a very thin transfer catheter in a very small volume of transfer medium, the catheter is then passed through the cervical canal to within 5 mm of the top of the uterus and the embryos are gently released. The transfer usually takes a few seconds to complete. No resting is required afterwards and you can immediately resume your normal daily activities. You do not have to change your lifestyle as you go through the IVF treatment.

The gamete embryologists will assess the embryos prior to the embryo transfer to determine their likelihood of implantation. Most partners will usually select two to four embryos for the transfer. Approximately one-third to one-half of Nova IVF's IVF pregnancies are twins and there are very few triplet pregnancies.

There may be more embryos than you may wish to have transferred. It is possible to cryopreserve these "extra" embryos and store them in liquid nitrogen.

Approximately one-half to three-quarters of the embryos survive the cryopreservation/thawing process. The implantation rate of the surviving embryos can be somewhat lower than with the "fresh" embryos.

### 5. Establishment of Pregnancy

After the embryo transfer, the front and back walls of the uterus gently hold the embryos, keeping them within the uterus. There is no restriction of your physical or sexual activity. The lining of the uterus is made receptive for the embryos through the action of the hormones estrogen and progesterone produced by the ovaries. Your own progesterone production is supplemented with progesterone vaginal capsules for a period of twelve days.

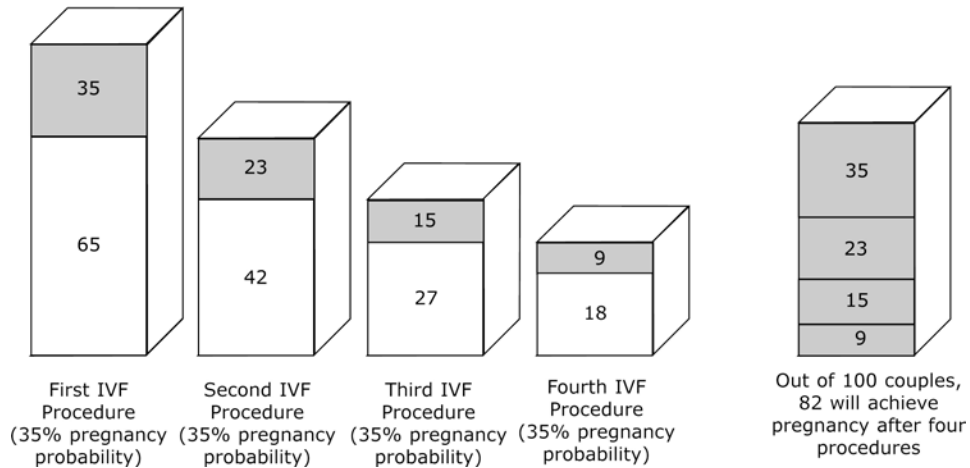
Approximately two weeks after your embryo transfer, you will return to Nova IVF for a blood pregnancy test. Your results will be out the same day. If the pregnancy test is positive, an ultrasound examination is scheduled two weeks later to visualize the implantation site and to look for a heartbeat. Once a heartbeat is seen, there is a 90-95% probability that the pregnancy will continue to a live birth. Your treatment at Nova IVF usually ends at that time and you can return to your obstetrician for routine obstetrical care. From that point on, your pregnancy becomes indistinguishable from a pregnancy conceived through intercourse.

At Nova IVF, it is our goal to minimize the likelihood of a high order multiple pregnancy (triplets or higher). If you conceived with a high order multiple pregnancy and by the 10th week a spontaneous

reduction has not taken place, you may choose to have a selective reduction. This procedure would be performed by a specialist. The reduction carries with it 5-10% risk of losing the whole pregnancy.

If the pregnancy test is negative, your period would start within a few days. You could begin another IVF treatment cycle or, if you have cryopreserved embryos, you might decide to have them transferred. Either treatment could begin after one spontaneous menstrual cycle. This would give your ovaries time to rest after the stimulation.

The following graph shows how the cumulative probability of pregnancy adds up if a couple is going through one to four cycles of IVF. In this example, we used an arbitrary 35% live birth probability per treatment. Your actual likelihood of a live birth could be higher or lower.





N o v a I n V i t r o F e r t i l i z a t i o n

## Prerequisites In Vitro Fertilization

There are very few prerequisites needed. You could complete them within a couple of weeks and be ready to start your treatment cycle.

It may be possible to reduce the cost of your prerequisites by combining two or more prerequisites into a single office visit at Nova IVF. The prerequisites are usually considered a diagnostic part of the treatment and many times your insurance company may cover a portion or most of the cost. Some prerequisites can be done by your regular OB/GYN.

Once you have had your initial consultation, you will need to complete the following prerequisites:

### Physical Examination

A brief physical examination is done together with a pelvic ultrasound and measurement of the uterus size. These are ideally done at the time of the initial consultation to reduce treatment cost.

### Pathogen Testing

This testing is required by the State of California. You and your partner must be tested for Hepatitis B-Surface Antigen, Hepatitis C-Antibody, HIV I&II, HTLV I&II and RPR. If you had any of these tests done within the last 12 months, they do not need to be repeated.

### Reproductive Hormone Assay

Egg quality can vary in each menstrual cycle. Your treatment should not be started during a cycle in which there is no probability of a live birth or in which the probability is low. The reproductive hormone assay (RHA) can assess the likelihood that normal eggs will be produced.

Follicle stimulating hormone (FSH) and estrogen blood levels are measured in the RHA. FSH stimulates the ovaries to produce eggs. If the ovaries cannot produce normal eggs, the FSH level increases. Estrogen production by the ovaries influences the FSH secretion and is also related to the quality of the eggs.

Most women will have a normal reproductive hormone assay result. An abnormal result does not mean absolutely that you cannot get pregnant with your own eggs and we typically recommend repeating the test up to three times.

### Sonohysterogram

If you have not had a recent hysterosalpingogram (HSG, X-ray dye study of the uterus and the Fallopian tubes), a hysteroscopy or a sonohysterography, you will need to have a sonohysterogram (ultrasound examination) to assess the endometrial cavity of your uterus. Presence of polyps, fibroids or scarring inside the uterus can significantly reduce the probability of implantation. If any polyps, fibroids or scarring are found, their removal would require a simple outpatient procedure by your OB/GYN or a specialist.

### Semen Evaluation

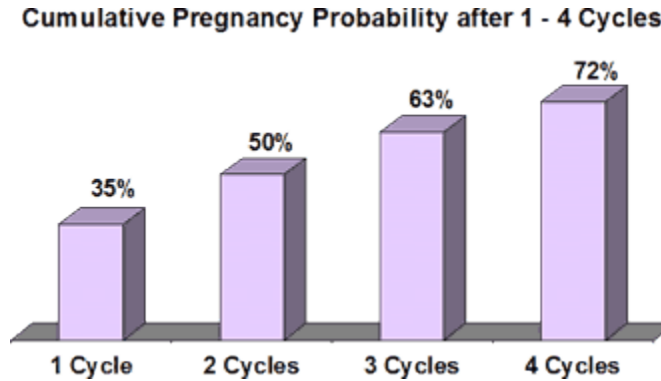
Most male partners will need to have a semen test done at Nova IVF to determine the best laboratory method of fertilization.

If you need any clarification or additional information, please give us a call or email us.

## Treatment Fees In Vitro Fertilization

*In Vitro* Fertilization treatment fee structure at Nova IVF was designed to maximize the affordability of *in vitro* fertilization and, hopefully, maximize the probability of your successful outcome.

Having more than one cycle of *in vitro* fertilization treatment significantly increases the likelihood of a successful outcome. The following graph illustrates the increase in live birth probability if you decide to have more than one cycle of treatment. In this example, we used an arbitrary 35% live birth probability per IVF cycle. Your actual likelihood of a live birth could be higher or lower.



Nova IVF fees are very competitive and contain no hidden costs i.e. facility fees, anesthesia fees, room fees, processing fees etc.

We hope that our treatment plans will provide you with the broadest financial options and will emphasize our commitment to a shared goal: a baby for you!

### IVF Treatment Fees

Treatment	Age	Treatment Fee*	Anesthesia and Procedure Room Fees	Freezing and Storage of Embryos	Frozen Embryo Transfer(s)	Assisted Hatching	Hidden Costs
One Cycle	N/A	\$9,785	Included	Fee	Fee	Fee As needed	None
Two Cycle Plan	up to 35	\$14,680	Included	Included	Included	Included Cycle #2	None
	35 to 37	\$16,150					
	38 to 40	\$17,610					
	41 to 42	\$19,080					
Three Cycle Plan	up to 35	\$20,550	Included	Included	Included	Included Cycle #2-3	None
	35 to 37	\$22,990					
	38 to 40	\$25,440					
	41 to 42	\$27,890					
Four Cycle Plan	up to 35	\$25,440	Included	Included	Included	Included Cycle #2-4	None
	35 to 37	\$28,380					
	38 to 40	\$31,310					
	41 to 42	\$34,250					

\* The treatment fee does not include the cost of pre-treatment evaluation and the state-mandated prerequisites (PDF).

Female age at the commencement of medication (FSH) to stimulate production of eggs in the first cycle is used to determine the cost of multiple cycle treatments.

## One Cycle Fee

Services covered in the one cycle fee:

- All in-cycle office visits, physician ultrasound examinations, estrogen and progesterone determinations and physician clinical monitoring required for IVF ovarian stimulation
- Egg retrieval procedure, analgesia, use of procedure room, embryo transfer and medical consultations related to IVF
- Preparation of semen sample(s)
- Oocyte identification, embryo culture, including possible extended culture to blastocyst and embryo transfer
- Serum pregnancy test(s)
- Pregnancy ultrasound(s)

## Two Cycle Plan

The two cycle plan provides for *up to* two IVF treatments, assisted hatching in the second treatment cycle, embryo cryopreservation (as needed), embryo storage and thawing with subsequent assisted hatching and transfer of any of the cryopreserved embryos.

You must have normal reproductive hormone assay result to qualify for the two cycle IVF plan. The majority of Nova IVF patients will qualify.

Services covered in the two cycle plan:

- Same as one cycle fee  
Plus
- One cryopreservation procedure of extra, non-transferred embryos (as needed)
- Storage, thawing, culture and transfer of *any* cryopreserved embryos (as many times as needed)
- Assisted hatching of any cryopreserved embryo
- Assisted hatching of non-cryopreserved embryos in the second treatment cycle
- Preparation of endometrial lining to receive thawed embryos (as many times as needed)

Once *all fresh and* frozen embryos have been transferred, if this treatment did not result in an ongoing pregnancy, you will receive a second cycle of IVF with the same services as outlined above.

## Three Cycle Plan

Qualifying criteria and services provided in the three cycle plan:

Same as in the two cycle IVF treatment but once *all fresh and* frozen embryos from the second IVF cycle have been transferred, if there is no ongoing pregnancy, you will receive a third cycle of IVF with the same services as outlined above (including assisted hatching and cryopreservation of extra, non-transferred embryos).

## Four Cycle Plan

Qualifying criteria and services provided in the four cycle plan:

Same as in three cycle IVF treatment but once *all fresh and* frozen embryos from the third IVF cycle have been transferred, if there is no ongoing pregnancy, you will receive a fourth cycle of IVF with the same services as outlined above (including assisted hatching and cryopreservation of extra, non-transferred embryos).

Please see additional information on Nova Treatments and Fees page. If you wish, you can request an initial appointment for *in vitro* fertilization with one of the Nova physicians.

Fees are subject to change without notice.

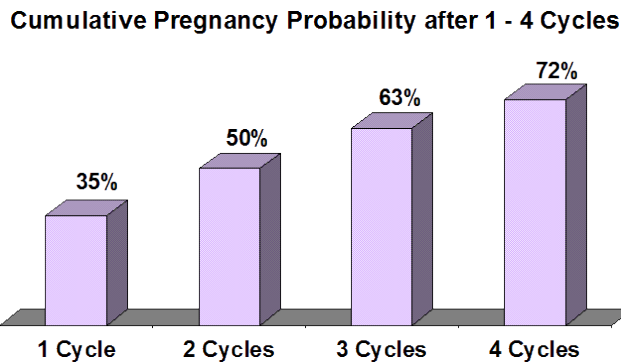


## MAXIMIZING PREGNANCY PROBABILITY

You can significantly contribute to the successful outcome of your infertility treatment. Optimizing your health and selecting a treatment plan of two or more treatment cycles can have a considerable impact on the probability of a successful pregnancy.

### Multiple Treatment Cycles

Having more than one cycle of treatment can substantially increase the likelihood of having a baby. The following graph illustrates the increase in live birth probability if you decide to have more than one cycle of treatment. In this example, we used an arbitrary 35% live birth probability per treatment. Your actual likelihood of a live birth could be higher or lower.



NOVA provides a diverse selection of very competitive multiple cycle treatment fee plans which can significantly reduce your per cycle cost.

### Optimizing Your Health

Your physical condition could make the difference between successfully achieving a live birth and going through years of frustration of unfulfilled dreams. We urge **both partners** to adhere to the following recommendations as closely as feasible and to start implementing them **as soon as possible**.

#### 1. Optimize your body's acid-alkaline balance

The pH of our blood is slightly alkaline. If we eat acidic food, our bodies have to work extra hard to keep the blood in an alkaline state. This extra work stresses our body and can lead to decrease of our fertility potential.

The choices of foods that we eat affect this balance. The typical North American diet is highly acidic. The best way to maintain the proper blood pH balance is to avoid acid producing foods and increase consumption of alkaline foods. Try not to go out to eat; prepare your own food as much as possible.

##### A. Eliminate or minimize the intake of the following acid-forming foods:

- All grains including corn, oat and flour-based foods (**bread, pasta, pastry, dumplings, tortillas, chips...**) except buckwheat and white rice up to 1 cup (cooked) a day
- Dairy (**cheese**) except milk, buttermilk, kefir and yogurt up to 1 cup a day
- Alcohol
- Coffee except de-caffeinated up to 2 cups a day
- Cocoa (use carob products instead)
- Nuts (except hazelnuts)
- Beans/legumes except up to 1 cup (cooked) a day (not canned!)
- Cranberry
- **Processed meat** (salami, sausages, hotdogs, canned meat)

**B. Increase intake of the following alkaline foods (organically grown if possible):**

- Apples
- Apricots
- Artichoke
- Asparagus
- Avocado
- **Bananas**
- **Berries** (all)
- Beets
- Bell peppers
- Bok choy
- Broccoli
- Brussel sprouts
- Cabbage
- Cantaloupe
- Carrots
- Cauliflower
- Celery
- Chard
- **Coconut**
- Cucumber
- Dates
- Eggplant
- **Figs**
- Garlic
- Ginger
- Green peas
- Grapefruit
- Grapes
- **Kale**
- Kiwi
- Lemon
- Lettuce
- Mango
- Melons (all)
- Nectarine
- Olives
- Onions
- Orange
- Papaya
- Parsley
- Peach
- Pear
- Persimmon
- Pineapple
- Potatoes
- **Raisins**
- **Spinach**
- Salad mix
- String beans
- Sweet potatoes
- Tomatoes
- Zucchini

**2. Consume an *abundance* of essential fatty acids:**

- Deep-sea fish and fish oil from non-polluted sources (<http://novaivf.com/images/pdf/Best Fish for Your Health.pdf>)
- Flaxseed and pumpkin seed oils
- Broccoli, cauliflower, beets, carrots, kale, collards, cabbage and brussel sprouts
- Raw seeds
- Eggs (no more than one a day on average)

**3. Eliminate or minimize intake of trans fatty acids (very important):**

- Fried foods (if you must have occasional fried food, use coconut oil only)
- Vegetable shortening
- Margarine
- Lard
- Animal fat
- Hydrogenated vegetable oils
- Junk food

**4. Vitamins**

Take high-potency, high-quality natural multivitamins and mineral supplements (both partners-very important). Take a minimum of 1mg of Folic Acid daily.

**5. Exercise**

Unless you exercise regularly, several times a week, start daily walks (outdoors!) for a minimum of 45 minutes each.

**6. Volatile Organic Compounds (VOC)**

Many everyday products off-gas VOC's. It is very important to minimize your exposure (both partners) to VOC's:

- Petroleum products (avoid car exhaust fumes and solvents, use disposable gloves when filling up your car)
- Off-gassing from plastics and building materials (do not drive a new car when trying to conceive, do not remodel your home or buy a newly constructed house)
- No exposure to cigarette smoke (both partners)
- Eliminate or minimize use of perfumes and colognes (unscented deodorant is ok)
- Do not dry-clean your clothes
- Eliminate air fresheners at home and in your car(s)
- Consider purchasing a VOC-scrubbing air purifier for your bedroom if you sleep with the windows closed (search internet for "voc air purifier")

**7. Stress**

Get plenty of sleep and try to minimize your everyday stresses.

**8. Acupuncture**

It is ok to have acupuncture

**9. Chinese medicine**

It is ok to use Chinese herbs as long as they are for strengthening your health only and do not have any female hormone-like effect.