

AT ASCOT RADIOLOGY all our Sonographers and reporting Radiologists have undergone extensive training in both the theoretical and practical aspects of nuchal scanning and we have been carrying out these examinations since the department opened in April 1999. We are one of the few private Radiology practices in New Zealand to be accredited in nuchal scanning and have all the most up to date fetal medicine software to allow analysis.

Recently, we have been further accredited to include the fetal nasal bone as part of the scan. If the nasal bone is identified during the scan, the risk of fetal chromosomal abnormality decreases quite significantly.

WHAT ARE CHROMOSOMAL ABNORMALITIES?

These are abnormalities that occur in a person's genetic make-up. The most common is Down's Syndrome (Trisomy 21) where there are three parts of the 21st chromosome instead of the usual two. These children are mentally subnormal and have a characteristic face and body shape. There are other more severe chromosomal abnormalities, some of which are incompatible with life. These differ from isolated structural abnormalities such as club feet or spina bifida.

ABOUT NUCHAL SCANNING

→ Every woman has a risk of having a baby with Down's Syndrome. As you get older, your risk increases.

→ Your background risk is the same as anyone else of the same age (see chart).

→ The nuchal scan is a screening test for Down's Syndrome and other chromosomal abnormalities. You will not get an absolute answer about your baby's chromosomes but you will get a print out showing an adjusted risk factor. This takes your age into account as well as the nuchal measurement (the skin thickness behind the baby's neck).

→ If nasal bone assessment has been possible, this information will also be used in the calculation for chromosomal abnormality.

→ This adjusted risk factor often helps couples decide about proceeding with further tests for chromosomal abnormalities such as an amniocentesis or Chorion Villus Sampling (CVS). These are both more invasive tests but they do give absolute answers.

For instance, if your risk after a nuchal scan was very low, you may decide against having an amniocentesis or CVS. However, if your risk was high (1:300 or greater) you may wish to carry on with further testing.

Please note that most amniocentesis and CVS results are normal.

HOW DOES IT WORK?

→ The sonographer will scan the baby and take measurements to ensure the baby is growing appropriately for dates.

→ A few measurements of the nuchal fold will be made to get as accurate measurement as possible. We are measuring a very small structure (usually less than 3mm) so the baby has to be in an optimum position. Often you will be asked to roll, cough or sit up to help the baby move into a better position. Occasionally we may need you to fill your bladder to help us visualize the baby.

→ We will make every attempt to detect the presence or absence of a nasal bone.

→ A brief scan of the baby's anatomy will also be carried out although this is somewhat limited as the baby is still very small at this stage. A more comprehensive scan is done at 18-20 weeks gestation.

→ After all the measurements and images have been obtained, the data is put through the fetal medicine software programme to calculate your risk factor.

A copy of this will be given to you and explained to you before you leave the department. A copy will also

be sent to your referring Midwife or Obstetrician and will get to them the following day.

→ Only about 80% of chromosomally abnormal babies have thickened nuchal folds. Some look absolutely normal which is why, as with all screening tests, some normal babies are identified as abnormal (false positives) and some abnormal babies are identified as normal (false negatives).

→ 1.4% of normal babies will have an absent nasal bone but 67% of babies with Down's Syndrome will have an absent nasal bone.

If you have any questions during the scan please feel free to ask the Sonographer or Radiologist.

AMNIOCENTESIS AND CHORION VILLUS SAMPLING

To get an absolute answer with regard to your baby's chromosomes, you will need to have another test - either a Chorion Villus Sampling (CVS) or an amniocentesis. These tests carry a small risk (1-2%) of causing miscarriage and are not usually recommended unless you have a high risk from a screening test (ie 1:300 or greater in a nuchal scan). Your Midwife or Obstetrician can discuss these tests with you and help you reach your decision.

→ **CVS:** This is done at 11 1/2 to 13 1/2 weeks. The skin is numbed with a local anaesthetic and needle is passed into the uterus through the mother's abdomen. A sample of Chorionic Villi is taken from the placenta. This is done under ultrasound guidance to ensure there is no harm to the fetus.

→ **AMNIOCENTESIS:** This is done at 15 - 16 weeks. The skin is numbed with a local anaesthetic and needle is passed into the uterus through the mother's abdomen. A sample of amniotic fluid is taken from around the baby. This procedure is also done under ultrasound guidance.

Both tests obtain cells which are then grown to check for any abnormality. The results can be expected in approximately 2 weeks.

HISTORY

In 1992, the 10–14 week ultrasound scan was introduced at the Harris Birthright Research Centre at King’s College Hospital in London as a method of screening for chromosomal abnormalities. Many Sonographers, Obstetricians and Radiologists have now attended courses and passed examinations in the theory and practical aspects of the 1st trimester scan.

THE RESULTS SO FAR

First trimester screening with ultrasound is currently offered throughout the developed world and millions of women have been examined. Eighty percent of fetuses with chromosomal abnormalities have been identified, accepting a 5% false positive rate. This compares favourably to the detection rates achieved with screening based on maternal age alone (a 30% detection rate) and maternal age plus serum biochemistry (a 60% detection rate). The addition of nasal bone screening has increased the detection rate to 90%.

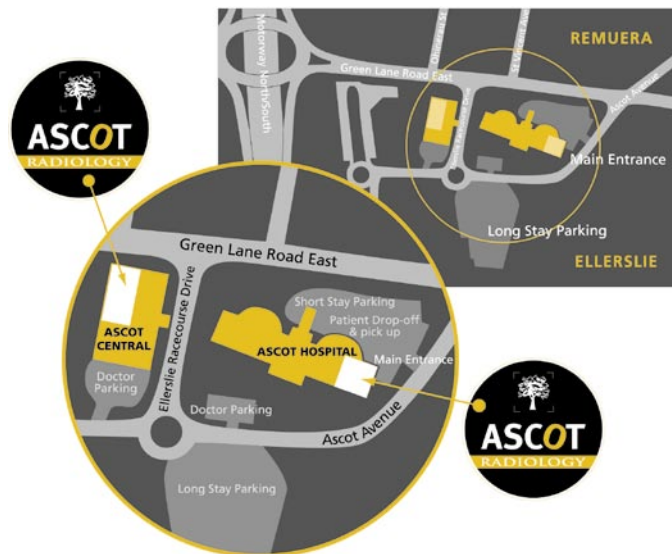
AGE (YEARS)	RISK FOR TRISOMY 21	
	AT BIRTH	AT 12 WEEKS
20	1 in 1526	1 in 1018
25	1 in 1351	1 in 901
30	1 in 894	1 in 596
32	1 in 658	1 in 439
34	1 in 445	1 in 297
36	1 in 280	1 in 187
38	1 in 167	1 in 112
40	1 in 96	1 in 64
42	1 in 55	1 in 36
44	1 in 96	1 in 20

MATERNAL AGE RELATED RISKS of having a live born child with Down’s Syndrome and the risk of carrying a fetus with Down’s Syndrome at 12 weeks of gestation.

TO MAKE AN APPOINTMENT, please call us on **0800 ULTRASOUND (0800 858 727)** or **09 520 9550** between **8:30am and 5pm Monday to Friday**.

Please make your requirements known at the time of booking your scan so they can be accommodated. Additionally, advise the sonographer of your requirements prior to performing the scan.

For a current price list, please refer to our website.



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The 11– 13^{1/2} week
CHROMOSOMAL ASSESSMENT SCAN



BE SURE TO PICK UP OUR BROCHURE ABOUT THE 18–20 WEEK SCAN BEFORE YOU GO.