EXERCISE in Pregnancy

Many sportswomen are faced with the dilemma of whether to continue their training program when they become pregnant.

Pregnancy used to signal the end of a woman's sporting career but in recent years many great female athletes have returned to their sport to compete at the highest levels following the birth of a baby. Pregnancy is a natural condition rather than an illness and unless you have complications, it should be possible to enjoy your sport at some level throughout most of your pregnancy.

HOW WILL PREGNANCY AFFECT PERFORMANCE?

There are many anatomical and physiological changes during pregnancy that will affect performance.

INCREASE IN BODY WEIGHT (ON AVERAGE 10 -15 KG)

As pregnancy progresses weight increases and weight distribution will also change. As body shape changes, the centre of gravity moves forward and the curvature of the spine will increase. This can make rapid changes of direction more difficult. The increase in body size can also make some activities more uncomfortable (eg jogging) particularly in the last trimester.

LOOSENING OF ALL LIGAMENTS

During pregnancy joints will gradually loosen up ready for the birth. This creates an increased risk of injury. Care should be taken with contact sports and any sport which involves jumping and frequent changes of direction.

INCREASE IN RESTING HEART RATE

Due to the increase in resting heart rate and decrease in maximal heart rate during pregnancy, it is not recommended using target heart rate to determine intensity of exercise. In healthy pregnant sportswomen the intensity of exercise can be monitored by the mother's symptoms of exertion. The pregnant sportswoman should become competent in assessing her exercise intensity in consultation with her doctor. She should stop when fatigued and not exercise to exhaustion.

If using heart rate to determine intensity of exercise most guidelines advise that a heart rate of 140 beats/minute during an intense phase of exercise is appropriate. This figure is not an absolute, a heart rate of 150-160 beats/minute is reasonable for active women as long as no adverse symptoms are evident.

DECREASE IN BLOOD PRESSURE

During the second trimester of pregnancy, the development of blood vessels to supply the growing placenta will cause blood pressure to fall. From approximately the fourth month pregnant women should avoid rapid changes of position, both from lying to standing and vice-versa, so as not to experience dizzy spells. Never stop suddenly because cardiovascular adjustments take longer resulting in dizziness or faintness. In "aerobics", leg exercises done whilst lying on the back should be avoided after the fourth month because the weight of the foetus can impede the return of blood to the heart. Try to adapt these exercises as most can be done lying on the side. Prolonged periods of motionless standing should also be avoided.

EXERCISE

As pregnancy progresses, the body's ability to transport oxygen improves.

INCREASE IN BLOOD VOLUME, HAEMOGLOBIN AND VO_2 MAX

As pregnancy progresses, the body's ability to transport oxygen improves. This adaptation is designed to meet the needs of the growing foetus. This means that oxygen supply to other parts of the body including working muscles also improves. When exercising during pregnancy, always remember that the foetus needs oxygen too (never compromise blood flow to the foetus). Keep well hydrated and avoid over heating. Blood flow to the placenta is extremely important, so adjust the intensity and duration of exercise so that both the placenta and the working muscles can receive adequate blood supplies. This can be done using the heart rate guide of the scale of perceived exertion.

These cardiorespiratory adaptations are potentially advantageous for performance after the baby is born. During pregnancy the advantages are offset by changes in weight, blood pressure and ligament changes, and by the need to ensure oxygen supply to the foetus. It is true however, that physiological adjustments resulting from pregnancy will remain for some weeks following the birth of the baby. There may therefore be improvements in performance for those who manage to return to competition soon after the birth. Whether you can capitalise on this potential will depend very much on whether or not there are complications during birth and difficulties afterwards.

PELVIC FLOOR

Damage to the pelvic floor muscles occurs during birth. The pelvic floor muscles are also weakened during pregnancy so it is extremely important to begin conditioning the pelvic floor muscles from the outset. Do at least four lots of pelvic floor contractions each day (ask a physiotherapist for advice) and resume these exercises as soon as possible after the birth. Some women may experience some bladder control problems due to weak pelvic floor muscles after the birth however with persistent training of these muscles can avoid the problem of exercise-related incontinence in the future.

Exercises which put pressure on the pelvic floor muscles (eg star jumps) should be avoided during pregnancy and the first few weeks after labour.

ARE THERE ANY DANGERS OF EXERCISE DURING PREGNANCY?

There are theoretical concerns for the foetus and mother including risk of overheating, impairment of oxygen and nutrient delivery to the foetus and possible risk of premature labour.

RISKS TO THE FOETUS

It is important to avoid getting overheated during pregnancy. Exercising in hot or humid weather and in areas with poor ventilation should be avoided. Clothing made from natural fibres (eg cotton) 'breathe" better than synthetics and will therefore help to keep cool. Special attention should be given to fluid replacement—drink plenty of water when exercising in warm weather.

in Pregnancy

Most studies have not shown any significant difference in babies birth weights between exercising and non exercising pregnant women. However, one recent study showed women who exercised intensely more than three times per week in their third trimester, delivered significantly smaller babies. It is therefore recommended that exercise in the third trimester be limited to three sessions or less and not as intense as earlier in the pregnancy.

RISKS TO THE MOTHER

Pregnant women undergo many changes that can increase their susceptibility to injury. These include postural changes with an increase in lumbar lordosis, a shift forward in the centre of gravity as well as weight gain. These changes can alter balance and co-ordination, particularly in the second half of the pregnancy and for this reason activities which require a degree of balance or rapid change in direction may not be advisable, eg cycling, roller-blading.

A change in hormonal levels that aid in the relaxation and mobilisation of the pelvic joints can also cause problems with instability and injury in the sacroiliac and pubic symphysis joints. Excessive stretching and jerky ballistic movements should be avoided.

PRECAUTIONS

Exercise should be stopped if any abnormal symptoms occur such as pain, contractions, vaginal bleeding, dizziness or unusual shortness of breath.

Exercise during pregnancy is not advised in a number of conditions including heart disease (ischaemic or valvular), severe hypertension (high blood pressure), risk of premature labour (incompetent cervix, multiple pregnancy, ruptured membranes), growth retardation or pre-eclampsia.

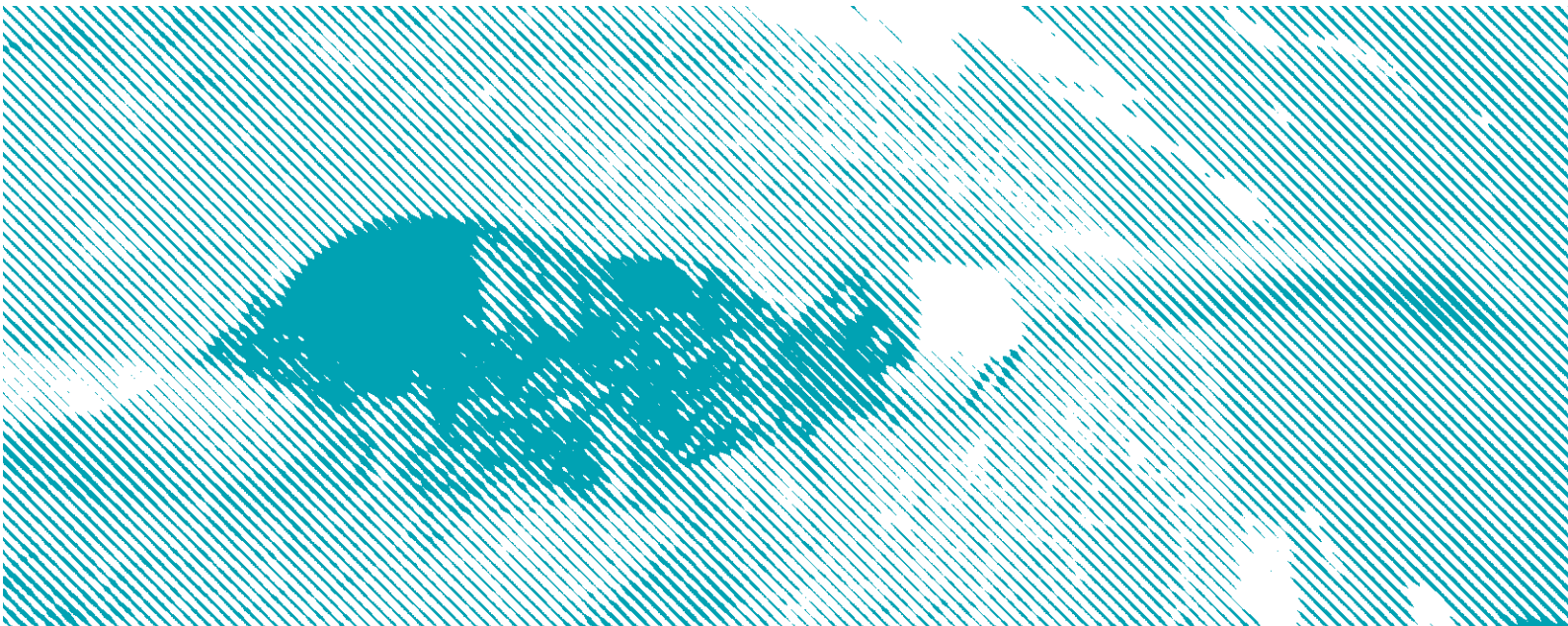
Any illness or complication of the pregnancy should be fully assessed and discussed before commencing or continuing an exercise program.

ARE THERE ANY ACTIVITIES WHICH SHOULD BE AVOIDED?

Some activities, such as scuba diving, parachuting, water skiing, martial arts, gymnastics and trampolining are not recommended during pregnancy.

Sports Medicine Australia has guidelines that categorise sports according to the level of safety for the pregnant athlete. Non contact sports, eg swimming, walking and jogging are considered safe throughout pregnancy. Sports with minimal contact (eg racquet sports and netball) which are considered safe in the 1st trimester with the possibility of continuing into the 2nd trimester depending on the circumstances (ie level of competition, fitness of the mother and state of the pregnancy). Contact and collision sports (eg soccer, basketball) are considered safe only in the first trimester.

Exercises involving straining (eg lifting heavy weights) are also potentially dangerous particularly in the later stages of pregnancy and are not recommended. Individual sports and training programs should be discussed with a sports medicine practitioner and obstetrician.



EXERCISE
in Pregnancy

PREGNANCY IS NOT THE TIME TO START A MORE INTENSE EXERCISE PROGRAM BUT RATHER CONTINUE OR MODIFY AN ESTABLISHED REGIME.

IF YOUR EXPERIENCE ANY OF THE FOLLOWING SYMPTOMS DURING, OR AFTER, EXERCISE, YOU SHOULD STOP AND CONTACT YOUR PHYSICIAN IMMEDIATELY:

- High heart rate
- Dizziness
- Headache
- Uterine Contractions
- Vaginal Bleeding
- Amniotic fluid leakage
- Nausea
- Insufficient Weight Gain
- Shortness of breath
- Faintness
- Back or pelvic pain
- Decreased fetal movements
- Sudden swelling of ankles, hands and face

DEVELOPING AN EXERCISE PROGRAM DURING PREGNANCY

Pregnancy is not the time to start a more intense exercise program but rather continue or modify an established regime.

WHEN CAN I RESUME EXERCISE AFTER THE BABY IS BORN?

After a normal vaginal delivery, gentle exercise including pelvic floor, abdominal exercises and walking can be commenced when comfortable. More intense exercise should be delayed for up to six weeks to allow for some resolution of the effects of pregnancy and delivery, particularly on the pelvic floor muscles and pelvic joints. After caesarian section six weeks is the recommended time to return to exercise if the wound is well healed.

Exercise has not been shown to adversely affect lactation (breast feeding) as long as fluid and caloric intake are maintained. Discomfort caused by full breasts and sore nipples may make running and jumping uncomfortable. A supportive bra is recommended.

Athletes who are able to return quickly to a high level of training will notice the beneficial physiological effects. You will be surprised how soon you can resume your full fitness and skill level after the birth, but remember that it can take up to six months for joint stability to be re-established.

SHOULD I DISCUSS MY EXERCISE PROGRAM WITH MY DOCTOR?

Yes! Consultations should be made frequently, but especially if any symptoms occur (medical or obstetric) that are of concern. If there are any complications, or if the doctor is not happy with weight gain, take his or her advice about exercise.

Elite athletes will have to make psychological adjustments and modify their training program to enable safe participation in each stage of pregnancy. Accepting that pregnancy and birth will interrupt sporting aspirations will reduce feelings of frustration and resentment. Try to view this period positively, be flexible and be prepared to change training programs and expectations. Every pregnancy is different, but most women will be able to exercise at some level unless very ill.

These fact sheets are an initiative of the Medicine and Science for Women in Sport group of Sports Medicine Australia

SPORTS MEDICINE AUSTRALIA
National Office
PO Box 897 Belconnen ACT 2616
TEL 02 6230 4650
FAX 02 6230 5908
EMAIL smanat@sma.org.au
WEBSITE www.sma.org.au

Supported by SCORS Sub-committee on Women in Sport & Recreation