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Exercise during pregnancy, gestational diabetes and risk of macrosomia: a randomised controlled trial

by

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Objective: We examined whether regular light-intensity resistance exercise (3 training sessions/week) performed during the second and third trimesters of pregnancy affects the association between gestational diabetes mellitus (GDM) and newborn's birth weight.

Methods: We randomly assigned 160 sedentary healthy gravida free of diabetes mellitus to either a training or a control group (n=80 each). We recorded birth weight and newborns were dichotomized as normal birth weight (<4000g) or with macrosomia (>4000g). GDM was defined as plasma glucose concentration one hour after a 75g oral glucose tolerance test (2h-glucose) ≥140mg/dl.

Results: 2h-glucose was significantly and positively associated with birth weight in controls (β=5.774; 95%CI: 2.130-9.417; P=0.002) but not in the training group (β=0.592; 95%CI: -2.670-3.855; P=0.718). In the control group, the risk of having a macrosomic newborn was higher in GDM than in non-GDM gravida (odds ratio: 4.683; 95%CI: 1.579-13.851; P=0.005). No GDM gravida from the training group had an offspring with macrosomia.

Conclusion: Regular light-intensity exercise performed over the second and third trimesters of pregnancy attenuates the impact of GDM on the risk of macrosomia.

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