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a core concepts musculoskeletal health group newsletter

COPING WITH PREGNANCY RELATED MUSCULOSKELETAL DISCOMFORTS

The majority of musculoskeletal problems that arise during pregnancy can be prevented and treated with physiotherapy intervention.

Individualized physical therapy programs have been found to be more effective than group sessions for the reduction of pain and sick leave caused by back pain in pregnancy. Individualized sessions should include exercise therapy, postural training/ advice, and ergonomics recommended once weekly over a 5-wk period. (Borg-Stein et al 2005).

The 2003 joint statement of the Society of Obstetricians and Gynaecologists (SOGC) and the Canadian Society of Exercise Physiology (CSEP) regarding exercise during pregnancy recommended resistance exercise in addition to aerobic exercise for pregnant women. *"Women and their care providers should consider the risks of not participating in exercise activities during pregnancy, including loss of muscular and cardiovascular fitness, excessive maternal weight gain, higher risk of gestational diabetes or pregnancy-induced hypertension, development of varicose veins and deep vein thrombosis, a higher incidence of physical complaints such as dyspnea or low back pain and poor psychological adjustment to the physical changes of pregnancy."*(Wolfe et al 2003).

Pregnancy related problems that benefit with Physiotherapy & exercises

The most common are musculoskeletal problems like back & pelvic girdle pain (approx. 50% prevalence in pregnancy [Britt et al 2004]), thoracic pain, nerve compression syndromes (e.g. carpal tunnel), stress incontinence and diastasis rectus abdominus.

Pelvic girdle pain and back pain

According to Artal et al (2008) most of the musculoskeletal problems that pregnant women experience are related to the altered postures. Whilst it may not be possible to stop this process from occurring, it is possible to minimize these maladaptive postures. With posture advice and strengthening of the core muscles, the weakened structural integrity can be somewhat restored. This helps reduce or eliminate many of the common discomforts associated with preg-

nancy and improve postpartum recovery, particularly those associated with back problems (Artal et al 2008, Hammer et al 2000).

In addition to changes in posture, development of abnormal movement patterns is also commonly seen, particularly during the second and third trimester. The resultant effect of abnormal movement will be pain during bed and car transfers, sit-stands and with walking. Gentle exercises to strengthen the core muscles, hamstrings and deep gluteal muscles combined with soft tissue release of the overactive piriformis, and advice of normal movements is often all that is required to reduce or completely eliminate pain.

Nerve Pathologies

Exercises to mobilize the nerves within nervous system can also be advised for women with nerve compression.

Incontinence

Incontinence (urine more so but faecal too) is a very common problem that may affect women during pregnancy. Neglecting the importance of pelvic floor muscles may result in women going on to develop incontinence during the pregnancy and at a later stage in life. Strengthening these muscles during pregnancy can also help develop the ability to relax and control the muscles in preparation for labor and delivery.

Ongoing strengthening post-delivery is highly recommended to promote the healing of perineal tissues, increase the strength of the pelvic floor muscles, and help these muscles return to a healthy state, including increased urinary control.

Incontinence at any stage, can also be affected by a person's lifestyle, occupation and diet and therefore advice must be provided in addition to exercise for such women

Diastasis rectus abdominus

Traditional stomach crunches, sit-ups and straight-leg raises have actually been found

to do more harm than good by increasing the separation of the rectus abdominus sheath. This is due to excessive exertion of tummy muscles that are stretching during the natural course of pregnancy. A study done by C. Cynthia et al 2005 at the Columbia University School of Physical Therapy showed that pregnant women who did not exercise had a 90% incidence of diastasis recti as compared with 12.5% in the exercising group who used their transverse abdominis during exercise. What this study highlights is the importance of exercise, but that too the correct form of exercise.

Not only antenatally but pilates based exercises to reduce the separation of these muscles postnatally is also often prescribed.

Additional benefits of exercise

Exercise also helps to ease the process of labor by training breathing control and strengthening the muscles required for labor. Exercise helps combat pregnancy related depression by improving body image and increasing self-esteem. It also aids in a faster recovery following delivery.

Considerations for Exercise prescription and physiotherapy intervention

Prior to exercise prescription knowledge regarding potential risks, awareness of baseline norms (e.g. in BP) and the assessment of the physical ability of the individual to engage in various activities is required. Given the potential risks, albeit rare, thorough physical evaluation of each pregnant woman should be conducted before any exercise programme is recommended. Individualized evaluation and exercise prescription by physiotherapists which includes intensity, frequency, and duration of the exercise seem to be important determinants of its beneficial effects. A woman's health physiotherapist specializing in issues associated with pregnancy can recommend exercises for pregnant and post-partum women after an assessment which generally consists of an analysis of the following:

- Joint mobility and symmetry
- Muscle imbalances and strengths
- Neurological evaluation
- Evaluation of functional limitations

Absolute contraindications to exercise in pregnancy (ACOG 2002)

- Haemodynamically significant heart disease
- Restrictive lung disease
- Incompetent cervix/cerclage
- Multiple gestation at risk for premature labour
- Persistent second or third trimester bleeding
- Premature labour during the current pregnancy
- Ruptured membranes
- Placenta praevia after 26 weeks gestation
- Pregnancy induced hypertension

Physiotherapy treatment techniques in addition to exercise commonly include:

- Pain management.
- Techniques to aid joint and soft tissue flexibility.
- Stress relief and relaxation training.
- Recommendations for sleeping and resting positions
- Posture correction and ergonomic advice
- Postpartum rehabilitation

It is also very important to provide women with knowledge of instances where exercise is detrimental to their health and the babies- see below:

Exercise

Aerobic activities and activities that promote musculoskeletal fitness are part of an overall exercise prescription. Typically, aerobic exercise can consist of any activities that use large muscle groups in a continuous rhythmic manner and the intensity very importantly should be based on scales which measure rate of perceived exertion. Exercises for musculoskeletal fitness include strength training and flexibility exercises.

The 2003 Canadian clinical practice guidelines for exercise in pregnancy and the postpartum period, issued jointly by the Society of Obstetricians and Gynecologists of Canada and the Canadian Society for Exercise Physiology, provide more specific recommendation. Previously sedentary women should be counseled to begin with 15 minutes of continuous exercise three times per week and work towards a goal of 30 minutes four times per week.

Specific stability exercises

Kegel Exercises

Kegel exercises, also called pelvic floor exercises, help strengthen the muscles especially the levator ani that support the bladder, uterus, and bowels. Intensive training of the pelvic floor muscles during pregnancy facilitate, rather than obstruct labour. It is also believed to prevent a prolonged second stage in one in eight

women (Kjell Å Salvesen et al 2004). A Cochrane review (2001) of 43 randomized trials concluded that Pelvic floor exercise was consistently better than no other treatment or placebo and should be offered as first-line treatment for women with stress incontinence.

Abdominal bracing exercise

This exercise requires the co-contraction of the transversus abdominis and multifidus that wrap right around the abdomen like a corset. It helps protect the spine which is under constant stress of the growing uterus, postural changes and reduced ligamentous stability. A study was done to compare the effects of the contraction of the transversus abdominis, independently of the other abdominals; with the bracing action that used all the lateral abdominal muscles on sacroiliac joint laxity. Joint laxity values decreased significantly in all individuals during both muscle patterns ($P < 0.001$). However interestingly isolating transversus abdominis contraction decreased sacroiliac joint laxity (or rather increased sacroiliac joint stability) to a significantly greater degree than the general abdominal exercise pattern ($P < 0.0260$) Richardson et al 2002) Pelvic titling combined with abdominal bracing are essential exercises for maintaining good posture and to prevent back ache that is due to bad posture.

Mobility Exercises

Pelvic tilt

Pelvic tilts strengthen the muscles of the abdomen and lower back, increase hip mobility. Pelvic tilts are particularly effective in relieving lumbar pain.(J. Sabino et al)

Stretching

Sub occipital extensors, pectorals, hip flexors, piriformis and back extensors are all tight due to an increased kyphosis, cervical and lumbar lordosis commonly found in pregnancy; and can be the source of cervicle, thoracic and posterior pelvic pain.

In a study by Yeo et al 2008 that compared walking and stretching exercise, it was found that regular stretching exercises may promote endogenous antioxidants among women at risk

for preeclampsia. The incidence of preeclampsia was 14.6% (95% CI, 5.6 to 29.2) among the walkers and 2.6% (95% CI; 0.07 to 13.8) among the stretchers.

Summary

Pregnancy should not be a state of confinement, and pregnant women with uncomplicated pregnancies should be encouraged to continue and engage in physical activities. Despite the fact that pregnancy is associated with profound anatomical and physiological changes, correct and individualised exercise can help prevent and combat many of the complications associated with pregnancy.

References

1. S. Snyder, B. Pendergraph. Exercise During Pregnancy: What do we really know? American Family Physician 2004;69(5)
2. Borg-Stein J, Dugan S, Gruber J: Musculoskeletal aspects of pregnancy. Am J Phys Med Rehabil 2005;84:180-192.
3. Gregory A. L. Davies, Larry A. Wolfe, Michelle F. Mottola, Catherine MacKinnon. Joint SOGC/CSEP Clinical Practice Guideline: Exercise in Pregnancy and the Postpartum Period. Canadian Journal of Applied Physiology, 2003, 28(3) 329-341
4. Kramer MS. Aerobic exercise for women during pregnancy. Cochrane Database Syst Rev. 2004;(1):CD000180
5. W Brown .The benefits of physical activity during pregnancy Journal of Science and Medicine in Sport 2002;5(1):37-45
6. Gavard, Jeffrey A; Artal, Raul.Effect of Exercise on Pregnancy Outcome; Clinical Obstetrics & Gynecology: 2008;5(2)467-480
7. Britt Stuge, Even Lærum, Gitle Kirkesola, Nina Vøllestad. The Efficacy of a Treatment Program Focusing on Specific Stabilizing Exercises for Pelvic Girdle Pain After Pregnancy-A Randomized Controlled Trial; Spine 2004;29:351-359
8. R Artal, M O'Toole.Guidelines of the American College of Obstetricians and Gynecologists for exercise during pregnancy and the postpartum period Br. J. Sports Med. 2003;37:6-12
9. R. L. Hammer, J. Perkins, R. Parr. Exercise During the Child-bearing Year; The Journal of Perinatal Education 2000:9(1)
10. Chiarello Cynthia, Falzone Laura A., McCaslin Kristin, Patel Mita N, Ulery Kristen R. The Effects of an Exercise Program on Diastasis Recti Abdominis in Pregnant Women; Journal of Women's Health Physical Therapy 2005:29 (1)11-16
11. Kjell Å Salvesen, Siv Mørkved. Randomised controlled trial of pelvic floor muscle training during pregnancy. BMJ 2004;329:378-80)
12. Hay-Smith EJ, Bo K, Berghmans LC, Hendriks HJ, de Bie RA, van Waalwijk van Doorn ES. Pelvic floor muscle training for urinary incontinence in women. The Cochrane Library, Issue 1, 2001.
13. Richardson, Carolyn A.; Snijders, Chris J.; Hides, Julie A.; Damen, Léonie; Pas, Martij; Storm, Joop. The Relation Between the Transversus Abdominis Muscles, Sacroiliac Joint Mechanics, and Low Back Pain: Spine 2002; 27(4) 399-405
14. SeonAe Yeo, Sandra Davidge, David L. Ronis, Cathy L. Antonakos, Robert Hayashi, Sharon O'Leary A Comparison of Walking versus Stretching Exercises to Reduce the Incidence of Preeclampsia: A Randomized Clinical Trial: Hypertension in Pregnancy 2008; Vol. 27, No. 2 , 113-130

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This newsletter is produced by Core Concepts - Musculoskeletal Health.

We can be reached at

T: 6226 3632 or

E: enquiry@coreconcepts.com.sg

W: www.coreconcepts.com.sg



Warning signs to stop the exercise while pregnant (ACSM 1995)

- Vaginal bleeding
- Dyspnoea before exertion
- Dizziness
- Headache
- Chest pain
- Preterm labour
- Decreased fetal movement
- Muscle weakness
- Calf pain or swelling (need to rule out thrombophlebitis)