



## Multiple pregnancy complications

Courtesy of Prof. Shane Higgins' website

## Multiple pregnancy complications | Discover types of multiples & risks

This feature explores some of the risks and complications that may occur in multiple pregnancies. Below you can read some of the more commonly asked questions about multiple pregnancy complications and easily reference the answers, by clicking on the question.



## 1. Multiple pregnancy definition

A twin, triplet or a higher-order pregnancy is known as a multiple or multi-fetal pregnancy.



## 2. How do multiple pregnancies occur?

This kind of pregnancy may result from two or more fertilisation events, from a single fertilisation followed by the splitting of the zygote or from a combination of both.

## 3. Multiple births and assisted reproductive technology

Assisted reproductive technology dramatically increased both the rate and the number of twin and higher-order multiple births since 1980. Prevalence increase of these births is very concerning due to the corresponding increase of preterm births, which compromises neonatal survival and augments the risk of lifelong disability.

## 4. Higher chances of multiple pregnancy

**Race:** there is a highest rate of multiple births/twinning in African American women, while Hispanic, Asian and Native American women have lower rates.

**Maternal age:** ages between 15 and 37 years have highest rates of dizygotic twinning due to the increase of FSH stimulation, and these rates also increase with advancing maternal age because the use of assisted reproductive technology.

**Parity:** it has been shown that increasing parity increase the incidence of twinning.

**Heredity:** regarding twinning, family history of the mother is more important than that of the father.

**Nutritional factors:** greater nutritional status is reflected in an increase twinning rate.

**Pituitary gonadotropin:** the common factor linking race, age, weight and fertility to multifetal pregnancy may be higher FSH levels, especially after stopping hormonal contraception and in advanced maternal ages.

**Fertility therapy:** ovulation induction with FSH and/or chorionic gonadotropin increase the chances of multiple ovulations.



### 5. Types of multiple pregnancies

Twin fetuses usually result from the fertilisation of two separate eggs (dizygotic or fraternal twins). Less likely, twins are formed from a single fertilised egg that divides (monozygotic or identical twins). The formation of higher-order fetuses occurs in the same way.

Dizygotic twins are not true twins. They result from the maturation and fertilisation of two different eggs during a single ovulatory cycle. Genetically speaking, these twins are like any other pair of siblings. On the other hand, monozygotic or identical twins, have the same genetic heritage, but are not usually absolutely identical.

The process of monozygotic twins depends very much on when division happens. If fertilised eggs divide before 72 hours after fertilisation, a dichorionic, diamniotic twin pregnancy occurs.

There may be a placenta for every fetus or a single and fused placenta.

If division occurs between the days 4 and 8 after fertilisation, a monochorionic, diamniotic twin pregnancy develops.

After 8 days of fertilisation, differentiation of the chorion and amnion have already occurred, and division results in two embryos in a common amniotic sac, which is also known as a monochorionic, monoamniotic twin pregnancy.

## 6. Diagnosis of multi-fetal pregnancy

Clinical evaluation

Sonography (ultrasound)

Radiography and MRI can be used if the previous tests are uncertain

Biochemical tests

## 7. Multiple pregnancy risks

A multiple pregnancy is associated with an increased risk of complications for both mother and child, and these risks and complications increase with the number of fetuses. It is apparent that women were not intended to concurrently bear more than one offspring.

These pregnancies are often viewed as a novelty or miracle, but we cannot forget that these represent a potentially risky journey for the mother and her unborn children.

Also, the risks for congenital malformations are increased with multi-fetal gestation. This increased risk is for each fetus and is not simply due to the existence of more fetuses per pregnancy. The mother may also have higher obstetrical complications and mortality rates, which increases with the quantity of fetuses.

## 8. Complications of multiple pregnancy

Miscarriage or spontaneous abortion is more likely to occur with multiple pregnancies. The rate of congenital malformation is significantly increased in multi-fetal pregnancies compared with singletons. Due to restricted [fetal growth](#) and [preterm labour](#), multiple pregnancies are more likely to be low birth-weight than singleton ones.

In general, the degree of growth restriction increases with the fetal number. Hypertension disorders due to pregnancy are more likely to develop with multiple fetuses, but twin pregnancies are more likely to be born earlier than term before pre-eclampsia can develop.

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The duration of gestation decreases with increasing fetal number producing preterm birth. Delivery before term is a major reason for increased neonatal morbidity and mortality rates in multiple pregnancy. Compared with singletons, twins have been considered cognitively delayed, related to an increased risk of fetal-growth restriction and congenital malformations.

Another complication which can occur is conjoined twins, also known as Siamese twins. This is the result of an incomplete splitting of an embryo. However, this may occur due to an early fusion of two separate normal embryos.

Another possible multiple pregnancy complication is external parasitic twin. This happens when there is an abnormal fetus or fetal parts organised into a mass, attached externally to a normal fetus.

Fetus-in-fetu occurs in early stages of development, when one of the embryos may be involved within the other. Development of this parasitic twin usually ceases in the first semester of pregnancy. This results in the loss of many organs and the presence of normal parts of the body. [Anomalies](#) in the placenta-fetuses system may occur, producing vascular anomalies affecting a fetus' perfusion and development more than the other.

## 9. Multiple pregnancy prenatal care and ante-partum management

The medical team needs to provide close observation of the mother and her fetuses to prevent or interdict complications as they develop. This can be done with regular prenatal consultations and other specific studies.

The maternal diet must provide additional requirements for calories, protein, minerals, vitamins and essential fatty acids.

Ultrasound becomes even more important than ever, with extra sonographic examinations, especially during the third trimester to make sure normal fetal growth is happening.

Assessment of the amniotic fluid volume is very important.

Although they are limited, the non-stress test or biophysical profile is commonly used in management of twins or higher-order multiple pregnancies.

Pulmonary maturation is a very important factor to keep in mind while evaluating the fetuses.