



## ACSM CURRENT COMMENT

### Exercise During Pregnancy

Exercise and physical fitness have dramatically gained in popularity over the past several years, and have assumed important roles in the lives of many women. Physical activity and reproduction are normal parts of life, and for normal healthy women, combining regular exercise and pregnancy appears to benefit both mother and baby in many ways. Thus, a healthy woman with a normal pregnancy may either continue her regular exercise regimen, or begin a new exercise program. The American College of Obstetrics and Gynecology (ACOG), as well as the American Society for Obstetrics and Gynecology (ASOG), recommends that normally healthy pregnant women may continue an already-established exercise regimen.

Pregnancy is a normal physiological state characterized by growth of both mother and fetus. From conception onward, the fetus develops into a baby, and the mother experiences both physical and psychological growth. All mothers want the best possible health for themselves and their babies, but some women and physicians are concerned that regular maternal physical activity during pregnancy may cause miscarriage, premature delivery, poor fetal growth, or musculoskeletal injury. For normal pregnancies, these concerns have not been substantiated. Indeed, participation in regular weight-bearing exercise has been shown to improve maternal fitness, restrict weight gain without compromising fetal growth, and hasten postpartum recovery. In addition, the psychological benefits of exercise are undeniable, and should be nurtured by all who care for pregnant women. During the first trimester, major physiological changes are taking place, even though maternal body changes are few. During low-level exercise, blood pressure and pulse responses are not dramatically different from those in the non-pregnant woman, but fatigue may be noticed earlier during exercise. As early pregnancy progresses, blood volume expands and the uterus continues to enlarge. Weight gain is usually small but can range from zero to ten pounds. During this time, the fetus is undergoing its most important growth, including development of organs and limbs. For this reason, a proper balance of nutrition, hydration, exercise and rest assume great importance. It is important for the pregnant woman to avoid large increases in her body temperature during exercise. Fortunately, adequate hydration, regular exercise, and pregnancy all improve a woman's capacity to dissipate heat. The individual effects of these on heat dissipation appear to complement one another when combined. Thus, well hydrated, fit pregnant women regulate their core body temperatures more efficiently than sedentary people, and undergo less temperature variation during exercise. Loose fitting clothing and a cool environment are also important in protecting against heat stress. Other environmental conditions to consider are very high and very low air pressure. Exposure to the decreased oxygen of high altitudes, as well as the high pressures experienced during deep sea diving, should be avoided during pregnancy.

The second and third trimesters are accompanied by dramatic changes in a woman's body. Normal weight gain ranges between 22 and 35 pounds and is centered around the abdomen and pelvis, which alters both posture and the center of gravity. During this time, exercises requiring balance and agility may become more difficult due to the change in the pregnant woman's weight distribution. The use of properly adjusted exercise equipment, a smooth floor surface, and/or aquatic exercises are extremely helpful. The extra caloric demands of pregnancy are extremely variable; no fixed equation accurately estimates the amount of increased caloric need. The best measure of sufficient caloric intake is adequate weight gain. Small, frequent meals and regular fluid intake throughout the day are most desirable in maintaining a steady flow of nutrients while minimizing the discomfort of exercising on a full stomach, and avoiding dehydration and low blood sugar. Pregnant, sedentary women commonly require approximately 3,000 calories per day during the second and third trimesters to ensure adequate stores of nutrients. A physically active expectant mother would therefore have a higher caloric need, in order to compensate for calories burned off during strenuous exercise.



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For pregnant women who wish to exercise during pregnancy, the American College of Sports Medicine provides the following recommendations:

**Safety:** As changes in weight distribution occur, balance and coordination may be affected. Exercise programs should be modified if they pose a significant risk of abdominal injury or fatigue as opposed to relaxation and an enhanced sense of well being. Until more information is available, exercising in the supine or prone positions should be avoided after the first trimester.

**Environment:** Temperature regulation is highly dependent on hydration and environmental conditions. Exercising pregnant women should ensure adequate fluid intake before, during and after exercise, wear loose-fitting clothing, and avoid high heat and humidity to protect against heat stress, especially during the first trimester.

**Growth and Development:** The pregnant woman should monitor her level of exercise and adjust her dietary intake to ensure proper weight gain. If pregnancy is not progressing normally or if vaginal bleeding, membrane rupture, persistent pain or chronic fatigue are noted, exercise should be stopped until a medical evaluation has been completed. Also, if regular contractions occur more than 30 minutes after exercise, medical evaluation should be sought. This may signify pre-term labor.

**Mode:** Weight-bearing and non-weight-bearing exercise are thought to be safe during pregnancy. Improved maternal fitness is a well-known benefit of non-weight-bearing exercise such as swimming and cycling. Weightbearing exercises are similarly beneficial as long as they are comfortable. Swimming and stationary cycling are excellent non-weight-bearing exercises, and may be recommended. Walking, jogging and low-impact aerobics programs are good choices when weight-bearing exercise is to be considered.

Heavy weightlifting, or similar activities that require straining, are to be discouraged. Bicycle riding, especially during the second and third trimesters, should be avoided because of changes in balance and the risk of falling. Exposure to the extremes of air pressure, such as in SCUBA diving and high altitude exercise in non-acclimatized women, should be avoided.

**Intensity:** Pregnancy is probably not a time for serious competition. For women who are continuing their regular exercise regimen during pregnancy, exercise intensity should not exceed pre-pregnancy levels. The intensity of exercise should be regulated by how hard a woman believes she is working. Moderate to hard is quite safe for a woman who is accustomed to this level of exercise.

**Exercise:** A healthy woman with a normal pregnancy may either continue her regular exercise regimen or begin a new exercise program during pregnancy. For your particular exercise prescription and its duration, check with your physician.

Written for the American College of Sports Medicine by Raul Artal, M.D., James F. Clapp, III, M.D., and Daniel V. Vigil, M.D., FACSM

Current Comments are official statements by the American College of Sports Medicine concerning topics of interest to the public at large.

Street Address: 401 W. Michigan St. • Indianapolis, IN 46202-3233 USA  
Mailing Address: P.O. Box 1440 • Indianapolis, IN 46206-1440 USA  
Telephone: (317) 637-9200 • FAX: (317) 634-7817



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