Exercise and Pregnancy Loss

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Clinical Inquiries provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (http://www.cebm.net/?o=1025).

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Clinical Question

Is there an association between exercise and first- to mid–second-trimester pregnancy loss?

Evidence-Based Answer

Regular exercise for up to seven or more hours per week (including low-intensity and high-intensity aerobics, jogging, cycling, and swimming) is not associated with increased rates of miscarriage in the first to mid-second trimesters. Patients may continue bending and lifting at work, because these activities are not associated with increased first-trimester miscarriage rates. (Strength of Recommendation: C, based on cohort studies.) Work that requires frequent crouching may be associated with increased miscarriage rates.

Evidence Summary

A large six-year prospective cohort study of 90,270 women in Denmark compared exercise duration and miscarriage rates at four gestational ages.[1] It found no significant increase in exercise-related miscarriage risk. Investigators divided the women into seven groups based on exercise duration (zero to more than seven hours per week) and evaluated miscarriage rates before 11 weeks' gestation, between 11 and 14 weeks, between 15 and 18 weeks, and between 19 and 22 weeks. Women performed many types of exercise, including low-impact and high-impact aerobics, swimming, jogging, cycling, and horseback riding. No duration of exercise or gestational age was significantly correlated with miscarriage.

Another prospective cohort study followed pregnancy outcomes among 733 Swedish women and found no association between regular exercisers (n = 561) compared with nonexercisers (n = 172) and miscarriage risk (exercisers vs. nonexercisers, odds ratio [OR] = 0.6; 95% confidence interval [CI], 0.4 to 1.0).[2] Investigators did not describe the gestational age at the time of miscarriage, nor did they characterize the type, frequency, or duration of exercise.

A systematic review of three cohort studies (N = 21,551) evaluated light, moderate, or vigorous exercisers; exercisers vs. nonexercisers; and duration and speed of exercise.[3] It found no significant relationship with miscarriage in any group. One prospective cohort study (n = 170) found no relationship between miscarriage rates and bending or lifting or total hours worked. The authors did not categorize the gestational age at miscarriage, or the other two cohort studies by type.

A prospective cohort study of 5,144 women in California found no relationship between bending, amount of lifting, or hours worked and miscarriage during the first trimester.[4] Investigators measured total time working, amount of standing and bending at work, hours spent doing housework or yard work, and amount of lifting objects more than 15 lb (6.8 kg) at work or at home. No physical activity measure (at work, at home, or combined) was associated with an increased miscarriage rate.

Similarly, a prospective study of 3,906 Swedish women found no association between heavy lifting and miscarriage before 13 weeks' gestation (number needed to harm = 125; 95% CI, 0.71 to 1.74).[5] In Sweden, women have the right to perform less strenuous work in the 60 days before their estimated delivery date.

A retrospective analysis of a cohort of 1,427 Chinese women textile workers (originally recruited for a case-control study of ▶

breast cancer) demonstrated that work with light and moderate physical activity was associated with a lower risk of miscarriage than sedentary work (light physical activity, OR = 0.32; 95% CI, 0.17 to 0.61; moderate physical activity, OR = 0.43; 95% CI, 0.23 to 0.80).[6] Women employed in jobs requiring frequent crouching (with increased intra-abdominal pressure) had an increased risk of miscarriage (OR = 1.82; 95% CI, 1.14 to 2.93), although investigators did not specify gestational age at time of miscarriage.

Recommendations from Others

The American College of Obstetricians and Gynecologists recommends that active women continue to exercise at moderate intensity for 30 minutes on most days of the week during pregnancy.[7] Women who perform strenuous routines should be followed closely. Women who did not previously exercise should be evaluated before beginning an exercise routine. Absolute contraindications to exercise include hemodynamically significant heart disease, restrictive lung disease, incompetent cervix or cerclage, multiple gestation at risk of premature labor, persistent second- or third-trimester bleeding, placenta previa after 26 weeks' gestation, premature labor during the current pregnancy, ruptured membranes, and preeclampsia or pregnancy-induced hypertension.

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