

STANDARD OPERATING PROCEDURE:	NUCLEAR MEDICINE - Giving Advice to Breastfeeding Patients Undergoing a Diagnostic Nuclear Medicine Examination
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Version Control

Version	Date	Amendment
3	8/2/23	No changes
4	04/04/24	Added 2.3 and section 4 to show documentation of breastfeeding and non-breastfeeding patients for audit trail. Expressing to feed also added to cover patients that express breast milk to use for bottle feeds.

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1 INTRODUCTION

- 1.1 Schedule 2 Regulation 6 of the Ionising Radiation (Medical Exposure) Regulations 2017 (IRMER17) states that the employer must have written procedures for '*making enquiries of individuals of childbearing potential to establish whether the individual is or may be pregnant or breastfeeding.*'
- 1.2 This standard operating procedure applies only to diagnostic nuclear medicine examinations.
- 1.3 Radiopharmaceuticals administered to a breastfeeding patient or a patient expressing milk to feed, can result in radioisotope being excreted in their milk, giving rise to a radiation exposure to the infant. The action required to limit this exposure to less than 1mSv is dependent upon the radiopharmaceutical and activity administered. This can result in a requirement to suspend or terminate feeding with their own milk.
- 1.4 This advice is based on the information in the 2021 Administration of Radioactive Substances Advisory Committee (ARSAC) Notes for Guidance and should be read in conjunction with this guidance. Further advice or information can be sought from the regional nuclear medicine services section of Christie Physics Medical Experts (CPME).
- 1.5 For therapy administrations, CPME advice should be sought before proceeding.

2 PROCEDURE

- 2.1 Within appointment letters, patients are asked to telephone the nuclear medicine department if they are breastfeeding or expressing to feed. Signs are also displayed within the waiting room for patients to inform staff prior to injection if they are breastfeeding.
- 2.2 During the procedure explanation, the administering Radiographer must also check the breastfeeding status of the patient.
- 2.3 If the patient is not breastfeeding or expressing to feed, this must be documented in the event comment on the Radiology Information System (CRIS) 'PNB – patient not breastfeeding.' This is for audit purposes.
- 2.4 If the patient confirms they are breastfeeding or expressing to feed, check whether the test could be delayed until they have stopped using their own milk to feed.
- 2.5 Consider whether a non-radioisotope test could give the required information.
- 2.5 The patient must be given advice, as far in advance of the test as possible as per the ARSAC Notes for Guidance – [ARSAC notes for guidance: good clinical practice in nuclear medicine - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/74444/arsac-notes-for-guidance-good-clinical-practice-in-nuclear-medicine.pdf)
- 2.6 It is a requirement that this information is given in writing, and that a record of this is also maintained in the patient records. It should be documented as an event comment on CRIS.
- 2.7 Arrangements can be made with Midwifery staff if the patient requires support with feeding before and during the interruption to feeding using their own milk. Facilities must be available to enable the baby to be fed immediately prior to the test.

- 2.8 A consideration must be made as to whether a lower than usual activity could be used for the examination and still provide the required information. This could involve giving half the standard radiopharmaceutical dose to the patient but scanning for an increased length of time.
- 2.9 The patient advice leaflets 'Breastfeeding and Your Radioisotope Scan' must be used. See appendices 1 - 3.
- 2.10 The length of interruption will depend upon the radiopharmaceutical used and, to some extent, the administered activity.

3 ADVICE SHEETS

- 3.1 Advice sheets must be given to patients at the earliest opportunity prior to the examination to allow patients adequate time to prepare. The tables below show which advice leaflet must be given dependant on which radiopharmaceutical is to be administered.

3.2 Category 1 (Appendix 1)

⁵¹ Cr-EDTA	^{99m} Tc-IDA	^{99m} Tc-Colloid
^{81m} Kr-gas (only)	^{99m} Tc-HMPAO	^{99m} Tc-HDP/medronate
^{99m} Tc-DTPA	^{99m} Tc-MAG3	¹¹¹ In-leukocytes (10MBq)
^{99m} Tc-DMSA	^{99m} Tc-MIBI	²⁰¹ TI-TI
^{99m} Tc-MAA ≤ 40MBq*		

3.3 Category 2 (Appendix 2)

^{99m} Tc-Pertechnetate ≤ 80MBq	^{99m} Tc-erythrocytes
^{99m} Tc-Pertechnetate 80-800MBq	¹²³ I-Iodine
^{99m} Tc-MAA 80MBq*	¹²³ I-hippuran
^{99m} Tc-MAA + Tc Gas	¹²³ I-mIBG
^{99m} Tc-microspheres	

- 3.4 *The interruption time for 80MBq ^{99m} Tc MAA is 12 hours. However, the same data indicates that if <40MBq is used then the test moves into 'Category 1' – '0' interruption as above. If 40MBq is used the patient is provided with a category 1 form. The scan time must be doubled to ensure a diagnostic quality scan.

3.5 Category 3 (Appendix 3)

In the first few days post-partum, colostrum rather than mature milk is produced. 'Category 3' applies during the period of colostrum production, regardless of the radiopharmaceutical administered. Breastfeeding should be suspended, and advice sought from CPME.

3.6 Category 4

This refers to examinations when interruption required is so long that the mother will usually be advised to terminate breastfeeding. Advice should be sought from the ARSAC Notes for Guidance and CPME contacted.

3.7

Category	Feeding Interruption Time	Advice	Patient Advice Leaflet
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1	0	1mSv will not be exceeded if feeding is continued, but ALARP (As Low as Reasonably Practicable) principle indicates 1 feed should be expressed and discarded	Category 1
2	As stated in ARSAC Notes for Guidance	This is the recommended interruption time	Category 2
3	As advised by CPME	Measurements and calculations required before feeding can be resumed. Contact CPME to discuss arrangements	Category 3
4	STOP	Interruption required is so long that the patient will usually be advised to terminate breastfeeding.	Contact CPME for written advice

- 3.8 When an advice sheet is given to a patient, the following associated code should be entered into the comments section on CRIS for audit purposes.

Category 1 – BFG
Category 2 – BFY
Category 3 – BFP

4 AUDIT

- 4.1 Audit of this protocol must be completed annually, using the CRIS codes PNB, BFG, BFY and BFP for compliance.

5 HUMAN RIGHTS ACT

Implications of the Human Rights Act have been taken into account in the formulation of this document and they have, where appropriate, been fully reflected in its wording.

6 ACCESSIBILITY STATEMENT

This document can be made available in a range of alternative formats e.g., large print, Braille, and audio cd.

For more details, please contact the HR Department on 01942 77 3766 or email equalityanddiversity@wwl.nhs.uk

Appendix 1

Any Questions?

If you want help with **expressing milk** or **feeding your baby**, contact your midwife, health visitor, or breastfeeding counsellor.

The following organisations can put you in touch with a breastfeeding counsellor:-

National Childbirth Trust 0870 444 8708

La Leche League 0845 120 2918

Association of Breastfeeding Mothers 0870 401 7711

If you are unsure about the **time or place where you will have your scan**, phone the department where you will be having the scan.

If you have any questions **about the advice in this leaflet**, please call

.....

This section to be completed by the radiographer.

Patient Name

Date and time of scan

Hospital

Department

Phone

Type of scan

Radiopharmaceutical/Activity

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breastfeeding - category 1 (green) / issue 1.2/ June 2005

Breastfeeding and Your Radioisotope Scan

Introduction

Your doctor would like you to have a radioisotope scan.
There are special instructions about breastfeeding after this scan.

This leaflet tells you what you need to do. It also answers some questions you may have.

Breastfeeding Advice

It is important that you follow these instructions. The rest of this leaflet explains why.

You are advised to

- 1) Feed your baby normally just before the start of your test
- 2) At the first feed-time after the test
 - express your milk fully from both breasts
 - throw this milk away
 - feed your baby in some other way -
(see inside this leaflet for how)
- 3) From the next feed-time you can go back to feeding normally
(as long as this is at least 3 hours
after the start of your test)

Leaflet for use with the following tests - radiographer please tick which test :-

⁵¹ Cr-EDTA	^{99m} Tc-IDA	^{99m} Tc-colloid
^{81m} Kr-gas (only)	^{99m} Tc-HMPAO	^{99m} Tc-HDP/medronate
^{99m} Tc-DTPA	^{99m} Tc-MAG3	¹¹¹ In-leukocytes (10MBq)
^{99m} Tc-DMSA	^{99m} Tc-MIBI	²⁰¹ Tl - Tl ⁺
^{99m} Tc-MAA ≤ 40MBq		

Why does the scan affect breastfeeding?

As part of the scan, you will be given a small amount of radioactivity. Some of it may go into your breast milk.

If your baby drank this milk, he/she would also drink a small amount of the radioactivity. It is best to reduce this as much as possible.

Why use Radioactivity at all?

Different types of tests tell your doctor different sorts of things. Your doctor considers that a radioisotope scan is the best test in your case.

The amount of radiation you receive is very small - similar to an X-ray.

How much radiation will my Baby get?

If you follow the advice on this sheet, then your baby will get only a tiny radiation dose.

This will be less than the natural radiation dose we all get every 6 months.

Why must I stop breastfeeding for a few hours ?

This is to keep the radioactivity your baby gets from your milk to a very low level. This is done in 2 ways:-

(1) Wait for a time before breastfeeding.

This is because the amount of radioactivity in your milk will go down with time.

(2) Express your milk instead of giving it to your baby.

Expressing your milk at a normal feed-time will get rid of some of the radioactivity.

You should express fully from both breasts. You must not give this milk to your baby.

What shall I feed my baby with instead?

If you have the chance:-

- express your milk before the start of the test
- store this milk
- use this to feed your baby

or

you can use formula milk to feed your baby

How shall I feed my baby?

If your baby sometimes uses a bottle or trainer cup:-

you can use this to feed your baby

If your baby has only been breastfed until now:-

- Most midwives recommend that you do not use a bottle. (Some babies find it hard to breastfeed after having a bottle)
- Instead, you can give your baby milk from a special cup.
- You will need someone to show you how to do this - see below. Even tiny babies can be fed in this way.

If you need help with

**expressing your milk
storing your milk
feeding your baby**

please ask

either
or
or

**your midwife
your health visitor
a voluntary breastfeeding counsellor**
(see back page for phone numbers)

Also, the UNICEF leaflet 'Breastfeeding Your Baby' (pages 9-14) explains how to express and store your milk.

Appendix 2

Any Questions?

If you want help with **expressing milk** or **feeding your baby**, contact your midwife, health visitor, or breastfeeding counsellor.

The following organisations can put you in touch with a breastfeeding counsellor:-

National Childbirth Trust 0870 444 8708
La Leche League 0845 120 2918
Association of Breastfeeding Mothers 0870 401 7711

If you are unsure about the **time or place where you will have your scan**, phone the department where you will be having the scan.

If you have any questions **about the advice in this leaflet**, please call

.....
This section to be completed by the radiographer. Also, on the front page, fill in the time and day to restart breastfeeding.

Patient Name

Date and time of scan

Hospital

Department Phone

Type of scan Radiopharmaceutical/Activity

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breastfeeding - category 2 (yellow) / issue 1.3/July2007

Breastfeeding and Your Radioisotope Scan

Introduction

Your doctor would like you to have a radioisotope scan. There are special instructions about breastfeeding after this scan.

This leaflet tells you what you need to do. It also answers some questions you may have.

Breastfeeding Advice

It is important that you follow these instructions. The rest of this leaflet explains why.

You are advised to

- 1) Feed your baby normally just before the start of your test
- 2) At each feed-time, for ____ hours after the test starts
 - express your milk fully from both breasts
 - throw this milk away
 - feed your baby in some other way - (see inside this leaflet for how)
- 3) After this, at _____ [time] on _____ [day/date] you can go back to feeding normally

Leaflet for use with the following tests - radiographer please tick which test :-

^{99m} Tc - pertechnetate 280MBq	^{99m} Tc-microspheres
^{99m} Tc - pertechnetate 80 - 800MBq	^{99m} Tc-erythrocytes
^{99m} Tc - MAA	¹²⁵ I-iodide
^{99m} Tc MAA + TcGas	¹²⁵ I-hippuran
^{99m} Tc MAA + ^{99m} Tc DTPA aerosol	¹²⁵ I-mIBG

Why does the scan affect breastfeeding?

As part of the scan, you will be given a small amount of radioactivity. Some of it may go into your breast milk.

If your baby drank this milk, he/she would also drink a small amount of the radioactivity. It is best to reduce this as much as possible.

Why use Radioactivity at all?

Different types of tests tell your doctor different sorts of things. Your doctor considers that a radioisotope scan is the best test in your case.

The amount of radiation you receive is very small - similar to an X-ray.

How much radiation will my Baby get?

If you follow the advice on this sheet, then your baby will get only a tiny radiation dose.

This will be less than the natural radiation dose we all get every 6 months.

Why must I stop breastfeeding for a time?

This is to keep the radioactivity your baby gets from your milk to a very low level. This is done in 2 ways:-

(1) Wait for a time before breastfeeding.

This is because the amount of radioactivity in your milk will go down with time.

(2) Express your milk instead of giving it to your baby.

Expressing your milk at a normal feed-time will get rid of some of the radioactivity.

You should express fully from both breasts. You must not give this milk to your baby.

What shall I feed my baby with instead?

If you have the chance:-

- express your milk before the start of the test
- store this milk
- use this to feed your baby

or

you can use formula milk to feed your baby

How shall I feed my baby?

If your baby sometimes uses a bottle or trainer cup:-

you can use this to feed your baby

If your baby has only been breastfed until now:-

- Most midwives recommend that you do not use a bottle. (Some babies find it hard to breastfeed after having a bottle)
- Instead, you can give your baby milk from a special cup.
- You will need someone to show you how to do this - see below. Even tiny babies can be fed in this way.

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Appendix 3

Why does the scan affect breastfeeding?

As part of the scan, you will be given a small amount of radioactivity. Some of it may go into your breast milk.

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feeding your baby**

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Any Questions?

If you want help with **expressing milk or feeding your baby**, contact your midwife, health visitor, or breastfeeding counsellor.

The following organisations can put you in touch with a breastfeeding counsellor:-

National Childbirth Trust 0181 992 8637

La Leche League 0171 242 1278

Association of Breastfeeding Mothers 0171 813 1481

If you are unsure about the **time or place where you will have your scan**, phone the department where you will be having the scan.

If you have any questions **about the advice in this leaflet**, please call

.....

.....
This section to be completed by the radiographer.

Patient Name

Date and time of scan

Hospital

Department

Phone

Type of scan

Radiopharmaceutical/Activity



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Breastfeeding and Your Radioisotope Scan

Introduction

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There are special instructions about breastfeeding after this scan.

This leaflet tells you what you need to do. It also answers some questions you may have.

Breastfeeding Advice

It is important that you follow these instructions. The rest of this leaflet explains why.

You are advised to

1. Feed your baby normally just before the start of your test
2. After the test starts, at every feed time
 - express your milk fully from both breasts
 - save this milk - someone from the Radioisotope Department will collect it from you
 - feed your baby in some other way -
(see inside this leaflet for how)

(Special measurements will be made of your milk. This is so we can work out when you can go back to breastfeeding your baby.)

3. **When we tell you**, you can go back to feeding your baby normally.

POLICY MONITORING AND REVIEW ARRANGEMENTS

Para	Audit / Monitoring requirement	Method of Audit / Monitoring	Responsible person	Frequency of Audit	Monitoring committee	Type of Evidence	Location where evidence is held
	Rolling monthly review of compliance of in date documents	Project Officer to advise author 6 months in advance of review date and advise CQEC of overall Trust compliance	Project Officer	Monthly rolling programme	CQEC	Monthly compliance report	Team Drive: Director of Nursing/Corporate QEC
	Audit of this protocol must be completed annually, using the CRIS codes PNB, BFG, BFY and BFP for compliance.	CRIS codes PNB, BFG, BFY and BFP to be used for compliance.	Department lead	Annual	Radiology Q&S	Annual report	Radiology drive