



york fertility  
— centre

## **Our Services**

# York Fertility Centre

## Our Services

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**Note: This overview of services is provided for informational purposes only to the patients of Dr. Pyselman and is not in any way to be taken as medical advice. The information contained here is subject to change.**

## **Infertility Evaluation**

### ***Female Evaluation***

At the first appointment, the female patient together with her partner will meet with the physician for an initial consultation. A thorough medical history will be obtained, including a reproductive history, menstrual cycle history, contraceptive history and a review of any past infertility tests or treatments. In addition, an inquiry will be made into the patient's general health status, any surgeries, past or present illnesses, lifestyle factors, and any incidences of heredity illness in the family history.

Every patient will then begin their initial fertility investigation, starting with a physical exam and pelvic exam. The initial fertility investigation involves the following routine tests which help investigate and diagnose potential causes of infertility:

- PAP test and vaginal/cervical cultures
- Blood work - typically a single blood test which covers hormone tests, blood type, rubella immune status and a screen for infectious diseases
- 3 Dimensional Pelvic (3D) Ultrasound - this full-bladder ultrasound is usually performed on the day as the first appointment
- Sonohysterogram - a specialized ultrasound assessing the cavity of the uterus and the fallopian tubes on day 7-10 of the menstrual cycle
- Tests of Ovarian Reserve (Ovary "Age") - an AMH test and/or an FSH blood test, on day 3 of the menstrual cycle

Additional tests may be ordered at the discretion of the doctor, and may include the following:

- Hysterosalpingogram - an X-ray test to evaluate the fallopian tubes
- Endometrial Biopsy - a sample is taken of the lining of the uterus
- Laparoscopy - an operative procedure in which a camera is inserted into the abdomen to look directly at the pelvis, uterus and fallopian tube
- Hysteroscopy - an operative procedure involving the insertion of a camera into the uterus looking for polyps, scarring and fibroids

### ***Male Evaluation***

Male partners are evaluated during the same first visit as his female partner. A detailed medical history is obtained and the following tests are ordered:

- Blood Work - testing for infectious diseases and a complete blood count
- Semen Analysis

Additional tests may be ordered at the doctor's discretion, and could include the following:

- Sperm Chromatin Test - an assessment of the fragmentation or breaks in the sperm's DNA

- Scrotal USS looking at the testicles and veins in the scrotal area
- Hormone Blood Tests
- Genetic Testing - blood tests looking for chromosome abnormalities

You will be given further information about the tests that you should do on the day of your appointment, where you will also have the opportunity to ask any questions you may have. Never hesitate to ask any of our staff for more information - we are here to help you.

### ***Follow-Up Appointment***

Once all testing has been completed and analyzed, the patient and her partner will meet with the doctor at a follow-up appointment to review the test results, discuss treatment options and create a personalized treatment plan. The follow-up appointment occurs roughly 1-2 months after the first appointment, depending on the timing of the patient's testing, menstrual cycle and personal schedule.

*\*Since each patient completes testing at a different rate, please inform us when you are nearing completion of your testing in order to book your follow-up appointment. This appointment will not be booked automatically.*

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### **Natural Cycle Monitoring**

As part of the initial fertility evaluation, you may be offered Natural Cycle Monitoring. 'Natural' implies that no fertility medications are used and 'cycle' refers to your menstrual cycle. Natural cycle monitoring not only allows the doctor to explore potential causes of infertility but may also in itself result in pregnancy.

Natural cycle monitoring of the patient's menstrual cycle is comprised of blood work and/or ultrasounds performed daily for a few days around the middle of a patient's menstrual cycle. These tests assess hormonal factors surrounding ovulation, follicle development and the thickness of the uterine lining at the time of ovulation, which gives the doctor a better understanding of the ovary's natural functioning and indicates the optimal timing for intercourse or intrauterine insemination (IUI).

An additional blood test - a Progesterone Level - is done one week after ovulation to confirm that ovulation has occurred and to determine whether progesterone levels are adequate to support a pregnancy. The successful implantation of a fertilized egg requires adequate progesterone levels.

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## **Ovulation Induction**

Ovulation induction involves the use of various fertility medications to stimulate the release of one or more eggs from the ovary. Ovulation induction may be a recommended treatment option in one of two circumstances.

The first is in women who do not ovulate or ovulate infrequently on their own. In these cases, the goal is to produce a single egg. Ovulation induction is often combined with cycle monitoring to determine the timing of ovulation and thus help time intercourse to improve chances of pregnancy. If there are other factors present, such as low sperm count, intrauterine insemination (IUI) may also be recommended.

The second case in which ovulation induction may be recommended is in women who have regular ovulatory cycles, but who have other causes of their infertility such as low sperm count or unexplained infertility. For these patients, the goal is to produce more than a single egg to improve pregnancy chances. This is also called superovulation or controlled ovarian stimulation. When medications are used for this purpose, there is an increased risk of multiple pregnancies and ovarian hyperstimulation syndrome (OHSS).

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### ***Medications for Ovulation Induction***

#### **1. Oral Medications**

Oral fertility medications are usually the first line of treatment for the induction of ovulation and are often used as an initial treatment for unexplained infertility. The most common medications used are clomiphene and letrozole. Side effects of these medications may include, but are not limited to, moodiness, headaches, ovarian cyst formation, blurred vision and breast tenderness. The most significant risk of the medications is multiple pregnancy, which occurs in 8-10% of patients. The use of letrozole is off label, meaning that the drug companies are authorized to make it for another reason (the prevention of breast cancer). Sometimes an injection of a medication called HCG is used to help release the egg.

#### **2. Injectable Medications (Gonadotropins)**

The use of injectable medications called gonadotropins are also used for ovulation induction. These medications are very pure forms of the hormones naturally produced by the pituitary gland, FSH +/- LH, which stimulate the ovary to make eggs. Patients are instructed on how to self administer the medications. When using gonadotropins, close monitoring with blood and ultrasound is required to decrease the risk of ovarian hyperstimulation and multiple pregnancies.

## **Intrauterine Insemination (IUI)**

Intrauterine insemination is a procedure by which the semen sample is specially treated in the lab and then placed directly into the uterus of the female patient.

In the lab, the sperm is washed and the healthiest, most motile sperm are isolated. The washed sperm is then placed inside the uterus, to help the best sperm reach the egg. A woman must have open fallopian tubes for this form of treatment.

The procedure feels somewhat like a PAP test from the perspective of the patient; a very fine, soft catheter is placed in the uterus to transfer the sperm. It takes only a few minutes and patients can return to normal activities immediately after.

Intrauterine insemination may improve the chances of pregnancy in patients who have unexplained infertility, male factor infertility (eg. low sperm counts) or for those patients who have difficulties having intercourse. IUI can be performed in natural cycles, or combined with fertility medications that enhance ovulation. Cycle monitoring with blood work and ultrasound helps to determine the time of ovulation and thus the ideal time for insemination. Success rates vary depending on the cause of infertility and a patient's age.

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## **Therapeutic Donor Insemination (TDI)**

Therapeutic donor insemination is offered to women who do not have a male partner, whether that patient is in a same sex relationship or is a single woman, or alternatively to couples in which the male partner has no sperm or has a very low sperm count and doesn't wish IVF. Guidelines for donor insemination are highly regulated by Health Canada, ensuring patient safety.

Various companies, which meet the strict guidelines of Health Canada, are available to patients for ordering donor sperm. All potential donors are screened for infectious diseases, the sperm is then quarantined for 6 months, and the donors are rescreened before the sperm is released for use. Donors are also screened for various genetic diseases, family history and personal medical history. Donors of various ethnic and racial backgrounds are available.

Before entering the donor insemination program, potential recipients undergo an initial fertility evaluation, including infectious disease screening. An appointment with a psychologist or social worker is also arranged to ensure that all the social implications of a pregnancy with donor sperm have been considered.

Most frequently, a woman will start trying to conceive with donor insemination by monitoring her natural cycle with ultrasound and hormone tests to determine the timing of ovulation. At ovulation, the donor sperm is inserted into the uterus with the aid of a tiny catheter. This

procedure is similar to a PAP test and takes only a few minutes. Normal activities can be resumed after the procedure is complete.

Pregnancy rates for donor insemination approximate natural pregnancy rates. If pregnancy is not achieved after 3-6 cycles, fertility medications may be prescribed to enhance the chances of pregnancy.

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## **In Vitro Fertilization (IVF)**

In Vitro Fertilization is an advanced reproductive technology (ART) in which a woman's eggs are removed from her body and fertilized in a Petri dish in a lab. The embryos that develop are then placed into the uterus, three or five days later; any additional embryos are frozen. There are many situations in which IVF may be a recommended treatment, such as in patients with blocked fallopian tubes, endometriosis, male factor infertility or unexplained infertility. The most important factor predicting the success of IVF is maternal age; pregnancy rates start to decline after age 35.

The steps involved with IVF are as follows:

1. Pre-IVF preparation
2. Ovulation Induction (stimulation of egg production)
3. Oocyte retrieval (removal of the eggs from the body)
4. Fertilization of eggs (done in the laboratory)
5. Embryo Transfer (embryos placed into the uterus)
6. Luteal phase support (after embryos have been transferred)

### ***1. Pre-IVF preparation***

After a thorough fertility evaluation ensuring that there are no barriers to IVF that need to be dealt with prior to initiating the IVF procedure, the doctor will prescribe your treatment protocol. Most commonly, woman will be placed on oral contraceptive pills (OCPs) to help eliminate the possibility of ovarian cysts prior to initiation of treatment. The duration of OCPs in general is 21 days, but may vary somewhat based on the reason for infertility. Alternatively, some women will be placed on Lupron (a GnRH agonist) for IVF preparation.

### ***2. Ovulation Induction (egg production)***

In general, the success rate of IVF is improved when multiple eggs are available for fertilization. Medications called gonadotropins are used to stimulate egg production. Ideally, approximately 7-10 eggs are available for fertilization, but this varies greatly from woman to woman, with as little as 1-2 eggs being produced to over 20. Pregnancy rates are lower when there are fewer eggs available, but complication rates increase when higher numbers of eggs are produced.

To assess egg production, ultrasound and blood work looking at hormone levels are done on a daily basis. The ultrasounds look at follicle development, the small 'cyst' in the ovary where the egg is produced. The blood work looks at hormones that the developing follicle produces. Assuming that Lupron is not being used, a GnRH antagonist is used to prevent premature ovulation. When the follicles have reached a mature size, usually when the largest follicle is around 18+/- mm, an injection of HCG is given to fully mature the eggs, and the retrieval of the eggs is done 35 hours later.

### ***3. Oocyte (egg) retrieval***

The retrieval of the eggs is accomplished by inserting a needle through the vagina into the follicles, which are in the ovary, under ultrasound guidance. The fluid inside the follicle is drained and given to the lab, and the embryologist searches for the egg. The egg itself cannot be seen by ultrasound, as it is microscopic. Intravenous sedation is given at the time of retrieval, which alleviates most discomfort. Although rare, it is possible for no eggs to be retrieved despite the presence of follicles.

### ***4. Fertilization of eggs***

Once the eggs have been collected, they are placed in the incubator while the sperm sample is prepared. Usually a fresh sperm sample is obtained, however frozen sperm can also be used. The prepared sperm are then added to the eggs and left in the incubator overnight for fertilization to occur.

If there is a concern about the sperm quantity or quality, a procedure called intracytoplasmic sperm injection (ICSI) may be recommended. In this circumstance, the sperm is injected right into the egg with a very fine needle.

The morning following the oocyte retrieval, the lab evaluates whether the eggs have fertilized. In general, about 70% of eggs go on to be fertilized and become an embryo; rarely there is no fertilization at all.

### ***5. Embryo Transfer***

Embryo transfers are usually done three to five days after the egg retrieval. If there are only 1-2 embryos, a day three transfer is generally done. If there are a larger number of good quality embryos, the transfer is delayed until day 5 allowing selection of the most promising looking embryo(s). We believe in offering single embryo transfer to all women, especially under the age of 38, to decrease the likelihood of twins and all the complications that arise from multiple gestations. Rarely, even when transferring a single embryo, a multiple pregnancy can result. Any additional embryos are frozen for future use.

The transfer is done under ultrasound guidance with a full bladder to improve visualization. From a woman's perspective, the transfer feels a little like a PAP test and does not require any sedation. Usually, we suggest two days of rest after an embryo transfer.

## ***6. Luteal support***

In the two weeks following oocyte retrieval, women are placed on vaginal progesterone to improve the likelihood of an embryo implanting. Additional medications such as Aspirin may be prescribed. A pregnancy test is done 10-12 days after embryo transfer and if the test is positive, the progesterone is continued. An ultrasound is done about 2-3 weeks after the positive pregnancy test to determine the viability and location of the pregnancy.

### ***Risk of IVF/ICSI***

Although in general IVF+/- ICSI goes well, there are some inherent risks of the procedure. These risks include, but are not limited to: allergic reactions to medications, bleeding or injury to adjacent organs during egg retrieval, infection, ovarian torsion, multiple pregnancy, ectopic pregnancy, genetic disorders and higher risk pregnancies. One of the most significant risks of IVF is Ovarian Hyperstimulation Syndrome (OHSS), a syndrome in which there are fluid shifts in the body, which may, if very severe, cause blood clots, stroke, renal failure and so on. A detailed consent process and education session is undertaken prior to IVF/ICSI so that patients clearly understand their risks.

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## **Embryo Freezing**

Since we strongly encourage a single embryo transfer, in many cases there are extra embryos available for freezing. If the initial embryo transfer is unsuccessful, or if a couple wants a second child, a frozen embryo transfer is offered using the extra embryos. This is much less costly and less invasive than the original IVF procedure.

## **Recurrent Pregnancy Loss**

Approximately 25% of all recognized pregnancies result in a miscarriage, with rates increasing with age. The majority of losses are the result of abnormalities in the number of chromosomes present in the embryo. The number of women who have 2 miscarriages in a row is less than 5% and the number of women with 3 or more consecutive losses is less than 1%, although these numbers increase with age.. After 2 losses consecutively, preliminary investigations are warranted to identify the potentially treatable causes of pregnancy loss

York Fertility Centre offers the following investigations for Recurrent Pregnancy Loss:

1. Blood Tests
  - Hormones
  - Blood sugar/insulin resistance assessment
  - Chromosome analysis

Autoimmune testing (antiphospholipid syndrome)  
Thrombophilia (blood clotting disorder testing)

2. Ultrasound  
Sonohysterography - looking for uterine shape abnormalities, polyps, fibroids or scar tissue in the uterus
3. Sperm DNA Fragmentation Testing
4. Pre-genetic screening of embryos

The results of the above investigations direct the treatments that are then offered. In approximately 50-70% of couples, no definite cause for recurrent pregnancy loss is found. However, in couples in which no cause has been found, the chance of successful pregnancy is 60-70%.

### ***Beneficial Lifestyle Modifications***

As with infertility in general, lifestyle factors may negatively impact a pregnancy and could contribute to miscarriage. As such, we strongly encourage you to stop smoking, reduce caffeine consumption, eliminate alcohol consumption and maintain a healthy weight while pregnant. We realize, however, that these lifestyle modifications can be difficult to achieve or sustain for a variety of reasons, which is why we have built a team that includes nutritionists and counsellors that can help support you. Ask us for information about how you can take advantage of our partners to achieve your goals.

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### **Polycystic Ovarian Syndrome (PCOS)**

Polycystic Ovarian Syndrome (PCOS) is an area of special interest for Dr. Pyselman that has developed after many years of treating patients with PCOS for infertility.

As PCOS patients naturally make up a large proportion of the patients seen at York Fertility Centre, Dr. Pyselman is currently developing additional resources and services tailored specifically to the needs of an infertility patient with PCOS. These resources and services will be in addition to the already comprehensive treatment protocols in place at York Fertility for PCOS patients, which include sonohysterograms, ovulation induction and cycle monitoring, diabetes screening and education, endometrial sampling, additional care and monitoring during early pregnancy, and so on.

If you are struggling with infertility and think that diagnosed or undiagnosed PCOS might be a contributing factor, book a consultation with Dr. Pyselman.

Please note: At this time Dr. Pyselman treats only those patients who suffer from PCOS and who are trying to get pregnant.

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## **Sonohysterogram & Obstetrical Ultrasound**

### ***Sonohysterograms***

A sonohysterogram is a special ultrasound that involves imaging the uterus and uterine cavity. Both a specially trained physician and an ultrasound technician must be present in order to perform the test. A sonohysterogram may be required for a variety of reasons, such as: irregular bleeding, infertility, recurrent miscarriages, any suspected abnormalities of the uterus, or as a preliminary evaluation for in-vitro-fertilization.

Dr. Pyselman performs sonohysterograms ("sonos") on site at York Fertility Centre for both her patients and the patients of other physicians. If you think you might benefit from a sonohysterogram, and you are not a patient of Dr. Pyselman, speak to your doctor.

We are happy to arrange a sonohysterogram for you. The referral is typically made through our ultrasound partner, True North Imaging (TNI). Your doctor may already have TNI or similar ultrasound requisition forms. If not, you can find the requisition form on our website under Our Services. Once your physician has given you a referral, call (905) 472 4915, TNI's York Fertility Centre location, to book your appointment. Once your appointment has been booked, please fax your requisition form to TNI in advance (905) 472 4130, if possible.

Please read our Sonohysterogram Information Sheet, which can be found on the Our Services page of our website, if you have been booked for a Sono at our clinic.

### ***Obstetrical Ultrasound***

Through our partners True North Imaging, York Fertility Centre also offers obstetrical ultrasound and imaging services. This includes viability scans, nuchal translucency scans, level 2 obstetrical ultrasounds and biophysical profiles. We provide these services to patients who have conceived at our clinic and also accept referrals from outside physicians.

To arrange any of these ultrasound services, you will require a referral from from a physician, who will fill out a requisition form for you. Once you have a requisition, contact True North Imaging at York Fertility Centre by calling (905) 472 4915 to book your appointment. Once your appointment has been booked, please fax your requisition form to TNI in advance to (905) 472 4130, if possible.

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## **Acupuncture & Alternative Therapies**

Studies have shown that acupuncture can play an important role in aiding the treatment of infertility. Acupuncture has been shown to improve quality of life in infertility patients by alleviating pain, nausea and stress, and has been shown in some studies to improve fertility by increasing blood flow to the uterus, reducing stress, normalizing hormones and endocrine systems, and regulating the menstrual cycle.

York Fertility Centre provides on-site access to Acupuncture and Traditional Chinese Medicine consultations.

## **Counselling**

Infertility is not simply a medical concern, but also involves a vast array of emotional concerns. Fertility counselling provides a confidential, supportive environment for you and/or your partner to safely express concerns and anxieties, including decisions about whether infertility treatment is right for you, and if so, how to work through understanding and coping with infertility and its treatment.

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## **Genetic Screening**

We are now pleased to be able to offer genetic screening of embryos in conjunction with our partner, Markham Fertility Center. This genetic screening can be done to look at chromosome numbers or to look for single gene disorders in families with a history of genetic diseases.

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