

Fertility Risks for Men

Assessing how certain treatments could affect future fertility is an important part of cancer care. This chart represents a compilation of clinical experience and published data about the effect of common cancer treatments on sperm production. See [LIVESTRONG.org/Fertility](https://www.livestrong.org/Fertility) for more resources.

	CANCER TREATMENT PROTOCOL	PATIENT AND DOSE FACTORS	COMMON USAGE	FERTILITY PLANNING CONSIDERATIONS
HIGH RISK	Any alkylating agent (e.g., busulfan, carmustine, cyclophosphamide, ifosfamide, lomustine, melphalan, procarbazine) + total body irradiation		Conditioning for HSCT for leukemias, lymphomas, myelomas, Ewing's sarcoma, neuroblastoma	Prolonged/permanent azoospermia is common after treatment. Any treatments containing high doses of alkylating agents and/or radiation to the testes, pelvis or hypothalamic axis present the highest level of risk for gonadal impact. Patients should be counseled about fertility preservation prior to treatment.
	Any alkylating agent + pelvic or testicular radiation		Sarcomas, testicular	
	Total cyclophosphamide	>7.5 g/m ²	Multiple cancers and conditioning for HSCT	
	Protocols containing procarbazine: MOPP BEACOPP	> 3 cycles > 6 cycles	Hodgkin lymphoma	
	Protocols containing temozolomide or BCNU + cranial radiation		Brain tumor	
	Testicular radiation	> 2.5 Gy in men > 6 Gy in boys	Testicular, ALL, NHL, sarcoma, germ cell tumors	
	Total body irradiation (TBI) doses		HSCT	
INTERMEDIATE RISK	Cranial radiation	>40 Gy	Brain tumor	Prolonged/permanent azoospermia is not common after treatment, but can occur. Lower levels of alkylating agents and/or radiation to the testes, pelvis or hypothalamic axis reduce but do not eliminate the risk of sterility. Patients should be counseled about fertility preservation prior to treatment.
	Protocols containing heavy metals: BEP total cisplatin total carboplatin	2-4 cycles >400 mg/m ² >2 g/m ²	Testicular	
	Testicular radiation (due to scatter)	1-6 Gy	Wilm's tumor, neuroblastoma	
LOWER RISK	Protocols containing nonalkylating agents (e.g., ABVD, CHOP, COP; multiagent therapies for leukemia)		Hodgkin lymphoma, NHL, leukemia	Treatments typically cause only temporary damage to sperm production. While treatment itself is unlikely to cause sterility, patients may want to consider fertility preservation due to potential for relapse and/or additional treatment.
	Testicular radiation	<.2 - .7 Gy	Testicular	
	Anthracycline + cytarabine		AML	
	Multi-agent therapies using vincristine		Leukemia, lymphoma, lung	
VERY LOW/NO RISK	Radioactive iodine		Thyroid	Patients should be counseled regarding the lack of conclusive data about the effect of these drugs on sperm production; fertility preservation should be discussed.
	Testicular radiation (due to scatter)	<.2 Gy	Multiple cancers	
UNKNOWN	Monoclonal antibodies, e.g., bevacizumab (Avastin), cetuximab (Erbix)		Colon, non-small cell lung, head and neck	Patients should be counseled regarding the lack of conclusive data about the effect of these drugs on sperm production; fertility preservation should be discussed.
	Tyrosine kinase inhibitors, e.g., erlotinib (Tarceva), imatinib (Gleevec)		Non-small cell lung, pancreatic, CML, GIST	

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