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Donor insemination is the process of intrauterine insemination with donor sperm to achieve a pregnancy. It involves placement of previously frozen, anonymously donated sperm into the uterus around the time of ovulation. It is a treatment option for couples with severe sperm abnormalities or in women who wish to become pregnant but have no male partner.

When is donor insemination used?

- Low sperm number or quality
- Absence of sperm
- Prior vasectomy
- Prior radiation or chemotherapy in the male partner
- Same-sex couples
- Women with no partner who wish to become pregnant
- Male partner carries a hereditary condition which the couple do not wish to pass on

Where does donor sperm come from?

Donor sperm is ordered from sperm banks in Canada (Ontario) which comply with the strict safety and ethics standards set by Health Canada and the Assisted Human Reproduction Act. Potential sperm donors are extensively screened prior to being accepted to donate sperm.

How are sperm donors screened?

- **Infectious disease screening** - Donors are tested for infectious diseases including HIV, hepatitis B and C, syphilis, gonorrhea and chlamydia. They may not be donors if they participate in behaviours which may put them at risk for infectious diseases. If the initial testing is negative, the sperm is held for 180 days and the donor is retested to ensure that no infectious diseases have developed during that time.

Donors are also tested for a virus called cytomegalovirus (CMV). This is a common virus which most individuals have been exposed to. This virus usually causes either no symptoms or a flu-like illness when contracted. Donors are not rejected if they are positive for the virus but this information is available to recipients. A donor who is "CMV positive" has had CMV in the past but is not infectious.

Aurora Reproductive Care

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- **Medical history** - Donors must complete an extensive questionnaire to ensure that the personal and family history is low risk for medical and genetic conditions. They must also undergo a complete physical exam.
- **Sperm quality** - Semen testing is done to ensure that the sperm counts and motility are excellent. Many sperm banks will also guarantee that an adequate number of motile sperm will be present after the specimen is thawed.
- **Other testing** - Other tests which may be available are chromosome testing, cystic fibrosis testing and screening for genetic diseases which are common to the donor's ethnic background.

What else will I know about my donor?

Other details available to help to select a donor are ethnic background, eye colour, hair colour, height, weight, education and employment. Blood type and CMV status are also available. Additional information such as photos and personal statements may also be available.

How do I select a donor?

- **Donor characteristics** - Online catalogues are available to select a donor with the physical traits you are looking for.
- **CMV status** - The sperm recipient will be tested for past exposure to CMV. If she is CMV positive, she may choose a donor who is CMV positive or negative. If she is CMV negative, she should choose a CMV negative donor. This is recommended because contracting CMV in early pregnancy can cause birth defects.
- **Blood type** - The most important factor in selection of blood type is the Rh status ("positive" or "negative" blood type). If the recipient is Rh -, she should try to choose a donor who is also Rh -. If her donor is Rh+, the baby could also be Rh+ and the mother could develop antibodies against the baby's blood while she is pregnant, which may cause complications. There are treatments in pregnancy that can reduce the risk of this occurring. An Rh+ woman can have a donor who is either Rh+ or Rh-.
- The ABO status is not as important medically but it has implications if you wish to have a child with the same blood type if conceived by your partner (if you do not plan to disclose to the child that he or she was conceived by donor sperm). This may limit your choice of donors. Information on matching blood types is available on the sperm bank websites.

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Is this process confidential?

Your identity will be known but protected by Aurora and by the sperm bank. Sperm donors are anonymous and cannot be contacted by you. The sperm donor does not know your identity. Some sperm banks have “ID Consent” or “Open ID” donors. These donors register basic contact information with the sperm bank. When the child turns 18, he or she may obtain this information and contact the donor if they wish.

Who should we tell?

This is a very personal decision that requires a great deal of thought and discussion. Often, it helps to discuss this with a counsellor as they may explore issues that you have not considered. A list of counsellors with experience in reproductive health is available through Aurora. There are also many books written on sperm donation which cover common issues and questions surrounding sperm donation and disclosure.

How is a donor insemination cycle done?

The woman and her partner (if she has one) must undergo infectious disease screening, CMV testing and blood typing. The physician may also recommend additional testing such as hormone testing or a test to ensure the uterus is normal and the tubes are open.

Insemination is done around the time of ovulation. Ovulation is detected by ovulation predictor kits (urine LH kits) or by vaginal ultrasound.

The sperm is thawed in the lab and “washed,” or rinsed of the chemicals that protect the sperm during the freezing process. When you come in for insemination, the doctor or nurse will place a speculum in the vagina (like when you have a Pap smear.) The thawed, washed sperm is drawn into a very thin tube, or “catheter” with a syringe on the end. The catheter is passed through the cervix and the specimen is gently injected into the uterus. This procedure is relatively painless.

If you have irregular cycles or if you have done previous DI cycles and have not become pregnant, your doctor may recommend fertility medications as well.

What are the chances of pregnancy?

The chance of getting pregnant depends on a number of factors including the woman’s age, the presence of other conditions which may reduce fertility and the sperm banks’ own pregnancy rates.

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In general, a woman under 35 has a 15-20% chance of getting pregnant from each DI cycle. This translates to a 60% chance over 6 cycles. This rate is close to the chance that a couple with no fertility problems has of getting pregnant on their own. The chance of pregnancy, as in all fertility treatments, decreases as the woman ages.

If you have not conceived after 3 DI cycles, you may wish to followup with your doctor to discuss whether further testing or treatments are warranted.

How much does DI cost?

- DI specimen (~\$900-1,100/unit)
- Courier fees (variable ~\$200/shipment)
- Donor insemination lab fees (\$550/cycle) (\$650 for out of province health coverage)
- Ovulation predictor kit (~\$30-60)
- Fertility-enhancing medications may be required as well.

How do I order sperm?

DI specimens are ordered directly from the sperm bank by the woman or couple. The Aurora Andrology lab receives the specimen. Specimens should be ordered several weeks before the cycle is planned and should arrive at the lab at least 2 weeks before the cycle start.

You will be asked whether you want to order “washed” or “unwashed” specimens - we recommend that you order washed specimens. Unwashed specimens are also acceptable.

Please notify the Andrology lab and the sperm bank if you have any allergies, particularly to antibiotics.

Discuss the number of straws to order with your doctor. The cost of shipping is the same regardless of the number of specimens shipped so you may wish to order enough for 3-4 cycles.

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Sperm Bank Contact Information

- Can-Am Cryoservices (Hamilton) - www.canamcryo.com
- Repromed Limited (Toronto) - www.repromed.ca
- Cryobank Canada - www.canadacryobank.com

Additional Resources

- Helping The Stork - The Choices and Challenges of Donor Insemination, by Carol Frost Vercollone, Heidi Moss & Robert Moss

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