

VICTORIA  
FERTILITY



C·E·N·T·R·E

# Donor Insemination

## Introduction

One of the options for treating severe male factor infertility, or for achieving fertility where no male partner is involved, is artificial insemination using donor sperm or, more commonly, donor insemination (“DI”). The acronym “AID” is no longer used since the advent of AIDS, and sometimes the procedure is called “therapeutic donor insemination” or TDI. DI involves placing cryobanked sperm from an anonymous donor in the uterus just before the time of ovulation.

## When to Use Donor Insemination:

Therapeutic insemination using donor sperm (DI) may be the treatment of choice in the following cases:

1. When the sperm count is very poor and there are no treatment options to improve sperm count and quality
2. When it is not possible to recover sperm capable of fertilizing an egg – even by ICSI
3. When the man is a carrier of an undesirable hereditary condition
4. When ICSI/IVF is not financially possible (the cost of an IVF/ICSI cycle is \$5500)
5. For single women or same sex couples

## Where Do Donor Sperm come from?

Donor sperm is obtained from reputable sperm banks that must meet strict standards imposed by Health Canada. Rigorous screening is performed on each donor before collecting and freezing sperm. The screening process includes a thorough family history, complete medical and social history, blood typing, screening for genetic disorder, sexually transmitted diseases, and screening for hepatitis B and C, HIV, CMV and HTLV. Potential donors are not accepted if there are any abnormalities detected in any of the screening tests. Furthermore, each frozen specimen is quarantined after freezing and only released for use if the donor remains free of any infectious illnesses at least 6 months

later. Only sperm and banks that meet the Health Canada standards can be used for donor insemination in Canada.

### **How Do I Choose a Sperm Donor?**

The sperm bank will provide a list of donors available. Brief descriptions will be given of the donor – including racial or ethnic background, blood type, certain physical characteristics and/or certain social characteristics that may be important to you. More detailed profiles are normally available from the sperm banks on request, although there is usually a charge for this extra service.

### **How is Donor Insemination Done?**

Before embarking on donor sperm insemination you will be evaluated to rule out any obvious fertility problems. Your menstrual cycles will be monitored with a basal body temperature chart to confirm that you are ovulating. This will give information about the length of your cycle, and at what time of the month you normally ovulate. As part of your work up some baseline investigations will also be performed. These will include some hormone tests, blood tests to rule out infectious illnesses such as hepatitis B and C, HIV, HTLV, CMV as well as genital tract cultures. The exact timing of ovulation will be determined by you checking your urine each day leading up to your fertile period using an ovulation predictor kit. Approximately 24–36 hours prior to ovulation (that's when the egg is released) a hormone called luteinizing hormone (LH) appears in your urine. The ovulation predictor kit allows you to monitor your urine for the presence of this hormone. When the test is positive we will know that your egg will be released the following day.

There are a number of different commercially available Ovulation predictor kit available. Some of these include CLEARPLAN, OVUQUICK, FIRST RESPONSE etc - all of which can be purchased from any pharmacy. Some of these kits may be expensive. On line companies may provide LH kits at more affordable prices. One such company operates out of Vancouver and their products can be purchased through their website [www.saveontests.com](http://www.saveontests.com)

When the urine test is positive you will need to contact VFC so that arrangements can be made for the insemination to take place the following day.

Inseminations are performed seven days per week.

If you do not ovulate regularly, or if your cycles are unpredictable, you may be asked to use a fertility enhancing (ovulation induction agent) such as Clomiphene.

The actual insemination process is very like having a Pap smear done. A speculum is inserted into the vagina, and the thawed, washed sperm is injected through the cervix into the uterine cavity using a special thin catheter. Sometimes this might cause a sharp

cramp, which usually subsides after a few minutes, although you might also experience some discomfort a few hours later. The actual insemination procedure usually only takes a few minutes. Sometimes difficulty is experienced passing the catheter through the cervix, and the cervix will need to be held steady using an instrument called a tenaculum.

After the insemination you will be asked to lie quietly on the examination couch for 10-15 minutes, after which you will be free to leave the office and resume normal activities. We do however ask that you do not do any major exercise or go into a hot tub or public swimming pool for 24 hours after the insemination. Other activities such as intercourse are fine to do.

### **How Successful is Donor Insemination?**

This depends on many factors, the most important of which is your age. For women under the age of 35, with no other fertility-related health problems, the success rate is about 18 – 20 % per treatment cycle or about 60% after 6 months. Success rates decrease as you get older.

If you are not pregnant after 6 treatment cycles, further investigations might be suggested. If no fertility related problems are identified, it might be suggested that you consider increasing the chance of pregnancy by using certain fertility drugs. There are a variety of different fertility enhancing medications which could be discussed with you.

### **Is Donor Insemination Safe?**

Donor insemination is a very safe procedure, especially when no medications are used. Once a pregnancy occurs, it is no different to one that occurs naturally in a woman of the same age. The risk of miscarriage is not increased, remaining at about 15% for women under the age of 35. The risk of congenital abnormalities is also the same as would be expected for anyone conceiving naturally. However, if fertility-enhancing drugs are used there might be other risks such as multiple pregnancy.

### **What are the Legal Implications?**

A child born through donor insemination is considered to be the legal child of the mother and her spouse or partner. The legal obligations of the mother and her spouse to such a child are no different to that of any other couple.

If you and your partner are not legally married, and there is any concern about your obligations to the child, you should consult your lawyer prior to committing to this treatment.

## **Is Donor Insemination Confidential?**

This is a highly confidential process. It is not necessary for you to disclose your participation to anyone. You will not have access to the identity of the donor, nor will the donor have access to your identity.

You might or might not choose to discuss this process with your family, friends, or the children that result. These are some of the many issues that you should discuss with a counselor before starting treatment.

(We at VFC do encourage disclosure - meaning that the child born through this process is informed).

## **What Does Counseling Involve?**

If you do opt for donor insemination we will ask you to meet with a Counsellor to discuss many of the issues involved. A counselling session is essential before proceeding with donor sperm insemination. It is not a screening test to determine your eligibility, but rather an attempt to help you become emotionally and socially prepared for the whole process. The treatment process will be started only once you and the Counsellor are comfortable that you have considered all the issues associated with donor insemination.

The Provincial Health Services Plan does not cover the consultation with the Counsellor, for which you will be charged a fee, presently \$150 for a 1-hour session.

## **What Does Donor Insemination cost?**

There are several costs associated with having donor insemination treatment.

1. **Counselling:** The counselling session is, at the time of preparing this InfoSheet, \$150 per hour. You will be billed by the Counsellor and pay her directly
2. **Sperm Samples:** Donor sperm samples must be bought from a donor sperm bank that is approved by Health Canada. Although many donor sperm banks list samples as either washed or unwashed (washing is a process that separates the good sperm from the liquid part of the semen and suspends them in a special culture medium), we recommend that after thawing, all sperm samples are washed to remove the cryoprotectant that was used to protect the sperm during freezing (like antifreeze). This is particularly important because we recommend inseminating the sperm directly into the cavity of the uterus, since this increases the chance of conceiving in each treatment cycle, Therefore - we recommend that unwashed specimens are purchased (since they're cheaper and contain more sperm), and we will do the washing in our lab after thawing the sample, before the insemination. The cost of each donor semen specimen varies from one bank to another, but is generally around \$500.00 per unit
3. **Courier Fees:** These are variable and depend on whether you choose a standard or priority service for shipping the semen from the cryobank to the VFC

4. Storage: Ongoing storage of the frozen donor sperm samples in the VFC cryobank also attracts a fee. There is also a handling fee for processing the paper work and transferring the samples to the VFC Cryotanks (see current price list)
5. Insemination: The cost for each insemination (see our current price list) includes the thaw, post-thaw sperm count and assessment, washing, and the insemination itself
6. Fertility Drugs: These may or may not be required. There are different types of fertility drugs and treatment regimens that might eventually be used, and they vary tremendously in cost
7. Ovulation Predictor Kits: These vary significantly in price.

After everything is said and done, the average cost per insemination ( after paying the sperm bank for the vials, the shipping and handling, the counselling fee, the storage fees, and the cost for preparing the sperm for the insemination) is about \$800.00. This partly depends on how many vials you purchase, and the cost per vial which may vary from company to company)

## **Ordering Donor Semen**

There are a number of reputable sperm banks in North America. but the three preferred by VFC are ReproMed, which is based in Toronto, Xytex, which is based in Atlanta, and Can-Am Cryo Services in Toronto. Their websites are as follows:

[www.donorspermohs.com](http://www.donorspermohs.com)  
[www.repromedltd.com](http://www.repromedltd.com)  
[www.canamcryo.com](http://www.canamcryo.com)

When visiting the Xytex website, be sure to choose a donor from the Canadian list only.

When you are ready, you will need to coordinate the ordering of your donor semen with the VFC. When you have chosen a donor, please call one of our embryologists to make all the necessary arrangements.

(Before choosing a donor and ordering sperm, you need to know your CMV status. Cytomegalovirus (CMV) is a common virus in the community – which causes a flu like illness. Most adults are immune to it. As part of your assessment, you will be having a blood test to check whether or not you have had CMV in the past. If you have – you will have antibodies against CMV – and cannot get the infection again. If you are negative, it means that you have never had CMV – and that you are still susceptible to it. If you do not have antibodies against CMV – you should preferably choose a donor who is also CMV negative.)

## The Cycle Itself

Once everything has been organized, and the sperm samples have been received from the donor bank, you will be ready to go. By this time I will have had a chance to review a basal body temperature chart and would have advised you on what day to start checking your urine using the ovulation predictor kit.

- Please notify VFC when you get your period so we are aware that you will be having an insemination
- When your ovulation predictor kit is positive you contact VFC and we make arrangements for the insemination to be done the following day
- You will be given a sheet of instructions on exactly how to use the ovulation predictor kit, as well as the phone numbers to contact me after hours
- Please make sure that you always test your urine at around midday - and inform the clinic ASAP that you will be needing a DI the following day. The laboratory has to prepare and plan for the insemination –
- and we MUST KNOW THE DAY THAT YOU HAVE YOUR SURGE ie. the day before the insemination is to take place.

## What About Future Pregnancies?

Many women who choose donor insemination would like the option to use the same donor for further pregnancies. If this is a consideration, you might wish to purchase extra samples from the donor sperm bank to store in the VFC cryobank. These sperm samples would then be available for you to use whenever you are ready. There is no limit to the number of pregnancies that you can attempt.

### Please read on for detailed information about Cytomegalovirus

#### CMV AND DONOR INSEMINATION

CMV is a virus that most adults have been exposed to and have immunity to. In healthy adults and children it produces mild cold or flu like symptoms for 1-2 weeks. Uncommonly it can cause a mild hepatitis ( inflammation of the liver) If a woman who has never had CMV becomes infected with the virus during pregnancy, the child is at risk for developing severe medical problems, such as mental retardation, deafness and seizures. You can be tested to determine if you have been exposed to CMV. If you are CMV negative (meaning that you do not have antibodies against CMV), you should consider restricting your selections to CMV negative donors, to prevent the small chance of developing CMV during pregnancy and passing it the developing child. Information on the CMV status of all donors is available on their summary profile.

## **DETAILED QUESTIONS AND ANSWERS REGARDING CMV**

### **WHAT IS CMV?**

Cytomegalovirus, commonly called CMV, is a member of the herpes virus family that includes chicken pox, cold sores, and infectious mononucleosis (mono). The virus is carried by people and is not associated with food, water or animals. Most individuals are exposed to CMV in childhood and have a mild infection similar to a typical cold, while the immune system develops antibodies to fight the infection. The virus remains alive, but becomes dormant, or hides, inside certain cells for the rest of the person's lifetime. Approximately 50-85% of adults will test CMV positive, confirming exposure. In developing countries, or areas of poor sanitation, this number is almost 100%. However, in a small number of individuals, the virus may reactivate and be transmitted in bodily fluids, such as semen. This is very common in people with immune suppression or individuals that have only recently been exposed to CMV.

### **WHAT IS THE DIFFERENCE BETWEEN CMV IgG AND IgM TESTS ?**

The CMV IgG test indicates previous exposure to CMV. The CMV IgM test indicates a recent or current infection, in which case all vials are discarded.

### **HOW IS CMV SPREAD?**

CMV is spread person-to-person by direct exposure to urine, saliva, mucus, cervical secretions, semen, blood, or breast milk. There is no vaccine for CMV. Daycare centers are one of the more common exposure settings, where children can transmit the virus through contact with each other's bodily fluids (infected children carry the virus in their respiratory and urinary tracts for long periods of time). Adults can also be infected through unprotected sexual contact. The production of virus may take place intermittently, without any detectable signs, and without causing symptoms. An infected mother can transmit CMV to her fetus either through the placenta or through exposure to her infected cervical secretions during birth.

### **WHAT ARE THE SYMPTOMS OF CMV INFECTION?**

The symptoms are usually mild, non-specific, hard to detect, and resolve in 1-2 weeks. An adult may not even realize that they have an infection. Some people develop a 'flu-like' illness with swollen lymph nodes or they may complain of feeling tired. As mentioned above, it can also sometimes cause a hepatitis, which may result in nausea, jaundice and fatigue. Children may have a runny nose. In people with impaired immune systems may develop a serious illness. Pregnant women who are infected for the first time during pregnancy usually recover completely with few or no symptoms. The unborn baby is at risk for congenital infection.

**WHAT ARE THE SYMPTOMS OF A CONGENITAL CMV INFECTION?**

If a pregnant woman has never been exposed to CMV and has her first infection during pregnancy, there is a chance that the fetus could become infected before the mother's body can eliminate the virus. Transmission to the fetus only occurs in a third of women who have a primary infection during pregnancy. Congenital CMV is the most common congenital infection in the US. Twenty percent of babies born with an infection develop medical complications over the first few years of life. Those symptoms can include low birth weight, deafness, blindness, mental retardation, small head, seizures, jaundice, brittle teeth and damage to the liver and spleen. While a child may develop some of the above symptoms, no baby develops all the symptoms and some infants have no symptoms at all.

**HOW DO SPERM BANKS SCREEN DONORS?**

Testing for antibody to CMV is performed on all donors. If the antibody test is negative or not detectable, the donor is presumed not to have been previously infected. Most Sperm banks will then perform a new test every three months to monitor for new infections. If the donor tests positive for antibodies, additional testing is performed to determine if the positive antibody test represents a recent or old infection. If a recent infection cannot be ruled out, all suspect semen vials are discarded.

**IS IT SAFE TO USE A DONOR WHO IS POSITIVE FOR CMV?**

You may wish to consult with your own medical practitioner as to whether he or she feels it is acceptable to use a donor who is positive for CMV IgG antibodies. In most cases a donor who is positive for CMV IgG is non infectious. Furthermore, most Sperm banks have a six-month quarantine policy ensuring that should a donor test positive for a current or recent infection, all potentially infectious samples are not released.

**WHAT DONORS MAY I USE IF I AM CMV NEGATIVE?**

We would recommend that you use a CMV negative donor. However, you may use a CMV positive donor, if you wish. While the risk is not zero, the chance of transmitting congenital CMV to a developing fetus from semen used at the time of conception is extremely low. Based upon my experience and the published literature, we do not believe that a healthy donor who is antibody positive due to an old CMV infection poses any meaningful risk of transmitting CMV. This is, however, a medical issue that you should discuss with your physician.

**Summary of the process when planning Donor Insemination:**

A consultation with Dr.Hudson (or other MD at VFC)

Examination and ultrasound at VFC.

To check uterus and ovaries are healthy.The clinical examination will include an internal exam ( including a Pap smear and cervical cultures if necessary) plus an endovaginal ultrasound to check your uterus and ovaries.

Blood tests to check that

- a) Your hormone levels are all normal
- b) To check your ovarian reserve.
- c) An infectious disease screen.

Meeting with our reproductive Psychologist Dr.Eric Ochs. ( Phone number:250 516 5414) You call him directly to arrange this. His consult fee is \$150.00)

Order your sperm from one of the sperm banks. When doing so – you need to coordinate with our laboratory staff at VFC. Before ordering please contact one of the following:

Lab Director Lisa Cowan at: [lcowan@victoriafertility.com](mailto:lcowan@victoriafertility.com)

Embryologist Jullin Fjeldstad: [jfjeldstad@victoriafertility.com](mailto:jfjeldstad@victoriafertility.com)

Before ordering your sperm you need to know whether or not you are immune to cytomegalovirus so you can order appropriately order suitable CMV positive or negative sperm.

Complete and sign the patient information sheet required by Health Canada. Secondly you need to sign the “Sperm Banking Agreement” with the Victoria fertility center. We need to have this information before we can accept your sperm for cryopreservation. This required documentation is attached at the end of this form. Please download it and fax it to us or bring it in to VFC.

The decision as to whether or not have a hysterosalpingogram should be made by you and the MD you see at VFC.

Once we have your sperm on site you are ready to go. You should test your urine for an LH surge – and then call the clinic to arrange the DI for the following day.

## **Hysterosalpingogram.(HSG)**

The decision whether or not to have an HSG is entirely yours. We normally recommend it - only because doing DIs is an expensive business, and it is reassuring to know that your tubes are open and healthy prior to starting.

Please read below a detailed explanation of the procedure:

A hysterosalpingogram is a diagnostic x-ray that allows a study of your uterus and fallopian tubes.

### Why is a HSG necessary?

It is done primarily to confirm that your fallopian tubes are open. However it also gives us information about the uterine cavity. It may for instance identify the presence of polyps or fibroids protruding in to the uterine cavity. These may potentially interfere with fertility.

### Where is the HSG done – and by whom?

It is performed in an X ray department (usually within a hospital or clinic) by a radiologist.

### When is the procedure done?

The timing of this test is very important. It needs to be performed early on in the menstrual cycle before the lining of the uterus becomes too thick and also before ovulation – to make sure that this test is not done at a time that you may conceivably be pregnant.

Therefore, the best time to do the HSG is before day 12 of your menstrual cycle. The HSG cannot be done during your period. So there is only a small window of time every month that it can be done. (i.e. after your period is complete – but preferably before day 12 of your cycle)

### How is the HSG booked?

If you have been asked to have an HSG done, you should call VFC on the first day of your period. You should advise when you expect your period to stop (how long your flow usually lasts), and we will be able to arrange for the HSG to be done in that important window between the end of your flow and before Day 12 of your cycle.

### What happens if the X ray department cannot accommodate an HSG during this window of time?

If there is a problem in scheduling the procedure during this important window of time, we may ask you to take the birth control pill for 2-3 weeks. The pill should be started on the third day of your period.

The birth control pill will suppress ovulation and also keep the uterine lining thin. It is a perfect time to do an HSG – because there is no risk of pregnancy, the lining of the uterus is thin, and the risk of infection may be lower.

The HSG can then be scheduled at any time while you are on the pill. After your HSG has been done you can stop the pill – and you will have a period.

This maneuver avoids the frustration of potentially waiting month after month until the HSG can be done.

Will taking the pill this way do me any harm?

There are certain contra indications to taking the pill – such as a history of pill induced migraines, previous thrombosis, strong family history of thrombosis, estrogen sensitive cancer e.g. Breast cancer. Generally speaking if there is no contra indication to your becoming pregnant, there will be no problem taking the pill for a few weeks. The advantages are that it allows easier scheduling and secondly may reduce the risk of an infection from the procedure.

Is an HSG painful?

The procedure itself may be a little uncomfortable. For this reason, you may want to take someone with you to the hospital. We would also suggest that you take two Advil or Tylenol approximately one hour before the procedure. You should be reassured that most patients have only minor cramping.

What are the risks of the procedure?

There is a small risk of infection, and for this reason it is important that you take prophylactic antibiotics. A 5- 7 day course of doxycycline (tetracycline) will be prescribed to you. Once you know the day of your procedure, you should start taking this antibiotic twice a day starting the day before. This is a commonly prescribed antibiotic, and side effects are uncommon. However, some side effects that may occur include diarrhea, nausea, and a skin rash if you go out in the sun. (Photosensitivity) It is important that you continue the antibiotics for the full five days. Apart from a small risk of infection, there is also a small risk of a reaction to the dye. It is important that you tell the radiologist if you have any specific allergies. Allergies that would be important to mention would be to shellfish, iodine, or a previous reaction to intravenous radiological contrast.

**There is a drug commonly used in infertility called Metformin. It is very important that if you are on Metformin, you stop taking it the day before the procedure, and only restart it 5 days later. (You should NOT take metformin for the few days following an HSG – this may be potentially dangerous)**

What is the process?

The hysterosalpingogram itself is done by injecting dye through your cervix, into your uterus, and out through your fallopian tubes. During the procedure, the radiologist will insert a small speculum into your vagina, a bit like having a pap smear. A very small catheter will then be passed through your cervix and the dye injected. X-rays will then be taken.

Are there other benefits to an HSG?

As mentioned above, this study is designed to tell us about the inside of your uterus and also to confirm whether your fallopian tubes are patent (open) and normal. However, although it is essentially a diagnostic test, there is also a beneficial effect. The contrast dye that is used has some detergent-like actions and helps flush out debris and bacteria from inside the fallopian tubes, and does indeed result in an improved fertility rate for the first few months afterwards.

What do I do after the test?

After the test, if you experience any pain, malodorous discharge, or fever, you should call the Victoria Fertility Centre right away. Please do not forget to complete the course of antibiotics that have been prescribed.

You should schedule an appointment to come in to VFC to discuss this and other test results with us.

If I do not take the birth control pill for the HSG, can I try and conceive with this cycle?

Yes you can. It is fine to continue to try and conceive while you are finishing your course of antibiotics.

What does it mean if one or both tubes are obstructed?

The results will be discussed with you. It is important to remember that the uterus is a muscle, and will cramp when dye is injected. This cramping may “pinch” off the entrance to the fallopian tube – and make it appear that one or both tubes are obstructed. This would be a false positive result. If the tubes appear to be blocked close to the uterus, we would need to do a Laparoscopy to look at the tubes in more detail. This is a procedure done under general anaesthetic, so is not generally the “first line” investigation.

If the tubes are swollen and obstructed (hydrosalpinges) – it would indicate that the tubes have been previously damaged (usually by infection) The management would depend on a variety of other factors-, which would be discussed with you at VFC.

## **Ovulation predictor testing**

### Explanation of Normal Menstrual cycle

During a normal menstrual cycle a woman will usually ovulate just once. Ovulation is controlled by the pituitary gland in the brain.

Eggs grow in the ovaries – in little capsules of fluid called follicles. A follicle is therefore a small cyst which contains an egg. As the follicle grows – the egg matures. During this process the follicle releases a hormone called estrogen. The pituitary gland in the brain monitors the levels of estrogen. When the estrogen level reaches a certain threshold – the brain realizes that the egg is mature. At this stage the pituitary gland in the brain “triggers” ovulation.

The pituitary gland in the brain does this by releasing a hormone called LH (luteinizing hormone) LH triggers ovulation. This is called an LH surge

The LH surge causes the ovary to release an egg (ovulation) about 24 – 36 hours later. We are able to detect the presence of this LH in your urine by using an LH predictor kit.

So by testing your urine every day, we are able to predict when you are going to ovulate. There are a number of Ovulation predictor kits available. Kits which are readily available at most pharmacies include First Response, Clearplan, Ovuquick etc.

Some of these kits can be quite expensive. You can also order Ovulation predictor kits very cheaply on line from [www.saveontests.com](http://www.saveontests.com). I suggest you buy the cassettes rather than the strips.

Ovulation will normally occur about 14 days before your next period. So if you have a 28 day cycle – you should ovulate around day 14. This would mean that you would have an LH surge on day 13. If you have a 24 day cycle – we would expect you to ovulate around day 10. This would mean that you would have an LH surge on Day 9.

In order to detect Ovulation – you should start testing your urine at least 2 days before you expect to have an LH surge. For most people – if you start testing on about day 10 or 11 you will not miss the surge.

### Instructions for testing.

It is always best to test at about midday. Please follow the instructions below.

1. After breakfast – please empty your bladder and do not have anything further to drink until you do your test. This will allow your urine to be concentrated and avoid the risk of “missing” the LH surge due to dilute urine.
2. Empty your bladder again at about 10 am.
3. At around midday test your urine – having not voided for at least 2 hours.
4. Follow the instructions from the test kit

