



Pregnancy: The Other Pro Sport

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A marathon runner's program outline is designed to minimize the potential for injury, while building their physical and mental strength, plus endurance to withstand the challenges of the run. Similarly, pregnancy... the other pro sport, is not much different. One can say that pregnancy is similar to a marathon with its own set of specific aims for each of the training periods called trimesters.

Understanding that pregnancy involves a series of strategic changes to the athlete's (expectant mom) body should make designing a modified periodized program easier to handle. A structured program will help minimize the common pregnancy aches and discomforts while creating a greater sense of acceptance to the transformations that will take place during the 40 weeks. Keep in mind that once labour begins, the challenges the body has endured in training during the previous months of the pregnancy marathon will help keep the mind focused

Note: Please advise your client if she is pregnant and did not exercise consistently prior to getting pregnant, that it is recommended she consult with her doctor or health care provider before commencing any new routine. Previously, inactive women should wait until the second trimester to engage in a new activity. Walking is the best exercise in first trimester because it keeps the joints smooth, tones muscles, and enriches blood oxygen levels as well as contributing to a woman's positive outlook.

and body able to keep pushing, even when fatigue sets in.

According to the American College of Obstetricians and Gynecologists (ACOG), "a woman whose weight is normal before she becomes pregnant should gain 25–35 pounds during pregnancy. Women who are underweight should gain about 28–40 pounds. Women who are overweight should gain 15–25 pounds. Women who are obese should gain about 15 pounds." For this reason she

must engage in a resistance and cardiovascular training program that will help ease the discomforts of the weight gain to her body, provide her with the muscular and mental stamina to cope with daily activities, prepare her for labour and delivery and to recover quicker after birth making it easier to bounce back to pre-pregnancy status.

"Levels of the pregnancy hormones increase rapidly in early pregnancy, doubling approximately every 48 hours, and then gradually declining by about 16 weeks of gestation" (Canada's Pregnancy Care Book, 2009). Hormones, such as progesterone, estrogen, and relaxin, have a large effect on the physical, physiological and mental changes the pregnant athlete experiences during the pregnancy marathon.

Before beginning the resistance portion of an exercise routine, do a five to 10-minute circulatory warm-up. The warm-up increases heart rate which dilates the blood vessels, allowing more oxygen and blood to be delivered to the working tissues. Walking, cycling, elliptical, or rowing at a slow to moderate pace are good examples of what one can do for a circulatory warm-up.

Trimester 1 > 0-12 weeks

Weeks 0-4

Energy-enhancing Techniques	Feelings of fatigue and nausea are commonly associated with the hormonal surge during the first trimester. Techniques that stimulate energy flow throughout the body are ideal during this phase.
Flexibility	Preparing the muscles, joints, tendons, ligaments to the physical changes of the spine and postural alignment over the course of the pregnancy, will help reduce the strain on the soft tissues in the months ahead. To prevent injury to the soft tissue, you want to stretch to the point of mild tension.
Weeks 5-8	
Joint Stability	The joints become loose and relaxed due to the higher levels of hormones in the body. Strengthening the muscles surrounding the joints reduces a potential injury to both mother and unborn child.
Structural Balance	Work on restoring the balance between the musculoskeletal structures to reduce the stresses and compression forces placed on the axial skeleton and joints is essential. Proper strengthening and stretching of the appropriate structures will help maintaining an ideal weight distribution of the internal and external loads placed upon the body.
Circulatory	Muscles serve as muscular pumps that when they contract they place pressure against the arteries and veins promoting blood circulation. The incidence of varicose veins is common because of the relaxation of muscle tissue in the veins.
Weeks 9-12	
Posture Strength Conditioning	Maintaining a healthy postural alignment through strength training will help reduce the occurrence of backaches, sciatica, and lower body swelling. The expanding uterus alters the woman's musculoskeletal system causing her center of gravity to shift from its ideal position.
Core	Strengthening the musculature surrounding the abdomen, pelvis, hips, thighs, and spine will help stabilize and maintain proper posture when moving (walking) or not moving (standing) during pregnancy as well as aiding in delivery and labour.
Breathing Techniques	Diaphragmic breathing helps improve digestion by messaging the abdominal organs. It also helps increase oxygen uptake. The mental, physical, and emotional stresses associated with pregnancy and life in general are better coped through slow deep breathing.

Trimester 2 > 13-27 weeks

Weeks 13-16

Endurance	Strengthens and prepares the body for the increased stamina needed to carry the extra weight and for the duration of labour and delivery. Endurance conditioning promotes blood flow, heart health, and circulation to the respiratory, cardiovascular, and musculoskeletal systems.
Functional Training	Functional training prepares the body for the physical changes that occur during pregnancy because of the high carry over to daily activities. An increase of the body's ability to stabilize will decrease the incidence of injury. Strengthens and tones the muscles.
Core	Refer to weeks 9-12

Weeks 17-21

Endurance	Refer to weeks 13-16
Functional Training	Refer to weeks 13-16
Stability	As the alignment of the body alters, both ankle and feet are always forgotten, yet very important in the stability of one's walking pattern and weight distribution. By raising the awareness and strength in both the ankle and foot and how they function in relation to one another reduces the chances of injury to these joints remarkably.
Circulatory	Pumping blood flow back towards the heart and out of the joints will help reduce the amount of swelling to the hands, ankles, and feet.

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Weeks 22-27

Endurance	Refer to weeks 13-16
Posture Strength Conditioning	Refer to weeks 9-12
Core	Refer to weeks 9-12
Mobilization	Remind the joints of the body of their correct postural alignment help reduce a few of the common pregnancy aches, such as backaches.

Trimester 3 > 28 weeks to delivery

Weeks 28-32

Posture Strength Conditioning	Refer to weeks 9-12
Core Conditioning	Refer to weeks 9-12
Breathing Techniques	Refer to weeks 9-12
Muscle Endurance	Refer to weeks 13-16
Pelvic Floor	The enlarged uterus places stress upon all the organs and surrounding soft tissue, i.e. muscles. Maintenance of the pelvic floor muscles, intrinsic muscles of the vertebrae and lower abdominal muscles which all function on the same neurological loop will help prevent the common symptom of incontinence during and after pregnancy.

Weeks 33-37

Core Conditioning	Refer to weeks 9-12
Mobilization Techniques	These techniques will stimulate joint mechanics by lubricating the joint while increasing the body's sense of coordination and mobility.
Relaxation Techniques	Helps relax and focus the body by bringing an inner awareness to what our bodies need.
Pelvic Floor Muscles	Along with the intension of weeks 28-32, the pelvic floor muscles aid in the pushing phase of delivery.

Weeks 38-delivery

Breathing Exercises	Focusing on deep diaphragmatic breaths will help keep this muscle strong and prepare the expectant mother for breathing required from her during labour.
Visualization	Helps relax the mind by helping the woman reach a place of peacefulness and calmness.
Pelvic Floor Muscles	Refer to weeks 33-37

Cardiovascular Conditioning

Frequency: Three to five times per week

Intensity: Moderate intensity, can still carry on a conversation, perceived exertion should be between light to somewhat hard.

Type: Walking, swimming, cycling, elliptical, and rowing

Note: Cardiovascular portion should be done after the resistance training portion of the workout so the working muscles don't become exhausted.

Seven points of caution:

1. Avoid activities that require a high level of balance and quick directional changes.
2. Avoid high impact and potentially dangerous sports.
3. Avoid overheating, particularly during the third to eighth week because the neural tube that protects the central nervous system is forming.

4. Stay well hydrated.

5. After 14th week, avoid lying flat on your back for long periods! The weight of the uterus presses on the vena cava which restricts blood flow to developing baby.

ACOG states a woman should stop exercising and call her doctor if she experiences any of these symptoms:

- Vaginal bleeding
- Dizziness or feeling faint
- Increased shortness of breath
- Chest pain
- Headache
- Muscle weakness
- Calf pain or swelling
- Uterine contractions
- Decreased fetal movement
- Fluid leaking from the vagina □