FDA-Approved Drugs that Can Negatively Affect Sperm

Drug category*	Generic name of drug	Adverse impact on human spermatogenesis	Supported/refuted by PubMed publications**
Analgesic	Methadone hydrochloride	Decrease in sperm motility and seminal vesicle secretions, abnormal sperm morphology	Supported in humans [12,13]
	Pregabalin	Epididymitis (rare)	Refuted in humans [14]
	Gabapentin	Epididymitis (rare)	Refuted in rats [15], no data for humans
Anti-arrhythmic agent	Amiodarone hydrochloride	Epididymitis (rare)	Supported in rats [16], no data for humans
Anti-bacterial agent	Lomefloxacin hydrochloride	Epididymitis, orchitis (<1% of patients)	**No data published for animals or humans**
	Nitrofurantoin	Spermatogenic arrest/decreased sperm count (high doses)	Supported in humans [17]
	Dapsone	Orchitis, male infertility	Supported in rats [18], no data in humans
Anticonvulsant	Lamotrigine	Epididymitis (rare)	Supported in humans [19]
Antihypertensive agent	Nifedipine	Reversible reduction in ability to fertilize ova	Supported in humans [23]
Anti-infective agent	Voriconazole	Epididymitis (<2% of all patients)	**No data published for animals or humans**
	Methylprednisolone/prednisone	Changes in the motility and number of spermatozoa	No specific data published for methylprednisone, prednisone is supported in humans [30]
	Sulfasalazine	Reversible oligozoospermia and infertility	Supported in humans [31]
	Triamcinolone hexacetonide	Changes in the motility and number of spermatozoa	**No data published for animals or humans**
Antineoplastic agent	Busulfan	Damage to spermatozoa and testicular tissue, azoospermia, testicular atrophy	Supported in humans [32]
	Chlorambucil	Azoospermia (prolonged or permanent)	Supported in humans [33]
	Cyclophosphamide	Interferes with spermatogenesis, testicular atrophy, azoospermia, oligozoospermia	Supported in humans [34]
	Dabrafenib mesylate	Impaired spermatogenesis, decreased sperm count	**No data published for animals or humans**
	Degarelix	Testicular atrophy	**No data published for animals or humans**
	Fludarabine phosphate	Damage to spermatozoa and testicular tissue	Supported in humans [35]
	Methotrexate sodium	Oligozoospermia (reversible)	**Supported for rodents [38,39], conflicting data for humans ([40](-) vs. [41](+))**
	Procarbazine hydrochloride	Azoospermia	**Supported in mice [42], unclear for humans (all trials have used combination therapy [43])**
	Triptorelin pamoate	Testicular atrophy	Supported in humans [44]
	Vinblastine sulfate	Azoospermia	**Supported in rats [45] and *in vitro* for humans [46]**
	Vinorelbine tartrate	Damage to spermatozoa	**No data published in animals or humans**
	Thalidomide	Orchitis	Supported in rabbits [47], no data for humans
Anti-Parkinson agent	Pramipexole dihydrochloride	Epididymitis, orchitis	**No data published for animals or humans**
Antipsychotic agent	Quetiapine fumarate	Orchitis (infrequent)	**No data published for animals or humans**

Anti-rejection drug	Everolimus	Azoospermia or oligozoospermia (~1% of patients)	**No data published for animals or humans**
Antiviral agent	Delavirdine mesylate	Hematospermia, epididymitis	**No data published for animals or humans**
	Ganciclovir/ganciclovir sodium	Testicular hypotrophy, aspermatogenesis (dose-dependent)	Supported in rats [48], no data in humans
	Valganciclovir	Inhibition of spermatogenesis	**No specific data published, but is expected to result in the same effects as ganciclovir**
Cardiovascular agent	Bosentan	Decreased sperm count	**No data published for animals or humans**
Hormones, hormone substitutes and hormone antagonists	Danazol	Decreased spermatogenesis, abnormalities in semen volume, viscosity, sperm count, and motility	Supported in humans [51]
	Dutasteride	Decreased sperm count, semen volume, and sperm motility	Supported in humans [52]
	Finasteride	Decreased ejaculate volume and total sperm per ejaculation (reversible)	Supported in humans [52]
	Flutamide	Interference with testosterone, decreased sperm count	**Supported in mice [53], supported in combination with other agents in humans [54]**
	Histrelin acetate	Testicular atrophy	**Supported in rats [55] and rhesus monkeys [56], no data for humans**
	Leuprolide acetate	Suppressed testicular steroidogenesis, testicular atrophy	**Supported in humans [57], also may be useful for protecting/restoring fertility following toxic insults [58,59]**
	Methyltestosterone	Oligozoospermia, suppressed spermatogenesis	**Supported in dogs [60] and rats [61], no data for humans**
	Nandrolone decanoate	Inhibition of testicular function, testicular atrophy and oligozoospermia, epididymitis	Supported in humans [62]
	Nilutamide	Testicular atrophy	**No data published for animals or humans**
	Oxandrolone	Suppressed spermatogenesis, inhibition of testicular function, testicular atrophy, oligozoospermia, epididymitis	**Supported in rats [63] and in a human case report [64]**
	Oxymetholone	Inhibition of testicular function, testicular atrophy, oligospermia, decreased seminal volume, epididymitis	**Supported in mice [65] and rats [66], no data for humans**
	Testosterone/testosterone cypionate/testosterone enanthate/testosterone undecanoate	Suppressed spermatogenesis/oligozoospermia, testosterone undecanoate may also cause spermatocele formation	**Supported in humans [67–69], but dose-dependent and variable results**
Immunosuppressant	Sirolimus	Azoospermia (reversible)	Supported in humans [70]
Radioactive compound	Sodium iodide I 131	Impairment of testicular function/transient infertility	Supported in humans [73]

*Some drugs can be classified into multiple categories. They have been classified here on the basis of their most common indication/target.
**Although the drugs noted to support the DailyMed labels were all found to affect some aspect of human spermatogenesis, the effect was not always the same as that listed in the drug label.

Source: ***FDA-approved drugs that have the potential to impair human spermatogenesis or cause more mutations in sperm***
Oncotarget. 2017 Feb 7; 8(6): 10714–10725.