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The evidence used in the preparation of this leaflet is available on request. Please email: [patient.information@salisbury.nhs.uk](mailto:patient.information@salisbury.nhs.uk) if you would like a reference list.

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## Investigating your severe headache (page 1 of 2)

Severe headaches that start suddenly are a common cause for assessment in the Emergency Department or Acute Medical Unit (AMU). Of all the severe headaches that begin suddenly and without warning, 1 in 13 (7.6%) in the UK each year are caused by a bleed on the brain, called a subarachnoid haemorrhage (SAH). This leaflet will give you more information about having a lumbar puncture, which is used in the diagnosis of a SAH.

### What is a subarachnoid haemorrhage?

Nationally, 1 in 13  
7.6% severe sudden-onset headaches are caused by a subarachnoid haemorrhage

A subarachnoid haemorrhage (SAH) is a bleed on the brain, caused by one of the blood vessels surrounding the brain bursting. It occurs without warning, often in patients who have been healthy up until the onset of the headache. In addition to a headache, symptoms can include vomiting, collapsing, becoming confused, having problems

with vision and having numbness or difficulty moving an arm or leg. It is the most serious cause of a sudden-onset severe headache and can be fatal. Investigating and making the diagnosis early improves the likelihood of treatment success.

### Making a diagnosis

Having a Computerised Tomography (CT) scan of the head is the initial investigation to make this diagnosis. All the scans are reviewed by a consultant radiologist to look for any abnormality.

The reliability of a CT scan in ruling out an SAH depends on how long after the start of the headache you have the scan. The reliability ranges from 98% at 12 hours to 50% after one week. However, these figures mean that a small number of bleeds will be missed on the scan.

To be nearly 100%



The white area indicated is a subarachnoid haemorrhage

certain, further investigation is required, which is a lumbar puncture.

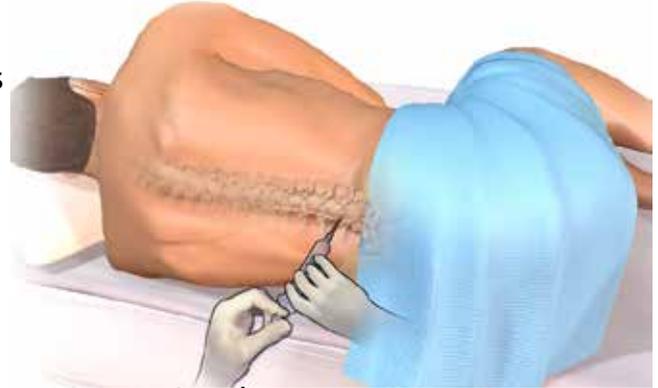
On Whiteparish Ward in 2016, 98% of patients with a sudden-onset severe headache had a CT scan. The scans showed a subarachnoid haemorrhage in less than 2.8%

## What is a lumbar puncture?

A lumbar puncture is a procedure used to take a sample of the fluid from around your spinal cord. The sample is tested to see if there are any remnants of blood in your spinal fluid, which, if present, would indicate that you have had an SAH.

## What does the procedure involve?

A lumbar puncture involves you lying on one side with your feet up to your chest, keeping as still as possible. The skin of your lower back is cleaned and you are given a small amount of local anaesthetic in to the skin overlying your lower spine. A needle and a very fine tube are used to measure the pressure in your spinal cord and extract a small amount of the fluid surrounding it. The local anaesthetic will sting when it is put in, but following this the procedure should not be painful. Following the procedure you will be advised to continue lying on your side for 1-2



Lumbar puncture

hours. The results take a couple of hours to come back, and if they are negative and your headache is easing, we would expect you to be ready to go home straight away.

A lumbar puncture is an invasive procedure and has both side effects and risks. The majority of patients will have a headache for several days following the procedure that is worse when standing or sitting upright. In a number of cases the headache is severe enough

In 2016 49% patients on Whiteparish Ward who had a sudden-onset severe headache but a negative CT scan had a lumbar puncture. None of these patients were subsequently found to have had a subarachnoid haemorrhage.

In 2016 seven patients were reassessed on Whiteparish Ward due to a severe headache resulting from a lumbar puncture.

to warrant further assessment in hospital. There is also a small risk of infection and lower back/upper leg pain following the procedure.

## What happens next

Ultimately it is your decision about whether you have a lumbar puncture to definitively exclude an SAH. Do remember that if you have concerns or questions your admitting consultant and the medical team will be happy to discuss your own personal risk and answer your questions.