



**University Hospitals Birmingham**  
NHS Foundation Trust



# Sentinel lymph node biopsy for melanoma

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## Introduction

**This leaflet aims to explain further what happens during a sentinel node biopsy. It should be read following discussion with your doctor.**

A sentinel lymph node biopsy is a surgical technique used to find out if your cancer has spread from its original site. This is sometimes also called staging.

Cancer can spread to the lymph nodes. These are small, round structures which usually lie in groups in the neck, armpit, groin, abdomen and chest. These nodes receive lymph, a clear or whitish fluid, from every part of the body through a network of fine tubes called lymph vessels. Our lymphatic system helps to transport substances around the body and is part of our natural defence against infection. Cancer cells can also travel in these vessels.

The first lymph node that receives the lymph from a particular area of body is called the sentinel node. Any cancer cells that becomes loose may move through the lymph vessels to the sentinel node where they get trapped and may start growing. This is often the earliest spread (or metastasis) of the cancer from its original (primary) site. As the cancer grows in the lymph node, it becomes larger and the node can then be felt by the doctor or the patient. In the early stage, when there are relatively fewer cancer cells, the lymph nodes cannot be felt through the skin making it impossible to tell whether the cancer has spread or not.

If we can find the sentinel node that drains the primary cancer area, remove it by surgery and examine it under microscope, any early spread can be identified or ruled out. This is called a sentinel lymph node biopsy.

The surgery to remove the sentinel node is carried out, under general anaesthetic, at the same time as the wider excision treatment of your melanoma.

## What is the benefit of doing a sentinel node biopsy in melanoma?

Removing the sentinel node is a reliable method for finding out if the melanoma has spread to the lymph nodes.

If the biopsy does not show any cancer in the sentinel node (called a negative result), it often gives people a sense of relief. However, you will still need to monitor yourself and attend regular follow up appointments as the melanoma could return in the future.

If the sentinel node shows any presence of cancer (called a positive result), it means the cancer has spread. In this case, your consultant will discuss with you any additional tests or treatments that may need to be considered.

The sentinel node biopsy should be regarded purely as a diagnostic test, providing knowledge about the spread of the cancer, however, knowing sooner about any spread of disease may provide early access to adjuvant treatments.

## What are the other implications of a melanoma diagnosis and a sentinel lymph node biopsy?

There are situations where you will be asked about your cancer diagnosis. Typically this is when taking out or renewing life assurance, a mortgage or travel insurance. Having a positive sentinel lymph node biopsy will change the stage of your cancer diagnosis from a Stage 1 or 2, to Stage 3 and it is important for you to be aware that this may have an impact on you obtaining finance or insurance and the cost of policies may increase.

Clinical trials of new treatments may require that you have had a sentinel node biopsy in order to be eligible to enrol on the trial. This may be an important consideration for you now or for any future trials. Your doctor and clinical nurse specialist (CNS) will be able to tell you if there are currently any suitable trials open for you to consider.

# How is the sentinel node biopsy done?

There are three steps in a sentinel node biopsy:

## Step 1

To find out where the sentinel node is located, a small amount of radioactive and/or magnetic tracer, or dye, is injected near the primary site of the cancer. The choice of dye used depends upon the site of your melanoma and the consultant undertaking the procedure.

If you have the radioactive tracer, you will receive an injection around the melanoma scar and are then positioned under a scanner.

The first node, or nodes, to take up the tracer are the sentinel node/s. The approximate position of the nodes is marked on the skin surface. Please do not remove these marks.

This test is done in the Nuclear Medicine department of the hospital on either the day of surgery or the day before and can take several hours to complete. The radiation dose from the procedure is very low (similar to a spine X-ray).

If you are only given the magnetic tracer this scan may not be needed.

## Step 2

The surgery to remove the sentinel node is done in the operating room under general anaesthesia. When you are asleep, a blue dye is injected in the area of the primary cancer.

This dye travels through the lymph vessels and is taken up by the sentinel node turning them blue. The blue colour of the node helps to locate them. The sentinel lymph node is located through a cut in the skin. These lymph nodes are then removed and sent for microscopic examination. The wider excision of the primary cancer scar is also done at the same time.

## Step 3

The removed node is thoroughly examined under a microscope in the laboratory. If any cancer cells are found in the node/s, its size and site are noted and reported to your consultant. This process usually takes 2 to 4 weeks, but can sometimes take a little longer.

## Are there any side effects/disadvantages of this procedure?

- Yes. As it involves surgery there is a small risk of bleeding, collection of fluid in the wound and wound infection or breakdown
- There will be a scar from surgery which can become itchy and lumpy in a few patients
- Many patients will develop a seroma: a small collection of fluid at the operation site. Occasionally, a needle will be inserted into the collection to drain the fluid, but, as it will frequently recur, it is usually left to resolve on its own. This can take many weeks or months
- A small number of patients may have an allergic reaction to the dyes used
- There is a small risk (less than 1 in 100) of developing lymphoedema or swelling due to poor drainage of fluid in the leg or arm
- Your urine may be coloured green after surgery due to the dye used. This is harmless and usually clears up within a few days
- The dyes used may cause harmless staining around the scar which can persist for several months before resolving
- The surgery is carried out under general anaesthesia and although they are very safe, complications may happen. You will need a pre-operative assessment and may also need a discussion with an anaesthetist if you have any other medical conditions

## Who decides whether I should have a sentinel node biopsy?

The decision is yours. The medical staff will discuss the procedure and its side effects with you in detail. As this is a diagnostic test, you have to make an informed decision whether you would like to have this done. Get as much information as you need from your doctor and the clinical nurse specialists to enable to make your decision.

NICE (National Institute for Health and Care Excellence) has produced a table of possible advantages and disadvantages of sentinel node biopsy. This may help you in making your decision if you are uncertain. This table is reproduced at the end of this booklet. You may also find this website helpful in making your decision – <https://pda.melanomafocus.com>

## Before the surgery

If you decide to go ahead with the sentinel node biopsy, you will receive a letter with a date to come into hospital for the operation. You will also be sent appointments to attend the Nuclear Medicine department and for a pre-operative assessment. The nuclear medicine appointment may be the day before surgery or on the day of your operation. These may arrive as three separate letters, or all together. Please get in touch with your consultant's secretary if you do not receive all three appointments.

At the pre-operative assessment clinic, details will be taken about your current health and past medical history, including your current medication. You may have blood tests and/or an ECG (heart tracing). This ensures that we have all the information needed ready for your operation.

On the day of your operation, a doctor will see you and discuss the surgery again. Please do not hesitate to discuss any concerns you have. You will also be seen by the anaesthetist.

## After the surgery

Following the surgery, there is usually some discomfort and pain in the operated area which can be controlled with simple painkillers.

Many patients are discharged home the same day but some may require an overnight, or longer, stay. If you have significant pain or bleeding in the operated area when you are at home, please contact the ward or the plastic surgery doctor on call at the hospital.

You will usually be seen in the dressing clinic at the hospital or be asked to see the practice nurse at your GP surgery about a week after your surgery to check that the wound is healing well.

Once the results are available, we will send you an outpatient appointment to discuss the findings with the surgeon.

If no cancer was found in the sentinel node, then you will not need any further treatment at this stage. However, there is still a risk of the cancer coming back, and therefore, you will need ongoing follow up appointments at your local hospital. If there is cancer present in the sentinel node, the surgeon will discuss whether referral to an oncologist to consider adjuvant treatment is appropriate.

## Where can I get further information?

From the following internet sites:

- a. [www.cancerresearchuk.org](http://www.cancerresearchuk.org)
- b. [www.macmillan.org.uk](http://www.macmillan.org.uk)

## NICE (National Institute for Health and Care Excellence)

– table of possible advantages and disadvantages of sentinel node biopsy.

Possible advantages of sentinel lymph node biopsy	Possible disadvantages of sentinel lymph node biopsy
The operation helps to find out whether the cancer has spread to the lymph nodes. It is better than ultrasound scans at finding very small cancers in the lymph nodes.	The purpose of the operation is not to cure the cancer. There is no validated evidence that people who have the operation live longer than people who do not have it.
The operation can help predict what might happen in the future. For example, in people with a primary melanoma that is between 1 and 4 mm thick: <ul style="list-style-type: none"><li>• around 1 out of 10 die within 10 years if the sentinel lymph node biopsy is negative</li><li>• around 3 out of 10 die within 10 years if the sentinel lymph node biopsy is positive</li></ul>	The result needs to be interpreted with caution. Of every 100 people who have a negative sentinel lymph node biopsy, around 3 will subsequently develop a recurrence in the same group of lymph nodes.
People who have had the operation may be able to take part in clinical trials of new treatments for melanoma. These trials often cannot accept people who have not had this operation.	A general anaesthetic is needed for the operation.
	The operation results in complications in between 4 and 10 out of every 100 people who have it.



The Trust provides free monthly health talks on a variety of medical conditions and treatments. For more information visit [www.uhb.nhs.uk/health-talks.htm](http://www.uhb.nhs.uk/health-talks.htm) or call 0121 371 4957.

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