

The Benefits of Exercise during Pregnancy: How to Advise Your Chiropractic Patient, Part I

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The safety of the mother and fetus is the primary concern in any exercise program. The goal of exercise both before and during pregnancy, as well as during the postpartum period, should be to maintain the highest level of fitness consistent with maximum safety. As the potential for maternal and fetal injury is significant because of the musculoskeletal and cardiovascular changes at this time, any exercise recommendations should err on the conservative side.

The growth and development of a new life requires the interaction of many of the body's systems. Exercise requires these complex interactions as well. In fact, pregnancy and exercise "share" certain body systems, including the metabolic system, the circulatory system, the respiratory system, and the musculoskeletal system. Because both exercise and pregnancies depend on common systems, they can interact with each other. For example, pregnancy changes the muscular and skeletal systems, which are also basic to the source of locomotion and balance of the individual. Exercise produces heat which can also disturb the developing fetus.

The progression of physical activity is an important aspect of any exercise program. During pregnancy, the patient's energy levels tend to gradually fluctuate. During the first trimester, physical fitness will decrease. Some women will perceive that the same amount of work will require more effort than before pregnancy and they will adjust their efforts accordingly. Other women, who try to continue pre-pregnancy activity levels, will need instruction on decreasing their efforts.

In the second trimester, physical fitness will increase, although rarely to pre-pregnancy levels. A pregnant exerciser may be able to exert more effort during this trimester. If the exercise is comfortable for the pregnant participant and within the recommended guidelines, she should be allowed to continue. Remind her that she must not try to do the same amount of work she did before she was pregnant.

As body weight increases in the third trimester, physical fitness will again decrease, and the amount of work a pregnant exerciser does should be decreased as well. During this time, weightbearing activities may become uncomfortable, and gradual transition to non weightbearing activities such as swimming and stationary cycling may become a reasonable alternative.

The following guidelines are based on the unique physical and psychological conditions that exist during pregnancy. They will outline the general criteria for safety conditions that exist during pregnancy and the general criteria for safety during the development of home exercise programs. This information was compiled from the American College of Obstetricians and Gynecologists' Exercise during Pregnancy and the Postnatal Period.

1. exercise at least three times a week is preferable to intermittent activity. Competitive activities should be discouraged. However, in the case of a professional or elite athlete who is already accustomed to training at a high heart rate, it is probable that the pregnant

athlete may be able to continue to exercise above the 140 heart rate limit recommended for the general pregnant population. It should be noted that rare cardiovascular complications can also occur in athletes. As a result, warning signs include the appearance of palpitations and tachycardia during rest.

2. exercise should not be performed in hot, humid weather or during a period of febrile illness.
3. movements such as jerky, bouncy motions should be avoided. Exercise should be done on a wooden floor or tightly carpeted surface to reduce shock and provide a sure footing.
4. flexion or extension of joints should be avoided because of connective tissue laxity. Activities that require jumping, jarring motions or rapid changes in direction should be avoided because of joint instability.
5. exercise should be followed by a period of gradually declining activity that includes gentle stationary stretching. Because connective tissue laxity increases the risk of joint injury, stretches should not be taken to the point of maximum resistance.
6. pregnant woman's heart rate should be measured at times of peak activity. Target heart rates and limits established in consultation with the health provider should not be exceeded.
7. should be taken to gradually rise from the floor to avoid orthostatic hypertension. Some form of activity involving the legs should be continued for a brief period.
8. should be taken liberally before, during and after exercise to prevent dehydration. If necessary, activity should be interrupted to replenish fluids.
9. who have led sedentary lifestyles should begin with physical activity of very low intensity and advance their activity levels gradually.
10. should be stopped and the health care provider consulted if any unusual symptoms appear.

Table 1: Average Female Pregnancy: Seven Guidelines for Exercise

Heart rate:	No greater than 140 bpm
Intensity:	50-60% of max
Duration:	Strenuous activity no more than 15 min
Positions:	No supine after 4 months
Avoid:	Valsalva maneuvers
Diet:	Caloric intake needs to be adequate to meet need of exercise and growing fetus
Temperature:	Not to exceed 38 degrees Celsius

The benefits of aerobic exercise for most non-pregnant individuals are generally familiar to most clinicians. Some benefits that might also be applicable to pregnant women include:

1. blood pressure.
2. other cardiovascular risks such as clot formation.
3. maintain an ideal body weight.

4. stable diabetes.

Exercise along with chiropractic care during pregnancy can also have a beneficial effect on the labor process and delivery. Pregnant women who exercise have generally shorter labor times and faster, easier deliveries. Another benefit is the psychosocial "lift" perceived by those who exercise. Some studies show that women who exercised during pregnancy had higher self-esteem than those who did not. The cause and effect relationship between exercise and high self-esteem was associated with a decrease in the number of complaints of backaches, headaches, and fatigue in an exercising group of pregnant women compared with a non-exercising group of pregnant women. The exercise group also had less shortness of breath, probably because exercising women are more conditioned for difficult breathing.

If exercise continues after delivery, the benefits appear to continue. By promoting blood flow, exercise helps decrease varicosities, leg cramps and peripheral edema. Gestational diabetes occurs in 4% to 7% of the obstetric population. Insulin therapy and diet may not be the only optimal treatment to attain euglycemia. The hormonal changes of pregnancy reduce peripheral insulin sensitivity and are further amplified in patients affected by gestational diabetes. Reduced insulin sensitivity can be reversed most efficiently with exercise. Exercise has long been recognized as an adjunct or alternative therapeutic modality for type II diabetic patients. Pregnant diabetics have been denied this option in the past, primarily because of the potential fetal risks. Recent studies on fetal responses to exercise have removed some of the initial concern.

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