



Ammonia N 13

Revised: June 30, 2019.

CASRN: 34819-78-8



Drug Levels and Effects

Summary of Use during Lactation

Information in this record refers to the use of ammonia N 13 as a diagnostic agent in PET scans. No information is available on the use of ammonia N 13 during breastfeeding. The Society for Nuclear Medicine and the International Commission on Radiological Protection states that breastfeeding need not be interrupted after administration of ammonia N 13,[1][2] although the manufacturer recommends withholding breastfeeding for 2 hours. This length of time is greater than 10 half-lives of the radioisotope, so the nursing infant should not be exposed to radiation if this the 2-hour time period is used. The mother can nurse just before administration of the radiopharmaceutical. If the mother has expressed and saved milk prior to the examination, she can feed it to the infant during the period of nursing interruption.[3][4][5] Milk that is pumped by the mother during the time of breastfeeding interruption can either be discarded or stored and given to the infant after 10 physical half-lives, or about 2 hours, have elapsed.

Disclaimer: Information presented in this database is not meant as a substitute for professional judgment. You should consult your healthcare provider for breastfeeding advice related to your particular situation. The U.S. government does not warrant or assume any liability or responsibility for the accuracy or completeness of the information on this Site .

Nursing mothers should not work with radioactive substances used in PET scans in their workplace.[6]

Drug Levels

Nitrogen N 13 decays by positron emission, emitting gamma photon with an energy of 511 keV. It has a physical half-life of 9.96 minutes.

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. 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.
2. Mattsson S, Johansson L, Leide Svegborn S et al. Radiation dose to patients from radiopharmaceuticals: A compendium of current information related to frequently used substances. Annex D. Recommendations on breast-feeding interruptions. *Ann ICRP.* 2015;44 (2 Suppl):319-21. PubMed PMID: 26069086.
3. Howe DB, Beardsley M, Bakhsh S. Appendix U. Model procedure for release of patients or human research subjects administered radioactive materials. In, NUREG-1556. Consolidated guidance about materials licenses. Program-specific guidance about medical use licenses. Final report. U.S. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards. 2008;9, Rev. 2. Available at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v9/r2/>
4. Mountford PJ, Coakley AJ. A review of the secretion of radioactivity in human breast milk: data, quantitative analysis and recommendations. *Nucl Med Commun.* 1989;10:15-27. PubMed PMID: 2645546.
5. Early PJ, Sodee DB. Principles and practice of nuclear medicine. 2nd ed. St. Louis. Mosby-Year Book, Inc. 1995:1380-1.
6. Almen A, Mattsson S. Radiological protection of fetuses 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

Ammonia N 13

CAS Registry Number

34819-78-8

Drug Class

Breast Feeding

Lactation

Radiopharmaceuticals

Nitrogen Radioisotopes

Diagnostic Agents