

# 24 hour ambulatory blood pressure monitoring

The background of the entire page is a photograph of a man and a young boy. The man, on the right, is wearing a blue shirt and is smiling as he looks at a book. The boy, on the left, is wearing glasses and an orange shirt, and is also smiling while looking at the book. They are both holding the book, which has yellow pages. The scene is set in what appears to be a hospital room, with a window visible in the background.

Information for families

Great Ormond Street Hospital  
for Children NHS Foundation Trust

**This information sheet from Great Ormond Street Hospital (GOSH) explains about 24 hour ambulatory blood pressure monitoring, why it might be needed and how to carry it out at home.**

## **What is blood pressure?**

Blood pressure is a measurement of the force used by the heart to pump blood around the body. Each time the heart beats, it squeezes to pump blood around the body and relaxes to fill up with blood before the next beat. Blood pressure measurement has two parts – the first part is the systolic pressure when the heart is squeezing and the second is the diastolic pressure when the heart is relaxing.

Blood pressure is dependent on height and weight as well as medical conditions, such as kidney disease, and lifestyle choices, such as eating too much salt in your diet or drinking fizzy drinks containing caffeine.

We also know that blood pressure can rise if you are stressed or anxious. Carrying out blood pressure monitoring while going about normal day to day activities can give a better picture of blood pressure. There are two ways to do this:

- You could buy a BP monitor to regularly measure BP at home.
- You could come to hospital to have a monitor fitted which takes regular measurements every 30 minutes during the day and every hour at night for a 24 hour period. This is called 24 hour ambulatory blood pressure monitoring – ambulatory means walking but covers all sorts of daily activities.

## **What is 24 hour ambulatory blood pressure monitoring?**

Measuring blood pressure on one occasion may suggest high blood pressure (hypertension)

but measuring it regularly over a 24 hour period is the gold standard for diagnosing hypertension.

## Why does my child need it?

Children and young people rarely have their blood pressure monitored routinely as it is unusual for them to have high blood pressure unless it is associated with another medical condition. Your child may have had their blood pressure checked as part of pre-admission assessment, by your family doctor (GP) or during a stay in hospital. If their blood pressure measurement was higher than expected, they will refer your child for ambulatory blood pressuring monitoring, in which a monitor is attached to your child's arm and will measure and record their blood pressure for a 24 hour period.

We often use this type of monitoring for young people with confirmed high blood pressure so that we can be sure your child is getting the best treatment possible.

## What happens when the monitoring equipment is fitted?

At GOSH, the appointment is part of an assessment of your child's blood pressure. Fitting the monitoring equipment usually takes about 30 minutes and involves a consultation with the nurse and measurement of baseline observations such as height, weight, temperature and pulse. They may also take blood samples to test to see what is causing your child's high blood pressure, along with an echocardiogram (ECHO) and a kidney ultrasound scan.

Once these check-ups have been completed, they will fit the blood pressure monitor. They will wrap a soft cuff around the top part of your child's arm and fasten it with Velcro®. This is connected to the monitor with a plastic tube. Your child can wear the monitor on their belt or a strap or we can provide a small bag to carry it.

You will usually be asked to keep a brief diary of your child's activity and any symptoms while they are wearing the monitor. This enables the doctors to match the blood pressure measurements with what your child was doing at the time.

## **Will it hurt?**

Blood pressure monitoring does not hurt. Some people find it a bit uncomfortable when the cuff inflates but this only lasts for a few seconds. Wearing the blood pressure monitor should not interfere with your child's daily life at all, other than not being able to bathe, shower or swim for the 24 hours it is in place.

## **What happens when we go home?**

When the monitor is in place, you should not adjust the cuff or disconnect the monitor until 24 hours have passed. The monitor is pre-programmed for your child so please not push any of the buttons. If the settings are adjusted, the

readings will not be accurate so the test may need to be repeated.

The monitor will continue to take regular measurements of your child's blood pressure every 30 minutes during the day and every hour at night. The monitor should not be removed to change into night clothes so we suggest your child wears a short sleeved T-shirt or vest to the appointment that can be worn for the entire monitoring period. When the 24 hours have finished, you can undo the Velcro® strap holding the cuff in place and turn off the monitor using the black button on the side.

## **How do we return the monitoring equipment?**

You can drop the monitoring equipment back to GOSH if you live within London. If you live further away, we may be able to arrange a courier to collect it. We will also need to have your child's activity diary for the period so please put this in the envelope provided.

## What happens next?

When the monitor is returned, we will download the data onto a computer. The information you have given us in the diary will be plotted against your child's blood pressure measurements. Finally, we add average results for your child's height and age. The computer then generates a report that will tell us your child's average blood pressure through the day and night and how often it is above the expected results for your child's height and age.

Once this analysis is complete, we will write to you to explain the results and give you instructions or recommendations for further treatment if needed.

### Notes

## Notes

**If you have any questions,  
please call 020 7405 9200 ext 5102.  
You can also email Eileen Brennan at  
[eileen.brennan@gosh.nhs.uk](mailto:eileen.brennan@gosh.nhs.uk).**

© GOSH NHS Foundation Trust July 2016  
Ref: 2016F1746  
Compiled by the Renal Nurse Consultant  
in collaboration with the Child and Family Information Group