Diagnostic Services – Department of Radiology – Diagnostic Division

SUBJECT/TITLE: **PROCEDURE FOR PATIENTS THAT ARE BREAST FEEDING AFTER THE ADMINISTRAION OF GADOLINIUM INTERVENOUSLY**

PURPOSE: To define an appropriate procedure to for patients that are breast feeding after the administration of gadolinium.

DEFINITION: None

POLICY: The MR Division of the Department of Radiology will develop a protocol to define the appropriate procedure for patients that are breast feeding post administration of gadolinium intravenously.

PROCEDURE:

1. Patients can continue breast feeding immediately after receiving an intravenous injection of gadolinium contrast agent.
2. Patient must be given the *Breast Feeding Information Form* prior to their MRI procedure. If the patient has any question or concerns they can speak to a radiologist.
3. If the patient still has concerns they can pump and throw their milk away for the next 24 hours after their injection of gadolinium.
4. This policy is based from the ACR recommendations stated below:
    - Gadolinium compounds are safe and useful as magnetic resonance imaging contrast agents. Although free gadolinium is neurotoxic, when complexed to one of a variety of chelates it is safe for use in adults and children. These hydrophilic gadolinium chelate agents have pharmacokinetic properties very similar to those of iodinated X-ray contrast media. Like iodinated contrast agents, gadolinium contrast agents have a plasma half-life of approximately two hours and are nearly completely cleared from the bloodstream within 24 hours. Less than 0.04 % of the intravascular dose given to the mother is excreted into the breast milk in the first 24 hours (4-6). Because less than 1% of the contrast medium ingested by the infant is absorbed from its gastrointestinal tract (7), the expected dose absorbed by the infant

from the breast milk is less than 0.0004% of the intravascular dose given to the mother. Even in the extreme circumstance of a mother weighing 150 kg and receiving a dose of 0.2 mmol/kg, the absolute amount of gadolinium excreted in the breast milk in the first 24 hours after administration would be no more than 0.012 mmol. Thus, the dose of gadolinium absorbed from the gastrointestinal tract of a breast-feeding infant weighing 1500 grams or more would be no more than 0.00008 mmol/kg, or 0.04% (four ten-thousandths) of the permitted adult or pediatric (two years or older) intravenous dose of 0.2 mmol/kg. The potential risks to the infant include direct toxicity (including toxicity from free gadolinium, because it is unknown how much, if any, of the gadolinium in breast milk is in the unchelated form) and allergic sensitization or reaction, which are theoretical concerns but have not been reported.

Recommendation:

Review of the literature shows no evidence to suggest that oral ingestion by an infant of the tiny amount of gadolinium contrast agent excreted into breast milk would cause toxic effects. We believe, therefore, that the available data suggest that it is safe for the mother and infant to continue breast feeding after receiving such an agent. If the mother remains concerned about any potential ill effects, she should be given the opportunity to make an informed decision as to whether to continue breast-feeding or temporarily abstain from breast-feeding after receiving a gadolinium contrast agent. If the mother so desires, she may abstain from breast-feeding for 24 hours with active expression and discarding of breast milk from both breasts during that period.