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Uterine activity: implications for the condition of the fetus.

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AIM: The aim of this review is to provide more insight in the fetal mechanisms as a response to uterine contractions and to emphasize the importance of correct assessment of uterine activity (UA) patterns during labor.

STUDY RESULTS: UA causes a decreased flow through the uterine artery. In the healthy uncompromised fetus, this will not cause fetal acidemia. The fetus has developed certain protection mechanisms to survive labor; (1) During a contraction, fetal preload increases and enables the fetus to maintain a constant blood flow through the umbilical artery and (2) UA increases the blood flow in the fetal middle cerebral artery, i.e., a brain sparing effect. The shortcoming of those protection mechanisms in the compromised fetus and in case of excessive UA increases the risk of adverse fetal outcome. The brain sparing effect will become more pronounced to compensate for the decreased umbilical artery blood flow and fetal oxygen saturation. Maintenance of normal UA, especially a sufficiently long relaxation time, is essential so that the supply of well oxygenated maternal blood to the intervillous space will be restored and the fetal cerebral oxygen saturation can remain stable.

CONCLUSION: Adequate UA monitoring is a prerequisite for proper reading and interpretation of cardiotocograms. It alarms in cases of excessive UA and can help to prevent fetal acidemia. Uterine contraction monitoring deserves full attention in daily obstetric practice.