

Having a sentinel lymph node (SLN) injection

A sentinel lymph node (SLN) injection is performed prior to breast surgery. It is an injection of a radioactive tracer in order to detect your lymph nodes during surgery. A biopsy of the SLN will determine if cancer has spread from the tumour.

For female patients

If you know that you are pregnant, or there is any chance that you may be pregnant, please contact the Medical Physics Department.

Preparation for your injection

There are no extra preparations for an SLN injection; please follow the advice given to you prior to your surgery.

Your injection

A small amount of radioactive tracer will be injected into the breast that is being operated on (or both breasts if you are having a bilateral surgery). The injection is given around the edge of the areola (around the nipple) using a fine needle. It takes a few seconds to do this. You may feel the 'pinprick' of the needle and/or you may feel a slight sting. There are no lasting side-effects from this injection. This injection is a separate procedure to the 'blue dye', which you may also receive during surgery; both are used to detect your lymph nodes. Your injection will either be performed the morning of your surgery or the afternoon before your surgery.

How does it work?

The injection will be taken up by your lymph glands over the next few hours. During your surgery, the surgeon will use a piece of equipment to detect the nodes and remove the node nearest the tumour, called the sentinel lymph node (SLN). A biopsy (sample) is taken of the SLN to check for abnormal cells. If there are abnormal cells present, additional lymph nodes may need to be removed. This may be done during the surgery or at a follow-up surgical procedure.

What are the benefits and risks of this procedure?

SLN biopsies help doctors to stage cancers by understanding if the cancer has spread. Any surgery that removes lymph nodes can cause complications, such as lymphoedema (swelling). The risk of complications increases with the number of lymph nodes removed.

SLN injections can reduce the amount of lymph nodes that may need to be removed, which can reduce the associated complications. Please ask the surgical team looking after you if you have any concerns about risks associated with lymph node removal.

The injection contains a small amount of radioactive tracer, called a radiopharmaceutical. The small risk from the radiation dose is outweighed by the information that will be gained by having the injection. The table on the following page gives radiation dose information.

Compassionate

Aspirational

Resourceful

Excellent

Please ask the Medical Physics Team if you have any concerns about radiation dose.

Source of exposure (using RBFT Local DRLs for Nuclear Medicine)	Dose
Having a dental x-ray	0.005 mSv
Eating 100g of Brazil nuts	0.01 mSv
Having a chest x-ray	0.014 mSv
Sentinel lymph node (SLN) injection	0.02-0.08 mSv
Taking a transatlantic flight	0.08 mSv
Lung ventilation scan	0.2 mSv
DMSA kidney scan (adult dose)	0.7 mSv
Oesophageal emptying, gastric emptying, pertechnetate thyroid scan	0.9 mSv
Lung perfusion scan	1.0 mSv
UK annual average radon dose	1.3 mSv
CT scan of the head and brain	1.4 mSv
Octreotide (In-111), I-123 whole body, HIDA Gall Bladder scan	2.5 mSv
UK average background radiation dose from all types, including the earth and the atmosphere	2.7 mSv
Parathyroid scan	4.0 mSv
CT scan of the chest – CT scan of whole spine	6.6 mSv – 10 mSv
Average annual radon dose to people in Cornwall	6.9 mSv
Annual exposure limit for health service employees working in radiation	20 mSv
Level at which changes in blood cells can be readily observed	100 mSv
Radiation to produce effects including nausea and a reduction in white blood cell count	1000 mSv

Contact us

Medical Physics Department,

Level 1 North Block,

Monday to Friday, 9.00am to 5.00pm.

If you have any questions about your treatment, please ask the staff looking after you or telephone 0118 322 7355 or email: rbb-tr.physics@nhs.net

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Physics & Clinical Engineering Department, May 2021.

Next review due: May 2023