

## *What is MSS?*

*MSS is a blood test available to all pregnant women in Ontario. MSS measures four different hormones that have been produced by the baby's liver and the placenta. These hormones pass into the mother's blood stream in small amounts.*

*MSS measures these amounts and compares them to the average level for women in the same week of pregnancy. From this information, the chance of a baby having trisomy 18, Down syndrome, or open neural tube defect (spina bifida) is calculated.*

It is important to be aware that every pregnant couple in the general population has a 2-3% risk of having a baby with a birth defect. While normal results of prenatal testing are reassuring, they do not guarantee the birth of a healthy baby.

## MATERNAL SERUM SCREENING (MSS)

WHAT DOES SCREEN  
POSITIVE FOR OPEN NEURAL  
TUBE DEFECT MEAN?



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## WHAT DOES SCREEN POSITIVE MEAN?

A screen positive result means the chance of the baby having an open neural tube defect is increased compared to other pregnancies. Only further testing can tell if the baby really has an open neural tube defect. When the maternal serum screen is screen positive for an open neural tube defect, most times the baby is healthy and does not have a neural tube defect.

## WHAT IS AN OPEN NEURAL TUBE DEFECT?

Open neural tube defects happen when the brain or spine does not develop properly. There are two kinds of open neural tube defects - spina bifida and anencephaly.

Spina bifida is an opening in the bones around the spinal cord. It usually involves the skin and tissues around the spinal cord. This can result in a range of outcomes for the baby. Usually there is some weakness or paralysis of the legs. There may also be problems with bowel and bladder control as well as other medical problems such as hydrocephalus (an accumulation of fluid around the brain). In most cases hydrocephalus can be treated, but the problem with the spinal cord cannot be fixed. There is no way to tell how serious the physical problems might be or whether or not the person will have mental disabilities.

With anencephaly the brain and back of the baby's skull are incompletely formed. This condition is not compatible with life and babies who have anencephaly are often stillborn or die shortly after birth.

## WHAT DOES THE RISK NUMBER MEAN?

You can ask your health care provider to give you your risk figure that is written down on the report. For example, the result might show that your chance of your baby having an open neural tube defect is 1:100. Another way to look at this is that your chance of your baby **NOT** being affected with a neural tube defect is 99 out of 100.

## YOUR RESULT IS SCREEN POSITIVE FOR AN OPEN NEURAL TUBE DEFECT – WHAT HAPPENS NEXT?

The first step your health care provider will take is to check your pregnancy date. If you have not had an ultrasound, one will be suggested to find out if the pregnancy is as far along as you thought.

If the dates of the ultrasound are different by more than 10 days, the result will be recalculated. The recalculated result might or might not be positive.

You will be offered a detailed ultrasound to look at the shape of the spinal bones and the skull of the baby. An ultrasound can see some of the reasons why the result was positive. It cannot see all the problems a baby might have. An ultrasound will find most cases of neural tube defects but can miss some.

If the ultrasound does not show the reason for the positive result, you can consider having amniocentesis to find out if the baby has an open neural tube defect. Before having amniocentesis, more counselling will be available to you.

## WHAT IS ULTRASOUND?

Sound waves are used to create a picture of the developing baby. This allows the specialists to look at the baby on a television monitor. Ultrasound is considered to be safe for a baby and mother.

## WHAT IS AMNIOCENTESIS?

Amniocentesis is a test done to obtain a sample of the amniotic fluid surrounding the baby. It involves the insertion of a needle through the woman's abdomen into the uterus and the removal of a small amount of the fluid. Ultrasound is used to locate the position of the placenta and the baby, and to decide on the best "pocket" of the amniotic fluid to sample. There is about a 1/200 or 0.5% chance of miscarriage associated with this procedure.

Amniocentesis can detect most neural tube defects by measuring the amount of a substance called alpha fetoprotein (AFP) in the amniotic fluid. If the AFP is elevated, the fluid is tested for acetylcholinesterase (AChE). This substance usually is not found in the fluid unless the baby has open spina bifida. Most times, results are available in about 2 weeks.

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