The quadruple test – screening for Down’s syndrome and spina bifida

This leaflet provides information about a blood test to check for Down’s syndrome and spina bifida. This test is available to you between 14 weeks and 2 days and 22 weeks and 6 days of your pregnancy (ideally before 20 weeks). If you have any questions after reading this leaflet, please speak to your GP or midwife, who will be happy to answer them. Alternatively, you can contact the fetal medicine unit (details at end of leaflet).

What is Down’s syndrome?

Down’s syndrome is a condition that some babies are born with. It affects about one in every 700 babies. Children can have a wide range of learning difficulties and some medical problems, including heart defects, bowel problems, chest problems and sinus problems. Some adults with Down’s syndrome are able to get jobs and live fairly independent lives. However, most people with Down’s syndrome need long-term support and ongoing care.

Down’s syndrome is caused by the presence of an extra chromosome (number 21) in the cells of a developing baby. Usually it is not inherited and so a baby can be affected even if there is no history of Down’s syndrome in the family.

We do not know exactly why babies get Down’s syndrome. Although older women are more likely to have a baby with the condition, any woman can have a baby with Down’s syndrome. It is not caused by anything the parents have done or not done.

What is spina bifida?

Babies with spina bifida have an opening in the bones of the spine, which can result in damage to the nerves controlling the lower part of the body. This causes weakness and paralysis of the legs and sometimes bowel and bladder problems.

Serum screening to test for Down’s syndrome and spina bifida (quadruple test)

The quadruple test is a blood test that screens for Down’s syndrome and spina bifida. We offer this test to every woman who books to have her baby with us, but did not have a combined test earlier in pregnancy. We only offer you the quadruple test if it is too late for you to have the combined test.
The quadruple test is a screening test, which means it cannot tell us whether your baby does or does not have Down’s syndrome or spina bifida. However, it can tell us which women are at a greater risk of their baby having either of these conditions.

The test that we offer is called the ‘quadruple test’ because it measures the amount of four hormones in your blood:

- AFP
- beta HCG
- inhibin-A
- oestriol.

The amounts of these substances are combined with details of your age, weight and the gestational age of your pregnancy (how far into your pregnancy you are – calculated from a dating scan). From this information, a computer programme calculates the risk of your baby having Down’s syndrome.

The level of AFP is also used to calculate if there is an increased risk of your baby having spina bifida.

**What are the benefits of having the quadruple test?**

The quadruple test is a screening test. It will give you a more accurate idea of the risk of your baby having Down’s syndrome than an estimate based on your age alone. However, it cannot tell you whether your baby definitely does have or does not have Down’s syndrome. The quadruple test picks up around 80% of babies with Down’s syndrome. This means that around one in five (20%) of Down’s babies are not picked up by this screening test. The false positive rate (the likelihood of predicting Down’s syndrome in babies without Down’s syndrome) is 3%.

The test also picks up about 80% of babies with spina bifida. This means that about one in five (20%) of babies with spina bifida will not be picked up by the quadruple test. However, the best screening test for spina bifida is a detailed ultrasound scan that is offered to all women in mid-pregnancy.

**What are the limitations of the quadruple test?**

The test can only be performed between 14 weeks 2 days and 22 weeks and 6 days of pregnancy (based on ultrasound dates).

If you are pregnant with twins, we recommend that you have the combined test in early pregnancy (between 11 weeks and 2 days and 14 weeks and 1 day), as this test is able to give a risk for each baby. The quadruple test is not recommended for multiple babies.

**Are there any risks?**

The blood test is not dangerous in any way and will not harm you or your baby.

**Are there any alternative tests?**

An alternative is a detailed scan in mid-pregnancy. Around half (50%) of babies with Down’s syndrome will have features that can be picked up at this scan. This means that around half of
Down’s babies will not have these features and will therefore have completely normal scan findings.

Almost all babies (95%) with spina bifida will have features that can be picked up at by the mid-pregnancy scan. This means that 1 in 20 (5%) of babies with spina bifida will not have any features on scan.

The dating scan
Before you can have the quadruple test, you need to have a scan to accurately date your pregnancy. This may be early in pregnancy or it may be at the detailed mid-pregnancy scan. This scan can also exclude or confirm a twin pregnancy.

It generally takes about 20 minutes to have the scan and you do not need to have a full bladder for it. You will be given a printed report of the scan to keep in your maternity notes, as your midwife or GP will want to see this.

It is very important that you fully understand what you are told following the scan. If you need an interpreter please let your midwife or GP know so that we can arrange this in time for your appointment.

Attending your scan appointment
Appointments for scans during pregnancy are in high demand. If the appointment you are sent is not convenient or if you are unable to attend for any reason, please telephone 020 7188 8003 and let us know.

If you are more than 15 minutes late for your appointment, we may not be able to perform your scan and we will have to give you another appointment.

Please remember that this is a medical examination – too many people in the room can affect the sonographer’s concentration. Taking photographs or filming the ultrasound is not allowed.

Some of the pictures from the scan may be used for teaching purposes. All information that could identify you or your baby will be removed, however, if do not want the images from your scan used in this way, please tell the sonographer – it will not affect your care in any way.

If you need an interpreter or a signer at your appointment, we are happy to arrange this for you. Please speak to your midwife or call our Language Support Service as soon as possible on 020 7188 8815.

Does the serum screening scan check for other problems?
The person performing the scan will check the main structures of your baby, but because the baby is still small, most problems cannot be detected. For this reason we always recommend that you have the detailed ultrasound scan in mid-pregnancy (18–21 weeks) when the baby will be bigger.
When will I get the results?
The result for spina bifida is reported as ‘screen negative’ or ‘screen positive’. This means that the results are assumed to be either positive or negative based on the results of the test. The result for Down’s syndrome is given as a number, and gives an estimate of your baby’s risk of being born with Down’s syndrome.

If your result is screen negative or low risk, we will send your results by letter to your home address. If your result is screen positive or high risk, you will be contacted by telephone. If you have not received your results 10 days after your quadruple test, please contact the fetal medicine unit.

What does a ‘low risk’ result mean?
If you have a ‘low risk’ result, it means that the chance of your baby having Down’s syndrome is less than one in 150. The chance of your baby having spina bifida is reported in the same way. A ‘low risk’ result does not rule out the possibility that your baby might have either of these abnormalities – it simply means that the risk is low.

What does a ‘higher risk’ result mean?
This indicates that the chance of your baby having Down’s syndrome is greater than 1 in 150, or that the risk of spina bifida is increased. This does not necessarily mean that your baby has Down’s syndrome or spina bifida. Most women who have a ‘higher risk’ result will not have a baby with either of these conditions.

You will be invited to discuss the results, and further possible tests, with one of the specialist midwives in the Fetal Medicine Unit at St Thomas’ Hospital.

Useful links
You can get more information about screening from the following organisations:

Antenatal Results and Choices  Fetal Medicine Foundation
  t: 020 7631 0281  t: 020 7034 3070
  w: www.arc-uk.org  w: www.fetalmedicine.com

Wolfson Institute of Preventative Medicine
  t: 020 7882 6293/4
  w: www.smd.qmul.ac.uk/wolfson/e.pm/screening

Contact us
If you have any questions or concerns about the quadruple test please contact the fetal medicine unit on 020 7188 8003 and ask to speak to the Down’s syndrome screening coordinator.

The unit is open between 9am and 4.30pm, Monday to Friday.
Further sources of information

Pharmacy medicines helpline
For information about any medicines that you have been prescribed at Guy's and St Thomas' hospitals, you can speak to the staff caring for you or call our helpline.
t: 020 7188 8748 9am to 5pm, Monday to Friday

Patient Advice and Liaison Service (PALS)
To make comments or raise concerns about the Trust's services, please contact PALS. Ask a member of staff to direct you to the PALS office or:
e: 020 7188 8801 at St Thomas'    t: 020 7188 8803 at Guy's    e: pals@gstt.nhs.uk

Knowledge & Information Centre (KIC)
For more information about health conditions, support groups and local services, or to search the internet and send emails, please visit the KIC on the Ground Floor, North Wing, St Thomas' Hospital.
t: 020 7188 3416

Language support services
If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.
t: 020 7188 8815    fax: 020 7188 5953

NHS Direct
Offers health information and advice from specially trained nurses over the phone 24 hours a day.
t: 0845 4647    w: www.nhsdirect.nhs.uk

NHS Choices
Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.
w: www.nhs.uk

Become a member of your local hospitals, and help shape our future
Membership is free and it is completely up to you how much you get involved. To become a member of our Foundation Trust, you need to be 18 years of age or over, live in Lambeth, Southwark, Lewisham, Wandsworth or Westminster or have been a patient at either hospital in the last five years. To join:
t: 0848 143 4017    e: members@gstt.nhs.uk    w: www.guysandstthomas.nhs.uk

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