

# Multiple pregnancies

Multiple pregnancy is the development in the womb and the subsequent birth of more than one fetus. Depending on the number of fetuses, we later talk about **twins = gemini** , **triplets = trigemini** , etc. **There are more complications** associated with multiple pregnancy , because it represents greater demands, burdens and risks for the organism, therefore women with multiple pregnancies have **increased perinatal care**

## Epidemiology

With the developing system of assisted reproduction, the incidence of multiple pregnancy is increasing. The possibility of twins also increases when one of the parents is a twin, or twins are more common in the family. Racial frequency also plays a role in the rate of occurrence of multiple pregnancy, the **highest rate** is found in **African countries** , as opposed to, for example, **Japan** , where the number of multiple pregnancies is the **lowest**.

## Etiology

If we further focus on twins, which are the most common of multiple pregnancies, we can further divide them into monozygotic and dizygotic twins.

### Monozygotic twins

In Czech, called **identical twins** . A zygote was formed **by fertilization of one egg with one sperm** . They arose from the division of a common base in the morula stage, therefore they have the same genetic make-up. Depending on whether they have their own amniotic sac and their own placenta, or if they have one of them in common, or if they have everything in common, they can further be divided into:

- **Gemini bichoriati** - each fetus has its own placenta
- **Gemini monochoriata** - fetuses have a common placenta
- **Gemini biamniati** - each fetus has its own amniotic sac
- **Gemini monoamniati** - fetuses have common amniotic sacs

In the medical report, we also find the designation bi-bi, bi-mono, mono-bi, mono-mono. **Gemini monochoriata biamniati** are born the most .

### Feto-fetal blood transfusion syndrome

In the case of monozygotic twins, the occurrence of common blood circulations in the common placenta is possible, and these couplings can then be the reason for the **short-circuiting of the blood circulation** and thus the feto-fetal blood transfusion syndrome develops. At that moment, one fetus suffers **from hypervolemia** - it receives more amniotic fluid, more nutrients, and its organism is overloaded, the other fetus suffers from hypovolemia - it has little amniotic fluid, lacks nutrients, and its organism suffers.

### Therapy

Feto-fetal blood transfusion is treated in such a way that the existing blood shunts must be **interrupted using laser coagulation** under ultrasound control, otherwise both fetuses may die. Interruption of blood shunts is of greatest importance in the early stages of pregnancy, but even later the development of the twins is closely monitored in case of further shunts.

### Dizygotic twins

Dizygotic twins, or **fraternal twins**, are more common than monozygotic twins. They are formed by the fertilization of two eggs by two sperm. Dizygotic twins have separate envelopes and therefore bear the designation gemini bichoriata biamniata. Each fetus has its own placentas and the genetic make-up is different.

## Overview of maternal and fetal risks in multiple pregnancy

### Maternal risks

- more numerous early gestosis
- higher incidence of miscarriages
- more frequent occurrence **of anemia and hypertension**
- deterioration of venous circulation and higher formation of varicose veins
- **breathing difficulties** due to a higher diaphragm
- more frequent occurrence of **preeclampsia symptoms**

### Risks to the fetus

- **vanishing twin syndrome** (pregnancy develops as a singleton from around the 10th week)
- higher risk of fetal death (the highest risk is around the 28th week in monochorionics, in bichorionics the risk increases with higher stages of pregnancy)
- **asymmetric intrauterine development of the fetus** - different development of both fetuses, one is overloaded, the other is deprived
- twin-twin transfusion syndrome - viz. photo-fetal transfusion syndrome
- **premature birth** - earlier outflow of amniotic fluid and premature birth poses significant risks for fetuses (more than 50% of twins are born before 37 weeks)

## Prenatal care

Due to higher complications in pregnancy, prenatal care in multiple pregnancies has certain specifics. **By the 14th week**, it is necessary to determine **chorionicity and amnionicity according to sonographic examination** . During the first trimester, a combined screening for the detection of chromosomal defects is available .

During prenatal care, emphasis needs to be placed on:

1. early diagnosis of the number of fetuses and determination of the number of fetal membranes and placentas
2. early diagnosis of birth defects and complications
3. early diagnosis of imminent premature birth

The frequency of **prenatal check-ups is more frequent** and they are more individual than for a single pregnancy. The frequency of ultrasound examinations for monochorionics is every two weeks, prenatal cardiotocographic monitoring is introduced from the 36th week.

**With an ultrasound examination, we determine:**

- detection of multiple pregnancy and its dating
- determination of the number of fetal membranes and placentas
- along with combined screening for chromosomal abnormalities and birth defects
- assessment of the state of the placenta
- amount of amniotic fluid
- assessing fruit vitality and monitoring their growth and development
- flow measurements
- position of the fruits

## Birth

Special perinatology centers are equipped with intermediate and intensive perinatal care (VFN-Maternity in Apolínář from the 24th week, FTN-Maternity in Krč from the 29th week, etc.) Only full-term twins, bichorionic, diamniotic (37th week) are born in the standard delivery rooms and above).

### Timing of childbirth

- Gemini bichorionic, diamniotic - until the 39th week
- Gemini monochorionic, diamniotic - up to the 36th week
- Gemini monochorionic, monoamniotic - up to 34+6 weeks

**Spontaneous vaginal birth** can give birth to **bi-bi twins** (preferably in the head-down position) and **mono-bi** (informed consent to spontaneous birth is required here). Other cases and more than twin pregnancies are delivered by caesarean section.

In 2011, more than 70% of newborns were born from multiple pregnancies in the Czech Republic.

If we find that there are bi-bi twins in the uterus and one is in **a position with the head down and the other with the pelvic end** , then we lean towards the planned caesarean section, this is the so-called **collision position of the two fetuses** .

### Management of vaginal delivery of twins

Vaginal delivery of twins requires a greater number of medical personnel, namely: an experienced and qualified obstetrician with an assistant, a midwife, the presence of an anesthetist and a neonatologist, and also the need for equipment for continuous monitoring of both fetuses and a bedside ultrasound machine.

#### Principles

Monitoring of the clinical course of childbirth. Continuous cardiotocographic monitoring of both fetuses. It is possible to apply epidural analgesia . After the birth of the first twin, the umbilical cord is ligated and the condition, position and insistence of the second twin must be ascertained immediately. By reducing the time delay between the births of the first and second twins, we can, with the mother's consent, administer an infusion with oxytocin and perform a diruption of the sac of membranes, as the second fetus may be at risk of hypoxia at this time . The time interval between births should not exceed 60 minutes. Uterotonics for active management III. we can only apply maternity leave after the birth of the second twin.

# Links

## Related articles

- Pregnancy
- Birth
- Physiology of pregnancy
- Premature delivery
- Classification of newborns

## References

- HÁJEK, Zdeněk – ČECH, Evžen – MARŠÁL, Karel, a kolektiv.. *Porodnictví*. 3.přepracované a doplněné vydání edition. Praha : Grada Publishing a.s., 2014. 576 pp. ISBN 978-80-247-4529-9.