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The Impact of Exercise on Pregnant Women Aged 18-40 and Fetal Development

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OSTEOPATHIC MEDICINE

The Impact of Exercise on Pregnant Women Aged 18-40 and Fetal Development

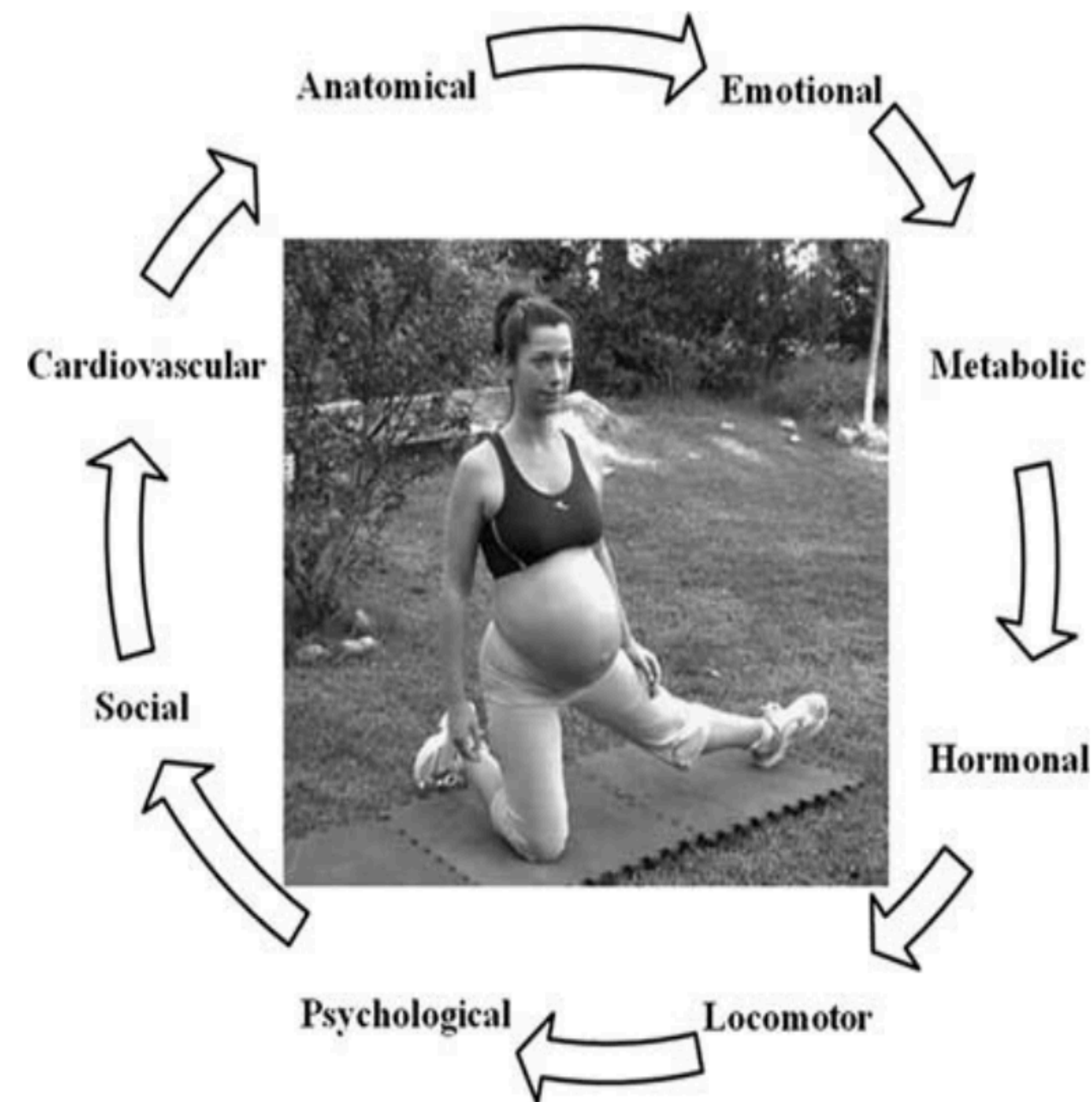
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Background

- 68% of those who performed minimum level exercise prior to pregnancy stopped completely during early pregnancy.
- Women stop exercising during pregnancy due to worries about the impact it may have on the development of the fetus.



Results

- Starting moderate-intensity, weight bearing exercise early in pregnancy increases placental growth rate and volume.
- Exercise reduces the risks of excess gestational weight gain and high maternal body weight before pregnancy.
- Physical exercise reduces the risk of gestational diabetes mellitus.

Table II. Placental growth rate and gross volumes

Characteristic	Control group	Exercise group	Statistical significance
Midtrimester placental growth rate (cm ³ /wk)	21 ± 1	26 ± 2	P= .04
Placental volume (cm ³)			
At 20 wk	181 ± 9	225 ± 15	P= .02
At 24 wk	264 ± 13	327 ± 16	P= .004
After delivery	414 ± 14	462 ± 18	P= .05

	Exercise group	Control group	OR (95% CI)	P
GDM, %	29 (22.0), n = 132	54 (40.6), n = 133	0.412 (0.240–0.705)	<.001
75-g OGTT glucose level, mmol/L				
0 h	4.76 ± 0.41 ^b	4.96 ± 0.51 ^c	/	.001
1 h	7.99 ± 1.67 ^b	8.57 ± 1.86 ^c	/	.009
2 h	6.57 ± 1.18 ^b	7.03 ± 1.62 ^c	/	.009
Gestational weight gain, kg				
Study entry to 25 ⁺ 6 wk gestation	4.08 ± 3.02 ^b	5.92 ± 2.58 ^c	/	<.001
26 ⁺ 1 to 36 ⁺ 6 wk gestation	4.55 ± 2.06 ^d	4.59 ± 2.31 ^a	/	.9
Total	8.38 ± 3.65 ^d	10.47 ± 3.33 ^a	/	<.001

Discussion

- Exercise-induced improvements in placental function leads to increases in nutrient delivery and appropriate fetal growth through the course of gestation.
- Implementing exercise early enhances maternal and fetal health during and after pregnancy.

Materials and Methods

- **Objective:** To understand the impact of physical exercise on maternal and fetal development
- **Databases:** PubMed, Embase, Scopus, Science Direct
- **Search terms:** Pregnancy, exercise, fetal development, maternal development, gestational diabetes mellitus, gestational weight gain

Limitations

- Socioeconomic factors may influence access to exercise programs.
- Small sample size may limit the generalizability of the study to all pregnant women.
- Differences in dietary intake may affect the measurements obtained.

Acknowledgements

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2. Wang C, et al (2017). A randomized clinical trial of exercise during pregnancy to prevent gestational diabetes mellitus and improve pregnancy outcome in overweight and obese pregnant women. *Am J Obstet Gynecol*, 216(4), 340-351