



Prevention of preterm birth in multiple pregnancies

Dear parents-to-be,

Preterm birth is a birth before the 37th week of pregnancy. Worldwide, almost 15 million newborns are born prematurely. In Europe, the proportions vary between 5 and 12%, in twin and triplet pregnancies the risk of delivering before the 37th week is several times higher, reaching about 50% and 90% respectively. That's why prevention is so important here.

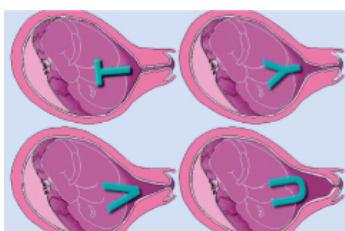
Preterm birth is considered a syndrome with many causes such as infections (e.g. after artificial insemination), physical or mental stress of the mothers, genetic predisposition and, in the case of multiples, overstretching of the uterus with pressure on the cervix. In general, a distinction must be made between a spontaneous preterm birth and an intended premature birth.

The later babies are born, the higher their chances of survival and the lower are the long-term health complications. Even after 34 weeks, premature babies have more risks for normal development compared to mature babies. In the case of multiple gravidities, in which the children share a placenta with vascular connections, it can lead to the formation of unequal amounts of amniotic fluid, which can lead to an even higher risk of preterm birth.

The early selection of pregnancies at high risk of preterm birth should be at the centre of all efforts to be able to start appropriate therapy as early as possible.

Risk factors and early detection of an increased risk of premature birth

Already from the patient's history one can often derive risks for a preterm birth. For example, preterm birth or late miscarriage in a previous pregnancy and artificial insemination already increase the risk of preterm birth of the present pregnancy. In addition, several social factors such as a stressful job, single mothers without a partner, smoking, underweight or very young or advanced age are the risk of preterm birth. A very large difference in weight between the children or diseases of the mothers or a child can favor "indicated" premature births. To better assess the risk of preterm birth the length of the cervix should be measured by a transvaginal ultrasound examination every 4 weeks. Due to the overstretching of the uterus, the cervix opens from the inside, namely from a T-shape to a Y, V and finally to a U (see figure). The earlier a shortening of the cervix occurs, the higher is the risk of preterm birth. The best way to do this is to detect it as early as possible.





Which preventive measures are useful for multiple pregnancies?

Some background risks, such as smoking, underweight or increased stress can theoretically already be eliminated "**primarily**" (before or at the beginning of pregnancy) and thus reduce the risk for preterm birth. In the case of higher-grade multiples, in rare cases it can be considered whether to continue a pregnancy with more than 3 children or discuss a selective reduction of the fetuses. However, discussions on this should only take place in centers with experience. Hospital admission per se cannot reduce the risk of preterm birth and may even be harmful. However, multiple pregnancies that are admitted for other reasons or under labor are excluded.

As part of "**secondary**" **prevention**, i.e. in the case of an increased risk already detected (by sonography) during pregnancy, various measures are discussed. An operative closure of the cervix (**cerclage**) has no significant advantage in multiple pregnancies and can even increase risks for mothers. Therefore, international guidelines advise against it as routine. The administration of synthetic progesterone (corpus luteum hormone) is also more likely to increase the risk of preterm birth and is not indicated in multiple pregnancies. According to the latest evaluations, the **natural progesterone**, which is administered vaginally, also shows no positive effect on preventing premature birth or the short- or long-term outcome of multiples. Therefore, it has not been approved by the U.S. Food and Drug Administration (FDA). The application of a cervical **pessary** is a low-burden and cost-effective method to prevent premature birth in twin and higher-grade multiple pregnancies (figure). In studies in which experienced physicians carried out the therapy, a significant reduction in preterm birth rates and an improvement in the short- and long-term outcome of children could also be achieved compared to progesterone. Hereby, it is important to recognize a shortening of the cervix early (from 16 weeks) and then to start this therapy early.

Tertiary prevention aims to improve the accompanying circumstances for preterm babies even before birth in the event of a foreseeable preterm birth. These include the transfer or admission of the pregnant woman to a perinatal centre, short-term (maximum 48 hours) inhibition of labor and the use of corticosteroids to promote pulmonary maturity.

Who should I contact if I have an increased risk of preterm birth?

In the case of an early detection of a shortened cervix, pregnant women should also visit a qualified clinic, even if a shortened cervix is not necessarily a reason for hospitalization. In case of acute symptoms of preterm birth (preterm labor or rupture of the amniotic sack) before 34 weeks, pregnant women should visit a tertiary perinatal center with expertise in the care / birth of multiple pregnancies with a neonatal intensive care unit. Empathetic and professional support with intensive follow-ups is crucial to prevent early multiple births and their risks.