

Fertility & Reproductive Health Panel

MALE FERTILITY after CANCER

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Risks to Male Fertility due to Cancer Treatment

- Irradiation
- Chemo drugs
 - See list at cancer.org treatments & support
- Surgery
 - Testis, prostate, bladder, pelvic, retroperitoneal lymph nodes
- Hormones
 - Testosterone, Anti-androgens, GnRH antagonists, etc.

Risk of No Sperm after Treatment

RISK	Treatment	Common Usage
HIGH (Prolonged Loss of sperm)	Total Body Irradiation TBI	Bone marrow/Stem Cell Transpl
	Testicular radiation >2.5 Gy	Testis Ca, ALL, NHL
	Testicular radiation (boys) ≥6 Gy	ALL, NHL, sarcoma, germ cell
	Procarbazine protocols*	Hodgkin lymphoma
	Alkylating agents** for transplant	BMT / SCT
	Alkylating agent + TBI, pelvic or testis irradiation	(many)
	Cyclophosphamide >7.5 g/m ²	Sarcoma, NHL, ALL, neuroblast.
	Cranial radiation ≥40 Gy	Brain tumor

*Procarbazine protocols include COPP, MOPP, MVPP, ChIVPP, ChIVPP/EVA, MOPP/ABVD, COPP/ABVD

**Alkylating agents include cyclophosphamide, nitrogen mustard, procarbazine.

Other high-risk treatments include busulfan, carboplatin, carmustine, chlorambucil, cisplatin, cytarabine, Ifosfamide, lomustine, melphalan (From cancer.org).

Risk of No Sperm after Treatment

RISK	Treatment	Common Usage
MODERATE (Loss of sperm not common)	BEP* x 2.4 cycles	Testis Ca
	Cisplatin <400 mg/m ²	Testis Ca
	Carboplatin ≤2 g/m ²	Testis Ca
	Testis irradiation 1-6 Gy	Wilms, neuroblastoma
LOW (Temporary loss of sperm)	—	—
	Non-alkylating chemo**	Hodgkin Lymphoma, NHL
	Testis irradiation 0.2 – 0.7 Gy	Testis Ca

*Bleomycin, etoposide, cisplatin.

** ABVD, OEPA, NOVP, CHOP, COP.

Is there a risk that my sperm may cause a defect in my child?

No increased risk found in numerous studies

- Oncology 12:557, 1998
- Eur J Cancer 27:1385, 1991
- Med Pediatr Oncol 22:33, 1994
- Am J Hum Genet 70:1069, 2002
- Arch Pediatr Adolesc Med 163:887, 2009
- Int J Cancer 126:1196, 2010

Options for Males

Before Treatment Options	Potential Use	Dis-advantages	Status
Sperm Freezing (Semen/Testis)	IUI, IVF	Limited Sperm	Standard
Prepub Testicular Tissue Freezing	IVF	Few sperm Surgery	Experimental

After Treatment Options	Fresh Sperm	Frozen Sperm	Status
Diagnostic Semen Analysis	✓		Standard
Natural Conception	✓		Standard
IntraUterine Insemination IUI	✓	✓	Standard
In Vitro Fertilization IVF	✓	✓	Standard
Donor sperm IUI or IVF		✓	Standard
Adoption			Standard

Male Fertility after Cancer

- Did you freeze sperm before cancer treatment?
 - YES: How many vials? What quality (IUI vs IVF)? Where stored? Where to use them?
 - NO: Sperm production may have returned; get checked!
- Get a semen analysis when you are ready.
 - Type of treatment and Time post therapy are critical
- Make an appointment with a reproductive urologist, or with your partner's fertility specialist.
- You have options