ICEA Prenatal Fitness Educator Certification Course

Introduction

The interest and need for prenatal fitness guidelines has increased in the past decade, as more physically active women who become pregnant expect to continue with their fitness program and even non-exercising women are motivated to exercise while pregnant to help prevent excessive weight gain and improve their health. The results of recent prenatal exercise studies have shown that regular exercise at moderate to somewhat hard levels during pregnancy has many positive benefits, including reduced level of fat deposition and retention, shorter and less complicated labors, and a quicker recovery postpartum.

Before starting a prenatal exercise program, a pregnant woman should consult with her healthcare provider. This is an ideal time for healthcare practitioners to provide current prenatal fitness guidelines, and assure patients that exercise during their pregnancy is beneficial to both mother and baby. ACOG issued their latest prenatal exercise guidelines, warning signs and symptoms as well as contraindications in their 2002 committee letter: http://mail.ny.acog.org/website/SMIPodcast/Exercise.pdf

If a woman has exercised before becoming pregnant, instruct her to keep in mind that she may not be able to continue the same activities at the same intensity as she did previously. If she has never exercised before, it is important that she is guided through proper exercise techniques and instructed on how to keep her exercise intensity within safe levels.

The following information provides basic prenatal exercise information as well as tips for modification of fitness routines as pregnancy progresses:

- Clothes should be loose fitting and allow for ventilation. Bras should offer support and have wide straps to prevent shoulder discomfort. It is a good idea to buy shoes 1/2 to 1 size larger, to allow room if feet swell.
- A women needs to add 300 calories to her daily food intake to meet the needs of pregnancy. If she is physically active, she may need to increase that amount. The number of extra calories needed depends on the intensity and duration of exercise.

- The 300 extra calories ideally should come from nutrient rich foods such as vegetables, fruits, whole grains, low fat dairy products, and lean meats. An active pregnant woman should drink 8-12 cups of water each day.
- Exercise in heat and humidity can be dangerous. It is safest to exercise in an air-conditioned facility during the summer months. If a woman chooses to exercise outdoors during warm weather, instruct her to avoid the high heat times between 11:00 AM and 4:00 PM, don't exercise during high heat index days and reduce intensity and duration to prevent overheating. She should wear sunscreen and a broad brimmed hat to protect her skin.
- A pregnant woman needs to monitor herself during exercise for signs of overheating such as dizziness, faintness, or nausea. She should drink plenty of water before, during and after exercise to replace the fluids lost. Hot tubs and saunas may cause core temperature to rise to unsafe levels and should be avoided.
- A well-rounded fitness program consists of a warm-up, aerobic, strength, and flexibility components and a cool-down.

Aerobic Exercise

Exercise Prescription and Modifications:

Aerobic exercise strengthens the cardiovascular system and helps improve endurance and muscle tone. During pregnancy, exercise at a moderate to somewhat hard level of exertion can enable a woman to continue her daily activities throughout pregnancy with less fatigue and discomfort. In order to derive optimal benefit from aerobic exercise, the frequency should be at least three to five days a week. Exercise modes can vary depending on what feels comfortable, is enjoyable, and poses little risk to a woman and her fetus. Activities such as walking, swimming, cycling, jogging, and low impact aerobic dance are easily modified and good choices. The duration of each exercise bout can vary from 20 to 60 minutes or more depending upon a woman's fitness level, intensity and goals.

A simple tool for measuring a pregnant woman's exercise level is the Rating of Perceived Exertion (RPE) scale:

1 - 10 Borg Rating of Perceived Exertion Scale	
0	Rest
1	Really Easy
2	Easy
3	Moderate
4	Sort of Hard
5	Hard
6	
7	Really Hard
8	
9	Really, Really, Hard
10	Maximal: Just like my hardest race

She should feel that her exercise level is moderate to somewhat hard, which corresponds to 4-5 on the RPE scale. If she feels out of breath or is unable to talk, she's working at too high a level, and should decrease intensity, or stop and rest. The "talk test" is an effective tool for monitoring prenatal exercise intensity, and instructing a woman that if she's unable to carry on a conversation while exercising she's working too hard and should reduce her intensity.

The following tips will help make a pregnant woman's fitness program safe and effective:

- Begin the aerobic portion with a warm-up. Slow walking, biking or any gentle exercise, done for 5-6 minutes will help prepare her body for exercise.
- As a woman's pregnancy progresses, the type of exercise that feels comfortable may change. She should modify her fitness program to fit her needs.
- Some women find that non-weight bearing activities, like stationary biking or swimming, cause less discomfort.
- Avoid sports such as scuba diving, platform diving, water skiing or any activity than could cause trauma to the abdomen. Contact sports and activities that require balance and fast, twisting

movements may not be appropriate. A woman should contact her health care provider before attempting any questionable activity.

- Wind down the aerobic portion with a cool-down. She can slowly reduce her level on exercise equipment, or if walking or jogging or swimming, slowly decrease intensity until she feels her level is below 4 on the RPE scale.

Strength Training

Muscular strength is critical for maintaining proper posture, providing spine and pelvic organ support, and preventing neck, shoulder, and back discomfort. After delivery, a strong back and arms help protect a woman's body from injury resulting from lifting and carrying and her baby.

Strength training requires proper form and frequent monitoring to avoid injury. Apply these basic points when developing a weight training program:

- Warm-up before doing any strength exercises.
- Start out and progress slowly. One set of 12-14 repetitions, 2-3 times a week is sufficient for maintaining strength. It is important to have a rest day between strength workouts to allow you body to recover.
- Use any type of weight from soup cans to light weights or resistance bands. Use a weight or resistance allows a woman to do 12 repetitions without feeling unsteady or shaky.
- Exhale when lifting the weight, inhale as it is lowered.
- Perform the exercises without straining, using a slow, steady motion.
- Avoid doing any exercises while lying on your back after the first trimester.
- Discontinue exercise if severe pain or discomfort develops during or after strength training and consult with healthcare provider.

Flexibility Exercises

The changes in a pregnant woman's posture, weight, and center of gravity can cause her muscles to feel sore. Flexibility exercises help stretch muscles that are overworked and tight from exercise and body changes.

To effectively stretch muscles and avoid injury, keep the following points in mind:

- Avoid supine exercise after the first trimester.

- Increased levels of hormones cause ligaments to loosen, possibly decreasing joint stability. Use slow, gentle movements.
- Stretches should be held for 30 second or more. It takes time for the muscle to relax.
- Never bounce or force a stretch.
- Don't continue a stretch that feels uncomfortable or painful.
- Flexibility exercises can be done every day, and frequent back stretches may help prevent low back pain.

Pelvic Floor

The muscles of the pelvic floor are important for support and function of the abdominal organs. If they become weak, conditions such as incontinence and prolapsing of bladder, uterus or bowel can develop. Pelvic floor (Kegel) exercises can help prevent muscle weakness. Proper training techniques ensure that women are contracting the correct muscles and effectively strengthening the pelvic floor.

The pelvic floor muscles form a figure eight around the perineal body by surrounding the urethra, vagina, and anus. They are the muscles that are contracted when stopping the flow of urine, and initially women can learn how to contract the pelvic floor muscles by stopping and starting urine flow.

PELVIC FLOOR EXERCISES:

- Slow contraction and slow release, squeezing the pelvic floor muscles progressively tighter to a count of three and relaxing to a count of three. Work up to a set of 25-50 or more contractions a day.
- Contract and hold. Squeeze your pelvic floor muscles tight and hold for 10 seconds. If you find it difficult to hold for 10 seconds, start with 5 seconds and build up over time as you become stronger. Work up to a set of 25-50 contractions or more a day.
- The abdomen, buttocks, and thighs should not be tensed when doing these exercises. Lie, sit, or stand with your legs slightly apart so you can isolate the correct area.
- No one will be able to tell that you are doing these exercises, so you can do them anywhere. It is helpful to establish certain times of the day (before you get out of bed each morning) or activities (driving to work, brushing your teeth) that are your "cue" to do your exercises. You should contract your pelvic floor muscles each time you lift, laugh, sneeze, or cough to provide support and prevent further weakening.

Abdominal Strength Exercises

The abdominal muscles consist of three different groups (rectus abdominus, transverse, and obliques) that all work together to support the spine and pelvic organs. Sometimes during pregnancy, a separation called a "diastasis recti" can occur as a result of hormonally induced softening of the fibrous band that connects the recti muscles. Traditional "sit up type exercises should be avoided during pregnancy as the widening diastasis makes it increasingly difficult to raise up without recruiting other muscles groups, and the decreased support from the recti muscles can put stress on the low back.

Women should limit or avoid doing abdominal exercises in the supine position after the first trimester, as the weight of the growing fetus can compress the maternal vena cava, and cause dizziness from reduced maternal blood flow. If a woman develops any discomfort when performing abdominal exercises, or notices an increase in diastasis recti, she should discontinue the exercises and consult with a physical therapist that specializes in women's health.

Women can strengthen their abdominal muscles without putting stress on their low back by contracting their tummy and holding for a count of five, then relax and repeat up to 10 times. They may also do this exercise while on their hands and knees, tightening their abdomen and pulling up and holding for a five count, then slowly relaxing.

Research has increasingly shown that maintaining fitness during pregnancy can improve physical and emotional wellbeing. An appropriate exercise program during and after pregnancy has shown to provide many benefits, without increasing the risk of injury to mother or fetus. It is important for healthcare providers to apply current maternal fitness guidelines and exercise prescription techniques when prescribing exercise programs for their pregnant patients.

UPON COMPLETION OF THE COURSE PROGRAM AND EXAM/TEST, PLEASE NOTIFY THE ICEA MAIN OFFICE OF YOUR SUCCESS SO THAT WE CAN VERIFY AND MAIL OUT YOUR CERTIFICATE DETAILING YOUR NEW CREDENTAIL AND CONTACT HOURS EARNED.

Catherine Cram, MS is an exercise physiologist who specializes in pre-and postnatal fitness. She has joined with ICEA in providing this certificate course for members.