



The importance of amniotic fluid

Amniotic fluid is essential for pregnancy and foetal development. Amniotic fluid is a watery substances residing inside a casing called the amniotic membrane or sac. Amniotic fluid surrounds the foetus for the duration of pregnancy. This fluid not only cushions and protects the foetus but also plays a crucial role in the development of several foetal organs, including the lungs, kidneys and gastrointestinal tract. Amniotic fluid keeps the umbilical cord from being compressed against the uterine wall. The amount of amniotic fluid also reflects the baby's urine output and provides an important, measure of foetal health.

Most women carry between 500 and 1000ml of amniotic fluid. Too much or too little amniotic fluid is linked to problems in foetal development and complications during pregnancy.

Hydramnios

Too much amniotic fluid (polyhydramnios or hydramnios) is problematic because it stretches the uterus and puts pressure on the diaphragm of pregnant women. This can result in preterm labour (before 37 weeks gestation) or premature rupture of the amniotic membrane. When the amniotic sac bursts, excessive fluid leaves the uterus, increasing the risk of placental abruption (early detachment of the placenta) or umbilical cord prolapse (when the cord falls down through the cervical opening) where it may be compressed. Hydramnios is also associated with foetal birth defects. Excessive amniotic fluid can result in severe breathing problems for the mother.

Causes:

Amniotic fluid may accumulate due to an overproduction of fluid, problems with the fluid being taken up, or both. Maternal or foetal factors potentially contributing to hydramnios include:

- Diabetes in pregnant women
- Multiple births (more than one foetus)
- Rh incompatibility (occurring when a pregnant woman has Rh-negative blood and the foetus has Rh-positive blood)
- Birth defects, resulting in a blocked oesophagus/abnormal swallowing due to problems with the central nervous system (such as spina bifida) or chromosomal abnormalities
- Gastrointestinal abnormalities that block the passage of fluid
- Twin-to-twin transfusion syndrome
- Heart failure
- Congenital infection (acquired in pregnancy)
- Unknown factors

Symptoms:

- Abdominal discomfort
- Bloating
- Swelling in the legs
- Rapid growth of the uterus
- A larger uterine size (fundal height) than expected for gestational age
- Uterine contractions
- Breathing difficulties

Diagnosis:

The symptoms of hydramnios are similar to other medical conditions and pregnancy itself. Diagnosis is generally made on the basis of an ultrasound scan, together with a complete medical history and physical examination. An ultrasound is a test that uses sound waves to create a picture of internal structures and is able to measure pockets of fluid to estimate the total volume. This form of imaging may be helpful in ascertaining the cause of hydramnios, such as multiple pregnancy or birth defects. Hydramnios is also detected during a prenatal exam, when your fundal height (the distance from your pubic bone to the top of your uterus), measures

outside the normal range.

Treatment:

The primary aim of treatment is to relieve the mother's discomfort and safely continue with the pregnancy. Factors to consider include maternal health, medical history and personal preferences; extent and expected outcome of the condition, as well as maternal ability to handle specific medications, procedures or therapies.

Treatment options may involve close monitoring and frequent follow-up visits to oversee the amount of amniotic fluid. Your doctor may perform a procedure called amnioreduction-amniocentesis, to remove some of the excess amniotic fluid. The procedure involves inserting a needle into the uterus and amniotic sac. This process may need to be repeated. If the condition endangers the wellbeing of the mother or the foetus, early delivery may be required.

Hydramnios may cause preterm labour. Maternal bed rest and the use of steroids to enhance foetal lung maturity may be necessary. Excess amniotic fluid makes it easier for the foetus to flip and turn. This increases the risk of baby being in a breech (feet-down) position. Breech babies can sometimes be moved into the correct (head-down) position, but a caesarian may be required.

Oligohydramnios

Oligohydramnios is a condition in which there is too little amniotic fluid surrounding the foetus. Oligohydramnios occurs in approximately 4% of all pregnancies. The condition is problematic because it may affect foetal development or cause complications during delivery. Insufficient amniotic fluid for long periods of time may result in abnormal or incomplete lung development (pulmonary hypoplasia). Poor foetal growth (intrauterine growth restriction) is also associated with decreased amounts of amniotic fluid. Oligohydramnios increases the risk for compression of the umbilical cord and aspiration of thick meconium (baby's first bowel movement).

Causes:

- Oligohydramnios is generally caused by conditions that affect or prevent the production of amniotic fluid including:

- Twin-to-twin transfusion syndrome
- Tear in the amniotic sac before labour
- A problem with the placenta, such as placental abruption (the placenta either partially or fully peeling away from the uterine wall)
- Post-term pregnancy
- Birth defects, particularly malformations of the kidneys and urinary tract
- Problems in the mother, such as dehydration, diabetes or high blood pressure
- Complications of certain medications, such as angiotensin-converting enzyme (ACE) inhibitors

Symptoms:

Oligohydramnios usually does not result in any symptoms. If the amniotic membrane ruptures prematurely, you may experience a gush of fluid from the vagina. The fluid may leak out slowly, resulting in constant wetness. Your health provider may notice that your abdomen is smaller than expected for your gestational age.

Diagnosis:

The condition is diagnosed by means of your symptoms (if present), medical history, a physical examination and relevant tests. Your doctor will perform an ultrasound to view the uterus and foetus for any signs of a problem and to measure the levels of amniotic fluid. Blood tests may be required, to detect health problems in the mother. Other tests may be ordered, if your doctor suspects a problem in foetal health.

Treatment:

Treatment generally involves close monitoring to ensure foetal health and detect any worsening

of the condition. More frequent health visits and ultrasounds are necessary in this regard. You may be advised to drink more fluids, especially water. Your doctor may add fluid to the amniotic sac after you are in labour. This procedure (known as amniofusion) helps cushion the umbilical cord during contractions.

Prevention:

The only way to prevent oligohydramnios is to identify the underlying cause and treat it if possible. Discuss any medication, supplements or alternative treatments you are using before getting pregnant. A healthy diet, adequate rest and fluid intake, vitamin supplementation and regular exercise, all contribute to a healthy pregnancy. Schedule and attend regular check-ups throughout your pregnancy, and undergo the necessary screenings and blood tests.

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