



Pre & Post-Natal Exercise Guidelines

Many women in the childbearing year wish to commence or continue with their exercise programs during and post pregnancy to maintain their health and quality of life.

The traditional medical advice has been for exercising women to reduce their habitual levels of exertion in pregnancy and for non-exercising women to refrain from initiating strenuous exercise programs. This advice was primarily based on concerns that exercise could affect early and late pregnancy outcomes.¹ However, recent investigations focusing on both aerobic and strength conditioning exercise regimens in healthy pregnant or postnatal women indicate that moderate exercise does not increase adverse pregnancy outcomes or quantity or composition of breast milk.

While an increasing demand for appropriate health and fitness services for pre and post-natal women provides an opportunity for many exercise professionals, it is imperative that pre and post-natal women are cared for individually, as there can be considerable variation between individuals and pregnancies.

To provide clarification for AUSactive Registered Exercise Professionals who provide services for pre and/or post-natal women, AUSactive has produced the following information for guidance:

Professional Skill and Knowledge

Registered exercise professionals who offer specifically tailored health and fitness services to pre and/or post-natal women are required to complete an AUSactive approved continuing education program containing foundational knowledge, skills and content that aligns with the recommendations made in this guideline.

Pre-Exercise Screening and Referral

All new participants should complete a suitable pre-exercise health screening questionnaire, such as the Adult Pre-Exercise Screening System (APSS) and follow recommended procedures in accordance with risk stratification. The Physical Activity Readiness Medical Examination for Pregnancy (PARmed-X for Pregnancy), developed by the Canadian Society for Exercise Physiology also provides a useful guide for screening and referral.

Importantly, if a new or continuing client has been identified with any medical or pregnancy related musculoskeletal condition that has exercise implications it is vital that appropriate ongoing consultation and collaboration takes place with the appropriate allied health or medical professional.

Exercise Programming

Exercise participation pre and post-partum has numerous health benefits which are well documented. However, registered exercise professionals must recognise that throughout this period extra consideration and knowledge is required to design safe and appropriate exercise programs. During pregnancy both the client and developing baby are at a higher risk of exercise induced complications due to physiological and morphological changes. During the post-natal period extra care is required to ensure proper musculoskeletal recovery. Therefore, as part of the ongoing service provided to pre and post-natal women it is important that the registered exercise professional continues to closely monitor progress and refer to the appropriate pregnancy related health care professional if any concerns arise. This may include their doctor, midwife or women's health physiotherapist depending upon the issue.

In developing a safe, effective and comfortable program for each individual pre and post-natal client, careful consideration of the following is vital:

Pre-Natal Guidelines

Past Exercise History

Pregnant women who were previously exercising may continue but should be advised to modify their exercise in accordance with general physiological changes associated with pregnancy and their individual situation. Clients who were previously inactive need to start at a low level and progress gradually. Knowledge in regard to the clients previous exercise experience helps to determine suitable and effective program content. Every pregnancy is different, and women can develop pregnancy related issues that have exercise implications at various times so it is vital that registered exercise professionals continue to monitor their clients and modify to suit.

Current Health

Registered exercise professionals should consider the general health of the client on a continuous basis. Appropriate rest should be encouraged and incorporated as a formal component of programming. If the client is unwell at any stage, refer to the following warnings signs.

Warning Signs

It is recommended that registered exercise professionals stop the exercise and refer to their health care professional for medical advice if their client experiences any of the following:

- ▶ Excessive shortness of breath
- ▶ Dizziness or feeling faint
- ▶ Fainting
- ▶ Headaches
- ▶ Chest pain or palpitations
- ▶ Blurred vision
- ▶ New or persistent nausea or vomiting
- ▶ Calf pain or swelling, or unusual muscle weakness
- ▶ Any kind of pain or numbness
- ▶ Excess fatigue after exercise
- ▶ Vaginal bleeding
- ▶ Abdominal cramps or pain
- ▶ Intense or new back pain
- ▶ Contractions
- ▶ Leaking of amniotic fluid
- ▶ Reduced movements of baby.

Activity Choice During Pregnancy

Registered exercise professionals should consider the following within their programming for pregnant clients:

It is advisable to include the following activities:

- ▶ Gradual warmups and cool downs for pre-natal circulation and avoidance of blood pooling.
- ▶ General strengthening plus particular focus on pregnancy specific muscles such as pelvic floor core and postural muscle strengthening.
- ▶ Modified strength training according to the AUSactive Safety Guidelines for Strength Training.
- ▶ Modifications for supine and stationary standing such as four-point kneeling, sitting on a fit ball and side lying.
- ▶ Flexibility training limited to a comfortable range of movement.
- ▶ Relaxation.
- ▶ Labor preparation.
- ▶ Appropriate low impact exercise styles.
- ▶ Modified exercise programs when risk of overheating is raised.
- ▶ In the presence of a pregnancy related musculoskeletal condition include exercises that either do not exacerbate or assist the condition.

It is advisable to avoid the following activities:

- ▶ High impact, jerky or ballistic movements.
- ▶ Exercise intensities or duration that make the client feel hot, exhausted or excessively sweat.
- ▶ Sudden changes of intensity and position.
- ▶ Any exercise that involves breath holding or Valsalva manoeuvre.
- ▶ Any exercise that places significant load on the abdominals or pelvic floor including abdominal curls, sit ups, planks and hovers.
- ▶ Stretching beyond comfortable range of movement to avoid overstretching due to increased joint and ligament flexibility.
- ▶ Weight bearing activities beyond comfortable range of movement.
- ▶ Exercises involving lying supine from 16 weeks onwards.
- ▶ Exercises in stationary standing (especially upper body strengthening) that will increase the risk of fainting.
- ▶ Contact activities (to minimise risk of falls and blows to the abdomen).
- ▶ Any exercise that may cause or exacerbate any pregnancy related condition.

Intensity

The most recent evidence has indicated that both aerobic and resistance training at moderate intensity is considered safe and have no adverse outcomes throughout pregnancy.

Monitoring exercise intensity in pregnant women is best achieved using a rating of perceived exertion (RPE) scale such as the Borg scale rather than heart rate.² In order to prevent raised maternal core temperature and unwanted musculoskeletal stress, the recommendations for pregnant women performing exercise is a score of 12-14, on a 6-20 scale.³

Duration & Frequency

It is recommended that session duration is limited to avoid hypoglycemia and overheating. However, intensity and duration must be considered together, i.e., low intensity can be performed for longer than moderate intensity exercise. In the absence of any medical issues, exercise can undertake on most days with consideration of variables including intensity, duration and recovery.

Water Based Programs

No adverse effects on the fetus have been reported to occur during water exercise in pregnancy. Exercising in the water may mitigate the physiological risks associated with land-based exercise. If a woman is exercising in water (as in aqua natal classes) the water temperature should not exceed 32 degrees Celsius.⁴

Registered exercise professionals need to consider the following more specifically for water-based programs:

Pregnant woman should not exercise in a hydrotherapy pool or spa.

The intensity recommendation remains the same in and out of water, low moderate.

The same activity modifications should be made for pregnancy related conditions.

To avoid a sudden drop in blood pressure, ensure that when women leave the pool, they move from deep to shallow.

Water first and then gets out slowly. Inform women that if they feel lightheaded it's important that they sit and wait until they feel normal again before standing.

Activity Choice

Many women can be in a hurry to return to exercise. The type of activity and when a new mum can return to exercise depends on pre-existing fitness, her pregnancy, labour and delivery and the post-natal health of both herself and her baby. Too much, too soon can cause long term problems and regrets. It is important that registered exercise professionals encourage women to listen to their bodies, take their time and follow recommended guidelines when making a return to various activities. Registered exercise professionals should monitor the health of post-natal clients on a continuous basis, particularly for abdominal muscle separation, core stability and pelvic floor function.

Registered exercise professionals should consider the following within their programming for post-natal clients:

It is advisable to include the following activities:

- ▶ Appropriate recovery of pelvic floor and core strength, endurance and control prior to any other exercise.
- ▶ Gradual progression of exercise to match the clients level of core strengthening and core control.
- ▶ Load, reps and sets should be based on form and the ability to maintain pelvic floor control, underlying core stability and normal breathing.
- ▶ Postural awareness and strengthening (especially of upper back and shoulder girdle).
- ▶ Gentle stretching (especially of neck, lower back and shoulders).
- ▶ Rest and relaxation.
- ▶ A very gradual return to low impact.
- ▶ Return to resistance exercise gradually according to recommendations listed on the following page.

It is advisable to avoid the following activities:

- ▶ Any exercise that may cause or exacerbate any pre or post-natal related condition.
- ▶ Exercises that cause a bearing down on the pelvic floor.
- ▶ Any exercise that causes loss of bladder or bowel control.
- ▶ Any exercise that involves breath holding or Valsalva manoeuvre.
- ▶ High impact exercises until core control pelvic floor strength, bladder and bowel control have been regained.
- ▶ Exercises that cause breath holding or compromised quality of movement.
- ▶ Abdominal exercises that involve significant outer abdominal muscle load such as sit ups, abdominal curls or hovers, until the client is able to engage their pelvic floor and maintain core recruitment throughout the move.
- ▶ Aqua exercise if there is any ongoing vaginal loss or open wound.
- ▶ Exercises that may strain vulnerable areas such as neck, lower back and shoulders.
- ▶ If client is unwell, has a fever or experiences breast lumps or tenderness cease exercise and seek medical assessment.



Recommendations for Post-Natal clients

The following recommendations are specific phases for return to exercise. Factors such as altered sleep patterns, breastfeeding, hormonal changes and establishing new routines with a baby can result in fatigue, so programming for a post-natal woman needs to consider the individual's energy level.

Further modification may be required for women who have given birth by caesarean, have any existing pelvic joint or back pain, rectus diastasis or have additional risk factors such as assisted delivery, a long second stage (pushing over 1 hour) and birth weight over 4kg.

0-3 weeks Post-Natal

Should include walking, post-natal core/deep abdominal training and pelvic floor exercises.

3-8 weeks Post-Natal

It is recommended that clients wait until their 6-week postnatal check with their doctor or midwife before commencing a group exercise program, returning to the gym or to personal training. Recommended exercises at this stage include:

- ▶ Walking.
- ▶ Swimming (once bleeding stopped). Gym programs - maintain posture, light weights, no breath holding.
- ▶ Post-natal abdominal and pelvic floor exercises.
- ▶ Low impact aerobics or a post-natal class.
- ▶ Low intensity water aerobics classes (once bleeding stopped).

Note: Check for abdominal muscle separation.

8-12 weeks Post-Natal

As for 3-8 weeks, increasing intensity/weights. Progress post-natal core, abdominal and pelvic floor exercises.

12-16 weeks Post-Natal

Abdominal and pelvic floor muscle testing prior to return to higher impact exercise / running / sport and commencing regular abdominal exercise programs.

Note: Core strength should be back (or close) to normal if appropriate post-natal core, abdominal and pelvic floor exercises and have been performed regularly. This means the client has no symptoms of pelvic floor weakness and has good core control before progressing further with cardio and resistance training intensities and load.

After 16 weeks Post-Natal

Return to previous activity levels providing that the client's pelvic floor muscles and core control levels are back to normal. Additionally, the client should be free of any ongoing pre or post-natal complications such as rectus diastasis and pelvic joint pain.

The client should not experience any back pain, pelvic or vaginal heaviness or urine loss during or after exercise. If they do, they should be advised to slow down or reduce their intensity level.

Note: Refer client to their doctor, continence and woman's health physiotherapist or other health professional if there are any ongoing problems requiring further assistance.

Group Classes (Pre & Post-Natal)

Group classes are a great option for mothers and expectant mums as they provide considerable physical, emotional and social benefits. However, registered exercise professionals taking pre and post-natal group classes must be adequately trained (refer to Professional Skill and Knowledge section) and able to provide options and modifications to suit each individual client in the class. To do this they must:

- ▶ Have a sound knowledge of each individual's situation relating to their fitness, pregnancy, mode of delivery and any existing exercise limitations.
- ▶ Monitor the individual's progress before each exercise session.

A registered exercise professional must evaluate and determine the appropriate number of participants based on:

- ▶ Type of class conducted.
- ▶ Environment delivered in (refer to AUSactive Outdoor Training Guidelines if applicable).
- ▶ Diversity and experience of the group participants. Ability to monitor and modify each individual exercise in the group setting.



Nutrition, Hydration and Environmental Considerations

- ▶ During pregnancy adequate dietary intake before exercising is very important.
- ▶ Registered exercise professionals should emphasise the importance of hydration and consuming water before, during and after exercising for pregnant and breastfeeding clients, including when performing aqua based exercises.
- ▶ Exercise and lactation are compatible in the post-partum period, provided adequate calories are consumed and hydration is maintained.
- ▶ Consultation with an accredited dietitian should be encouraged for specific dietary advice (refer to Dietitians Australia or Sports Dietitians Australia) especially for clients commencing exercise and very frequent exercisers.
- ▶ Breast feed, where possible, prior to exercise. Pre and post-natal clients should be encouraged to wear non-restrictive comfortable clothing and a good supportive underwire free sports bra.
- ▶ To avoid overheating during pregnancy it is recommended that clients:
 - Do not exercise in high temperatures or high humidity.
 - Minimise layers of clothing.
 - Position themselves near the air conditioner/fan in classes.
 - Avoid spas, saunas, hot baths and overheated pools.
 - Have access to water fountain.
- ▶ Suitable access to change rooms and toilets is required at all times.
- ▶ If the service is being conducted in an outdoor setting, it is recommended that the AUSactive Outdoor Training Guidelines are referred to.

All registered exercise professionals have a duty of care to prevent harm which could reasonably be expected to occur while providing advice or instruction to clients. Professional standards and guidelines developed by AUSactive (such as the Pre & Post-Natal Exercise Guidelines) will assist registered exercise professionals in mitigating risk and exercising their duty of care.

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References

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