Research Roundup – Women’s’ Health Edition

**Title:** The effect of physical activity on reproductive health outcomes in young women: a systematic review and meta-analysis

**Journal**: Human Reproduction Update

**Link:** <https://academic.oup.com/humupd/article-abstract/25/5/542/5521467>

**Reference:** Mena, G. P., Mielke, G. I., & Brown, W. J. (2019). The effect of physical activity on reproductive health outcomes in young women: a systematic review and meta-analysis. *Human Reproduction Update*.

**Study**

* Study design: Systematic review and meta-analysis
* Subject data:
	+ 18 studies (4 RCTs, 11 randomised comparison trials, 2 non-randomised comparison trials, 1 single-arm clinical trial).
	+ Premenopausal women aged 18-46 years.
* Intervention:
	+ Fertility treatment and common treatment for women with PCOS.
* Data measured:
	+ Pregnancy and live births
	+ Pregnancy with fertility treatments
	+ Improved menstrual irregularity
	+ Conception rates
	+ PCOS symptoms
* Measurement intervals: varies depending on study

**Results**

* Major findings & data
	+ Throughout this review, the complexities of the different study designs, and the wide variation in the nature and timing of the intervention and comparison strategies, made it difficult to disentangle the effects of physical activity (PA) from those of other intervention strategies such as diet or concurrent pharmaceutical treatments.
	+ RCT studies included within the meta-analysis showed a higher pregnancy rate in the physical activity intervention groups compared to controls; **52.1% of women pregnant with PA compared to 23.5% of women pregnant without PA**.
	+ Results from one fertility treatment trial, which compared weekly group sessions with a kinesiologist and a dietitian against standard fertility treatment, showed that the spontaneous pregnancy rate was markedly higher in the intervention (exercise and diet) group **(50% spontaneous pregnancy) than in the comparison (standard fertility TX) group (12.9% spontaneous pregnancy).**
	+ Menstrual regularity was also improved in **7** trials which assessed this outcome. The largest effect was in a three-arm trial; the two combined exercise and diet groups showed higher rates of improvement of menstrual regularity **(diet + aerobic = 42.9%; diet + combined aerobic and resistance training = 44.4%) than the diet only group (21.4%).**
	+ One fertility treatment trial showed that **natural conception rates were 42.3%, which was 26.1% higher than those in the control group (16.2% conception rate).** The intervention group combined diet, exercise and behavioural counselling.
	+ The systematic review showed that physical activity, *with or without diet,* can lead to resumption of ovulation in overweight or obese women with PCOS. Overall, menstrual regularity improved **from 56.2% in control groups to 61% in groups that had a PA intervention**.
* Adverse events: None reported.
* Limitations.
	+ Not all studies included had a control group.

* *Erin’s take – The benefits of physical activity are well documented in scientific literature. However, there is less research focus on the specific benefits relating to reproductive health outcomes for women. The findings of this review indicate that physical activity, alone or in combination with diet, may have beneficial effects on some reproductive health outcomes for women, including those diagnosed with poly-cystic ovarian syndrome (PCOS). There are even some benefits independent of weight loss. Further research is needed to highlight the optimal type of physical activity for these outcomes. However, some studies did show a slight advantage of combining strength training with aerobic training. Thus, for women struggling with PCOS and/or infertility, incorporating a variety of physical activity into their daily life would be a smart decision.*