

THE EFFECT OF ENDURANCE SPORTS ON MATERNAL FERTILITY AND FETAL DEVELOPMENT

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Every women training for and performing in endurance sport events such as the Ironman Distance Triathlon (3,8 km swim; 180 km bike; 42,2 km run) eventually considers the long-term effects on her fertility and the developing fetus. A systematic review of the literature shows that the nutrition status before and during pregnancy and her body composition have a profound effect on placental function, which is the main source of nutrients for the fetus. By measuring the activity of the placental A amino-acid transporter, we can study how different lifestyles affect the placental function. The results show that women with a higher circumference of the upper arm, which relates with muscular mass, have a higher activity of this transporter, meaning that the fetus is supplied better with nutrients. The background physiology shows that the skeletal muscles produce and secrete an endocrine factor which serves as a signal to the placenta. Higher concentrations of this endocrine factor cause the placenta to transfer more nutrients to the fetus since the body is presumed to be in good, not starving, condition. It was also shown that a critical period for stopping the endurance exercise, though moderate exercise is still advised, is at least 3 months before pregnancy. Therefore, it is worth taking care of whole body fitness, but be cautious about when to stop performing long distance competitions and trainings.

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