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Fludeoxyglucose F18

Revised: February 15, 2026.

CASRN: 63503-12-8

Drug Levels and Effects

Summary of Use during Lactation

Information in this record refers to the use of fludeoxyglucose F18 (fluorodeoxyglucose F18; 18F-FDG) as a diagnostic agent. The use of 18F FDG in positron emission tomography (PET) scans may be preferable to other types of scans during breastfeeding because of the low levels and rapid disappearance of radiation.[1]

The amounts of 18F-FDG excreted in breastmilk after a PET scan are below the level of concern for the breastfed infant and most international radiation safety organizations state that no interruption of breastfeeding is necessary.[2-6] However, to follow the principle of keeping exposure "as low as reasonably achievable", some guidelines recommend withholding breastfeeding for 1 to 4 hours,[7,8] and product labeling recommends that mothers pump and discard breastmilk and avoid close (breast) contact with the infant for at least 9 hours after

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the administration of fludeoxyglucose F 18 Injection. Mothers concerned about the level of radioactivity in their milk could ask to have it tested at a nuclear medicine facility at their hospital. When the radioactivity is at a safe level, she may resume breastfeeding. A method for measuring milk radioactivity and determining the time when a mother can safely resume breastfeeding has been published.[9]

Lactation can result in excessive uptake of 18F FDG in the breast.[10] Some authors recommend avoiding 18F FDG imaging of the breasts in women who are lactating to avoid false-positive results.[11] Because of extensive uptake by lactating breasts and the consequent external radiation, nursing mothers should refrain from prolonged close contact with their infants for a period of time.[1,11-13] Some authors suggest that the infant be bottle fed with expressed breastmilk by a third person for 1 feeding or 4 to 12 hours, depending on the dose, after a PET scan with 18F-FDG in a nursing mother.[1,2,12,14]

Nursing mothers should not work with radioactive substances used in PET scans in their workplace.[15]

Drug Levels

F18 is a positron emitter with a principal decay energy of 0.6335 MeV, annihilation photons of 0.511 MeV, and a physical half-life of 1.8 hours and 0.07% of an administered dose appears in breastmilk.[4] The maximum effective half-life is 0.89 hours.[8]

Maternal Levels. Four women provided milk samples after being given 18F-FDG for a PET scan. Doses ranged from 50 to 160 MBq. Three gave a single milk sample and one gave 4 samples between 0.75 and 3.5 hours after the dose. The authors calculated that the maximum radioactivity in milk would be 19 Bq/mL for each MBq administered and that peak activity in breastmilk would occur 3 hours after administration.[1] Many diagnostic studies are performed using doses up to 370 MBq, which may require a longer period of breastfeeding abstinence.

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Relevant published information was not found as of the revision date.

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

References

1. Hicks RJ, Binns D, Stabin MG. Pattern of uptake and excretion of 18F-FDG in the lactating breast. J Nucl Med 2001;42:1238-42 PubMed PMID: 11483686.
2. Jamar F, Buscombe J, Chiti A, et al. EANM/SNMMI guideline for 18F-FDG use in inflammation and infection. J Nucl Med 2013;54:647-58 PubMed PMID: 23359660.
3. Dorbala S, Di Carli MF, Delbeke D, et al. SNMMI/ASNC/SCCT guideline for cardiac SPECT/CT and PET/CT 1.0. J Nucl Med 2013;54:1485-507 PubMed PMID: 23781013.
4. Leide-Svegborn S, Ahlgren L, Johansson L, et al. Excretion of radionuclides in human breast milk after nuclear medicine examinations. Biokinetic and dosimetric data and recommendations on breastfeeding interruption. Eur J Nucl Med Mol Imaging 2016;43:808-21 PubMed PMID: 26732471.
5. Mattsson S, Leide-Svegborn S, Andersson M. X-ray and molecular imaging during pregnancy and breastfeeding-when should we be worried? Radiat Prot Dosimetry 2021;195:339-48 PubMed PMID: 33855370.
6. Dilsizian V, Metter D, Palestro C, et al. Advisory Committee on Medical Uses of Isotopes (ACMUI) Sub-Committee on Nursing Mother Guidelines for the Medical Administration of Radioactive Material. Final

report submitted: January 31, 2019. 2019. Available at: https://www.nrc.gov/docs/ML1903/ML19038A498.pdf
7. International Atomic Energy Agency. Radiation Protection and Safety in Medical Uses of Ionizing Radiation, IAEA Safety Standards Series No. SSG-46, IAEA, Vienna. 2018. Available at: https://www.iaea.org/publications/11102/radiation-protection-and-safety-in-medical-uses-of-ionizing-radiation
8. ARSAC notes for guidance: Good clinical practice in nuclear medicine. Notes for guidance on the clinical administration of radiopharmaceuticals and use of sealed radioactive sources. 2020. Available at: https://www.gov.uk/government/publications/arsac-notes-for-guidance
9. Stabin MG, Breitz HB. Breast milk excretion of radiopharmaceuticals: Mechanisms, findings, and radiation dosimetry. J Nucl Med 2000;41:863-73 PubMed PMID: 10809203.
10. Alabed YZ, Ansari HA. 18F-fluorocholine uptake in unilateral breast related to breastfeeding in patient with primary hyperparathyroidism. Clin Nucl Med 2026;51:e61-e2 PubMed PMID: 40065460.
11. Hendler D, Stemmer SM. Uncommon reason for high fluorodeoxyglucose positron emission tomography uptake. J Clin Oncol 2010;28:e659-60 PubMed PMID: 20713861.
12. Leide-Svegborn S. Radiation exposure of patients and personnel from a PET/CT procedure with 18F-FDG. Radiat Prot Dosimetry 2010;139:208-13 PubMed PMID: 20167792.
13. Devine CE, Mawlawi O. Radiation safety with positron emission tomography and computed tomography. Semin Ultrasound CT MR 2010;31:39-45 PubMed PMID: 20102694.
14. Boellaard R, Delgado-Bolton R, Oyen WJ, et al. FDG PET/CT: EANM procedure guidelines for tumour imaging: version 2.0. Eur J Nucl Med Mol Imaging 2015;42:328-54 PubMed PMID: 25452219.
15. Almén A, Mattsson S. Radiological protection of foetuses and breast-fed children of occupationally exposed women in nuclear medicine - Challenges for hospitals. Phys Med 2017;43:172-7 PubMed PMID: 28882410.

Substance Identification

Substance Name

Fludeoxyglucose F18

CAS Registry Number

63503-12-8

Drug Class

Breast Feeding

Lactation

Milk, Human

Radiopharmaceuticals

Diagnostic Agents