## *Enfuvirtide (Fuzeon, T-20)*

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Enfuvirtide is classified as Food and Drug Administration Pregnancy Category B.

### Animal Studies

*Carcinogenicity*

Enfuvirtide was neither mutagenic nor clastogenic in a series of *in vitro* and animal *in vivo* screening tests. Long-term animal carcinogenicity studies of enfuvirtide have not been conducted.

*Reproduction/Fertility*

Reproductive toxicity has been evaluated in rats and rabbits. Enfuvirtide produced no adverse effects on the fertility of male or female rats at doses up to 30 mg/kg/day administered SQ (a dose that is 1.6 times the maximum recommended adult human daily dose on a body surface area basis).

*Teratogenicity/Adverse Pregnancy Outcomes*

Studies in rats and rabbits have shown no evidence of teratogenicity and no effect on reproductive function with enfuvirtide.[1]

*Placental and Breast Milk Passage*

A study in rats revealed no evidence of harm to the fetus when enfuvirtide was administered in doses up to 27 times the adult human daily dose on a body surface area basis. A separate study in rabbits likewise revealed no harm to the fetus from enfuvirtide doses that were up to 3.2 times the adult human daily dose. Studies of radiolabeled enfuvirtide administered to lactating rats indicated radioactivity in the milk; however, it is not known if this reflected radiolabeled enfuvirtide or metabolites (amino acid and peptide fragments) of enfuvirtide.[1]

### Human Studies in Pregnancy

*Pharmacokinetics*

Data on the use of enfuvirtide during human pregnancy are limited to case reports of a small number of women treated with the drug.[2-9]

*Placental and Breast Milk Passage*

*In vitro* and *in vivo* studies suggest that enfuvirtide does not readily cross the human placenta. Minimal placental passage of enfuvirtide was reported in published studies that included a total of eight peripartum patients and their neonates. These findings were supported by data from an *ex vivo* human placental cotyledon perfusion model.[2,5,10-12]

*Teratogenicity/Adverse Pregnancy Outcomes*

In the Antiretroviral Pregnancy Registry and in a national cohort of pregnant women with HIV infection in Italy, insufficient numbers of first-trimester exposures to enfuvirtide in humans have been monitored to be able to make a risk determination.[13,14]

**Excerpt from Table 8**[a]

| Generic Name (Abbreviation) *Trade Name.* | Formulation | Dosing Recommendations | Use in Pregnancy |
|---|---|---|---|
| **Enfuvirtide** (T-20) *Fuzeon* | T-20 (Fuzeon)<br>*Injectible:*<br>• Supplied as lyophilized powder. Each vial contains 108 mg of T-20; reconstitute with 1 mL of sterile water for injection for SQ delivery of approximately 90 mg/1 mL. | T-20 is indicated for advanced HIV disease and must be used in combination with other ARV drugs to which the patient's virus is susceptible, as determined by resistance testing.<br>Standard Adult Dose:<br>• T-20 90 mg (1 mL) twice daily without regard to meals<br>PK in Pregnancy:<br>• No PK data in human pregnancy.<br>Dosing in Pregnancy:<br>• Insufficient data to make dosing recommendation. | Minimal to low placental transfer to fetus.[b]<br>No data on human teratogenicity. |

[a] Individual ARV drug dosages may need to be adjusted in patients with renal or hepatic insufficiency (for details, see the Adult and Adolescent Guidelines, Appendix B, Table 10).

[b] Placental transfer categories are determined by mean or median cord blood/maternal delivery plasma drug ratio:

**High:** >0.6 **Moderate:** 0.3–0.6 **Low:** <0.3

**Key to Acronyms:** ARV = antiretroviral; PK = pharmacokinetic; SQ = subcutaneous; T-20 = enfuvirtide

## References


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