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## **CRYOPRESERVATION OF SPERM**

**What is Cryopreservation (freezing) of sperm?** Sperm freezing is a method to store live sperm for extended periods of time so that they may be available for insemination and possible pregnancy at some future date. Sperm are frozen in a special protecting media and can be stored in a liquid nitrogen freezer in small plastic vials for many years. When needed, the sperm samples can be thawed and used for artificial insemination in a doctor's office.

**What are the indications for freezing sperm?** Sperm freezing is often performed before surgery or other treatment which may effect male fertility. Men who are undergoing vasectomy, other genital tract surgery, or cancer treatment such as chemotherapy or radiation may store frozen sperm for possible use in the future. Certain infertility conditions and prolonged absence from home are additional examples often recommended for storing a frozen sperm sample for backup in case a man has difficulty collecting an adequate sample on the day of the procedure.

**How is sperm freezing done?** A sperm sample is first analyzed for sperm count and motility (movement) and then frozen as a trial specimen. The trial sample is thawed and examined again for sperm count and motility. The ability of sperm to survive the freezing process varies from person to person and the trial freeze/thaw procedure will predict if sperm freezing is practical for a specific man. A consult appointment is then performed with a physician to discuss the sperm freezing program and the results of the initial specimen and the freeze/thaw trial. A sperm freezing contract is completed at this visit. Additional sperm samples for freezing are then collected and processed for freezing and storage.

**What effect does freezing have on sperm?** Freezing and thawing usually results in the loss of from 50% to 90% of the motile sperm in any sample. In addition, previously-frozen sperm are not as good at swimming or long-term survival as fresh sperm. In many studies, the pregnancy rates after sperm freezing are lower than with insemination of fresh sperm. The survival of sperm and the success in achieving pregnancy after sperm freezing are directly dependent on the quality (sperm count and motility) of the sperm sample before freezing. Recent studies have suggested that pregnancy rates with frozen sperm can be significantly improved with the use of sperm washing and intrauterine insemination.

**How long can sperm be kept frozen?** Frozen sperm samples can be stored in a liquid nitrogen freezer almost indefinitely. Although sperm are thought to undergo very slow degeneration after prolonged frozen storage, successful pregnancy has been reported with sperm frozen for over twenty years.

**How many frozen specimens can be obtained from one fresh sperm sample?** In general, there are usually only enough sperm for one or two frozen sample inseminations from each fresh sperm sample. The number of frozen specimens needed for thawing and insemination depends on the sperm count, motility, and freezing survival.

**How many fresh sperm samples should be collected for freezing?** We recommend collecting at least enough sperm samples for freezing to allow six trials of insemination. For most men, this would be about six fresh samples. This is a practical number to permit a reasonable chance of success if the specimens are used in the future. Many men choose to freeze as many as twelve or more samples to be sure of adequate numbers of sperm.

**How often can sperm samples be collected for freezing?** Sperm counts are maximum at 48 hours between collections. Specimens collected at 24 hour intervals will usually show significantly lower sperm counts and motility. We recommend 2-5 days between each sample for freezing if at all possible in order to freeze the best sperm specimens. Ideally, a minimum of 45-60 days should be allowed before medical or surgical treatment so that adequate time is available to complete the sperm freezing process.

**Is artificial insemination with frozen sperm always successful?** There is no guarantee that artificial insemination with frozen/thawed sperm will result in successful pregnancy, even if a man has fathered children in the past. Many factors will influence the chances of pregnancy after sperm freezing, including the fertility of the female partner, the ability of a man's sperm to survive the freezing process, and others. Timing and technique of artificial insemination are also important factors.

**How can I arrange to use the frozen sperm samples if I need them?** The frozen sperm samples will be stored in The Fertility Center of Oregon Andrology Lab liquid nitrogen freezer until you terminate the sperm freezing contract or send us written instructions for their use of transport. You will be required to pay an annual storage fee as long as you wish to continue to store the specimens with the lab.

**Are there any other risks with sperm freezing?** There are many complications which can occur in pregnancy such as miscarriages, ectopic (tubal) pregnancy, medical problems, premature birth, and birth defects, among others. Studies to date indicate that these risks appear to be the same for pregnancies with fresh or frozen sperm.

Frozen sperm samples are stored in a liquid nitrogen freezer which is closely monitored; however, natural or other disasters may rarely occur which could result in damage or loss of frozen sperm samples. Although The Fertility of Oregon Andrology Lab will attempt to control the storage of the specimen as well as possible, it is never possible to eliminate all risks to specimens.

**Can frozen sperm samples be used without permission of the donor?** The Fertility Center of Oregon Andrology Lab will not use your frozen samples for insemination without your written permission. If you terminate the sperm freezing contract at any time, your frozen sperm specimens will be destroyed by the lab according to normal policy and procedure.