



**FERTILITY
PRESERVATION IN
YOUNG MEN AND
BOYS AFFLICTED
WITH CANCER**

**ISAR FERTILITY PRESERVATION
SPECIAL INTEREST GROUP**

What are the most common cancers in this group?

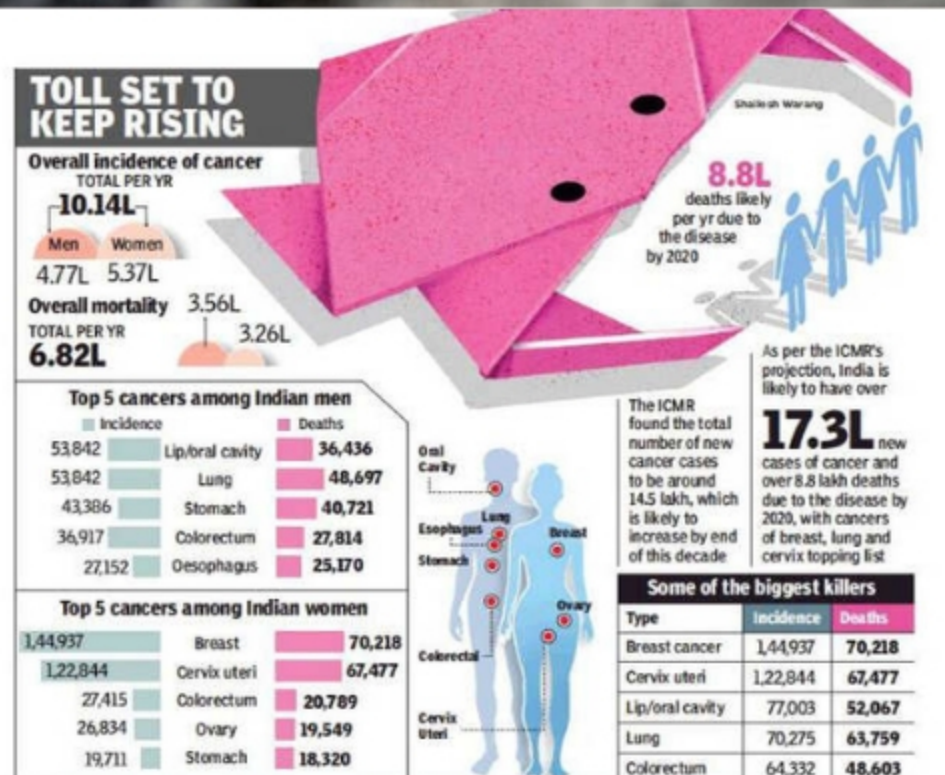
The most common cancer among men is that of the Lungs followed by the Colorectal, and then the Stomach. However, in young men the testicular cancer followed by Hodgkin's Lymphoma and then the leukemias are common. Chemotherapy and radiotherapy may result in temporary, long term or permanent gonadal damage and hence can have a significant impact on a patient's ability to have his own biological offspring.

What is the effect of radiation on the testes?

The testes is highly sensitive to the effects of radiation with markedly reduced number of sperm cells. There is a decline of sperm cells starting from about 2 weeks after having started radiation treatment to a dramatic decrease in ejaculated sperm counts at about 10 weeks. A 10 to 100-fold decline in sperm count can occur within 1 – 2 months. Not only is there a decline in sperm counts, but there is also genetic damage to the sperm as well.

What is the effect of chemotherapy in males?

Chemotherapeutic effects depend upon the type and the dosage of drugs which are used for the cancer treatment. Patients may be azoospermic (a condition where the sperm counts come down to zero) for several years and then sometimes recover spermatogenesis. Recovery to normal counts of sperm begin at about 1 year after the chemotherapy has ended; but 5 years are required for 70% of the patients to recover. However, some drugs are very toxic to sperm cells and these fall into the category of alkylating agents and cisplatin. Hence, efforts should be made to start and complete fertility preservation without causing any delay in the treatment of cancer. Patients should be advised that they have to store sperm before they start even a single course of chemotherapy because of the high risk of genetic damage to the sperm cells.



Cryopreservation of male gametes

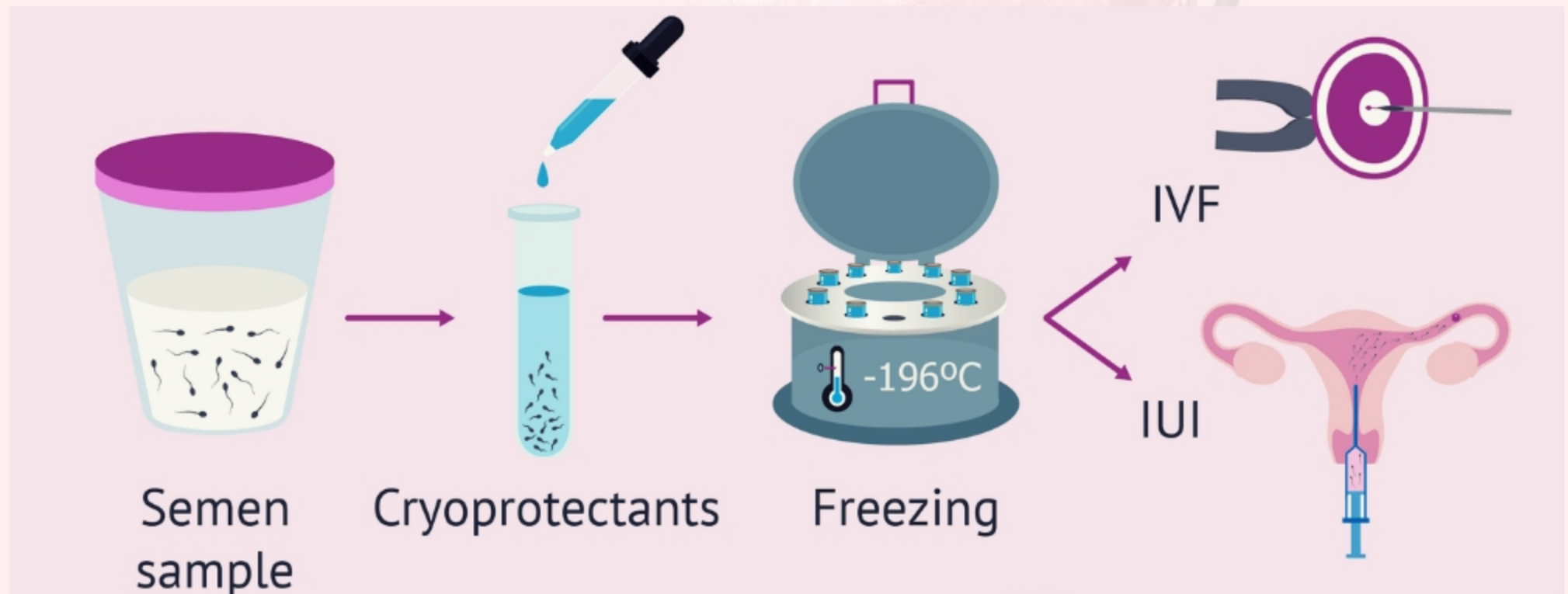
Cryopreservation of spermatozoa obtained via ejaculation or surgical sperm retrieval is only the established method of fertility preservation in men.

If the sperm counts are normal, 1 –2 samples may be frozen; but if the sperm counts are suboptimal, then preferably 2 – 3 samples of sperm should be stored.

When ejaculation is not possible, penile vibratory stimulation or electro ejaculation can be performed under anaesthesia or the sperm may be surgically removed from the testes (TESE).

In pre-pubertal boys, cryopreservation of immature testicular tissue as a cell suspension or whole testicular tissue, followed by autografting is an option; but it is considered highly experimental and should only be performed under research settings.

The problem with pre-pubertal boys is that there should be a consent from the child as well as the parents. The parents should be completely informed about the options of sperm preservation and the problems with the cancer treatment. These should be clear guidelines as to what to do with the sperm in case of demise of the patient.



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