

REFERENCES/ SUGGESTED READING

1. Schanler, R.J. (2011). Infant Benefits of Breastfeeding. Accessed November 30, 2011
http://www.uptodate.com/contents/infant-benefits-of-breastfeeding?source=search_result&search=infant+benefits+of+breastfeeding&selectedTitle=1~150
2. Widmark, J. (2007). Pharmacology notes. Imaging-related medications: a class overview [corrected] [published erratum appears in BAYLOR UNIV MED CENT PROD 2008 Jan;21(1): 17]. *Baylor University Medical Center Proceedings*, 20(4), 408-417. Retrieved from EBSCOhost.
3. American College of Radiology. (2010). Administration of Contrast Media to Breast-Feeding Mothers. *ACR Manual on Contrast Media*, 7, 61-64. http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual/FullManual.aspx#page=64
4. Morcos, S., Thomson, H., Webb, J. (2004). The use of iodinated and gadolinium contrast media during pregnancy and lactation. *European Society of Urogenital Radiology*. 15:1234-1240
5. Burkhardt, S., Debatin, J.F., Frenzel, T., Kubik-Huch, R.A., Puchert, E., Wittek, S. (2000). Gadopentetate Dimeglumine Excretion into Human Breast Milk during Lactation. *Journal of Radiology*. 216:555-558
6. Hackett, L.P., Illet, K.F., Paterson, J.W., McCormick, C.C. (1981). Excretion of Metrizamide in Milk. *Journal of Radiology*. 54:537-538
7. Geva, T., Odegard, K.C., Powell, A.J., Sena, L.M., Tsai-Goodman, B. (2004). Clinical Role, Accuracy, and Technical Aspects of Cardiovascular Magnetic Resonance Imaging in Infants. *American Journal of Cardiology*. 94:69-74
8. World Health Organization. (2002) Global Strategy for Infant and Young Child Feeding. *World Health Organization*, Geneva.
9. Hylton, N.M. (2000). Suspension of Breast-Feeding following Gadopentetate Dimeglumine Administration. *Radiology*. 216:325-326.

Breast Feeding after a Radiologic Procedure

**Amie Ringuet,
Medical Radiation Practitioner,
Mater Imaging**



materimaging
mater hospital, rocklands road, north sydney nsw 2060
tel: 02 9955 4466 fax: 02 9955 7523
www.materimaging.com.au

materimaging

INTRODUCTION

It is well established that breastfeeding provides direct long-term benefits to both the infant and mother.¹ As a breastfeeding mother, you may have some concerns related to certain tests and the potential risks associated with the absorption of contrast dyes into breast milk.

Certain types of imaging scans may require the administration of a contrast agent. This booklet is designed to provide you with accurate and up-to-date information from recent and reliable literature so you can make an informed decision about breastfeeding after a radiologic imaging procedure.

FACTS

Why is Radiocontrast Dye needed for my scan?

Whilst some imaging scans can be performed without contrast it can sometimes be beneficial to use in order to improve the visibility of internal bodily structures. There are many different types of contrast agents used in radiologic procedures depending on the imaging modality used e.g. CT, X-Ray, MRI.

For example, Barium is a contrast medium used to visualise the digestive system and is taken orally. This type of contrast is not dissolvable in water and therefore cannot enter the blood stream, or breast milk, it is simply excreted within faeces.²

Gadolinium and Iodinated contrast are used for MRI and CT, respectively. These agents are often administered intravenously and are almost completely cleared from the bloodstream within 24 hours.³ These types of contrast materials are used to illustrate blood vessels, the biliary system and other soft tissue structures.

How much will be absorbed by the mother and the baby?

Drugs can enter breast milk in two routes. This involves a transit through the intercellular clefts or a diffusion through cell membranes in your breasts. Gadolinium and Iodinated contrast agents used in radiologic procedures have a low lipid solubility, which makes it very difficult for them to be secreted into breast milk.⁴

Within less than 24 hours of the scan only 1% of the administered iodinated contrast or less than 0.04% of the initial gadolinium dose will be excreted into breast milk.⁵ This amount can be transferred to the baby orally but it is important to note that only 1% of this is absorbed by the baby's gastrointestinal tract. This equates to 0.01% absorption of the initial dose of iodinated contrast or 0.004% of the initial dose of gadolinium. Both of these figures equate to less than 1% of the recommended dose for an infant undergoing an imaging study.⁴⁻⁷

The time it takes for the blood plasma concentration of I.V. administered gadolinium or iodinated contrast to halve is about 2 hours with almost 100% excreted from the bloodstream within the first 24 hours.³

What are the potential risk factors?

Potential risk factors may entail an allergic reaction or developed toxicity from any free ions in the dye, all of which have never been reported.³

Several studies have illustrated there is no altered gene effect or physiological development abnormalities after the administration of iodinated or gadolinium based contrast.⁴

RECOMENDATION

Do I have to pump and discard my milk?

Despite the thorough review of recent literature, some manufacturer instructions still indicate that mothers should abstain from breast-feeding for 24-48 hours after the procedure. In anticipation of a radiologic procedure with contrast, mothers have the option of obtaining breast milk via a breast pump to feed the baby following the 24-48 hour period after the examination. Active expression and discarding of breast milk is a precautionary measure that can be performed to rid any leftover contrast and eliminate any unforeseen risks.

Currently there is no evidence to show that contrast agents put breastfeeding babies at risk. Furthermore, The World Health Organization exemplifies the importance of breastfeeding for at least one to two years of age.⁸ Available data suggests it is safe for the baby to continue breastfeeding due to the very low amount of contrast absorbed by the gastrointestinal tract of the baby.^{3,9}