



## GOOD PRACTICE STATEMENT

# The use of maternity/pelvic support belts for perinatal pelvic girdle pain

### Introduction

This statement is based on a synthesis of the best available current evidence. It will be subject to periodic review as the evidence base evolves. It should be noted that the statement offers guidance, and should not be regarded as prescriptive; such general advice will always require to be modified in line with the needs of any individual patient and the clinician's experience.

### Pelvic girdle pain

The term pelvic girdle pain (PGP) refers to pain experienced between the posterior iliac crest and the gluteal fold, particularly in the vicinity of the sacroiliac joint (SIJ). It may radiate to the posterior thigh, and can also occur in conjunction with or separately from pain in the symphysis pubis. The endurance capacity for standing, walking and sitting is diminished. A diagnosis of PGP can be reached after the exclusion of lumbar causes. Pain or functional disturbances related to PGP must be reproducible by specific clinical tests (Vleeming *et al.* 2008).

Pelvic girdle pain is a common problem, and it has been estimated that 20–25% of pregnant women suffer from PGP that is sufficiently serious to require medical help (Wu *et al.* 2004; Vleeming *et al.* 2008).

Since the cause of PGP is multifactorial, the precise aetiology and pathogenesis of the condition are unclear. It appears to be related to non-optimal stability of the pelvic girdle joints. A key role of the pelvis is the transfer of load from the trunk to the legs, and stability is required in order to achieve this. Stability is obtained via the ridges and grooves in the articular surfaces of the SIJ (known as form closure), and the compression forces generated by the muscles, fascia and ligaments (known as force closure) (Vleeming *et al.* 1990). Patients with PGP experience greater motion of the symphysis pubis joint during pregnancy (Mens *et al.* 2009), suggesting a decrease in the stability of the pelvic joints. This increased movement in the pelvic joints may

diminish the efficiency of load transfer, and increase the shear forces across the joint, resulting in pain (Vleeming *et al.* 2008).

### Evidence for use of pelvic support belt

The use of a pelvic support belt to manage PGP during pregnancy is often advocated clinically. Östgaard *et al.* (1994, p. 899) described belts as “a cost-effective unharmed tool for the pain relief for women with posterior pelvic pain”. The hypothesis is that the belt provides an external force that may improve lumbopelvic stability (Ho *et al.* 2005). In an anatomical study, mobility of the SIJ was reduced significantly following the application of a belt around the pelvic girdle (Vleeming *et al.* 1992). Snijders *et al.* (1993) used a biomechanical model to show that a pelvic belt worn with a small force can generate a self-bracing effect at the SIJ. Effective load transfer through the pelvis, as measured by the active straight leg raise (ASLR) test, has been improved by the application of a pelvic belt in non-pregnant women (Mens *et al.* 1999).

A study by Nilsson-Wikmar *et al.* (2005) compared the use of education and pelvic support belts for different exercise groups across three groups of pregnant women with PGP. Although these authors stated that the belts and the information that the women received seemed to be important in the reduction of pain intensity and the ability to accomplish activities of daily living, the results showed no statistically significant differences among the groups.

Depledge *et al.* (2005) investigated the management of symphysis pubis dysfunction during pregnancy, comparing the effectiveness of rigid and non-rigid pelvic support belts, and specific muscle strengthening exercises. These authors demonstrated a reduction in the average and worst pain in all groups, indicating that neither type of belt added to the effects provided by exercise and advice. They also found that 43% and 27% of the women using the non-rigid and rigid belts, respectively, found these to be

uncomfortable. The results of their study led them to question whether belts are appropriate for pregnant women.

The European guidelines for the diagnosis and treatment of PGP (Vleeming *et al.* 2008) state that there is no evidence to recommend the use of a pelvic belt as a single treatment for PGP. According to these guidelines, a pelvic support belt may be fitted to test for symptomatic relief, but should only be applied for short periods.

A literature review into the effectiveness of maternity support belts in the reduction of low back pain in pregnancy was carried out by Ho *et al.* (2009). They concluded that the evidence for the effectiveness of these belts remains inconclusive, and recommend that these are used in combination with an individually designed and delivered exercise and ergonomics education programme.

## Conclusions

Before issuing a support belt for PGP, the following considerations are recommended:

- Ensure that a comprehensive physiotherapy assessment is carried out, ideally by a specialist physiotherapist. It is important to differentiate between pain originating in the lumbar spine and PGP by using a combination of clinical tests (Box 1).
- The ASLR should improve on testing with manual compression at the pelvis, and on the application of a pelvic support belt.
- Pain on walking and standing should be reduced when wearing a support belt if it is to be issued.
- Sacroiliac joint laxity was found to be reduced when the belt is worn in a high position (just below the anterior superior iliac spine), rather than in a low one (at the level of the symphysis

**Box 1.** Tests that may be used to assess pelvic girdle pain (PGP)

- Palpation of bony landmarks of axial symmetry (i.e. the anterior and posterior superior iliac spine, iliac crests and symphysis pubis)
- Posterior pelvic pain provocation test
- Forward flexion in sitting or standing
- Flexion, Abduction, and External Rotation test to differentiate PGP from hip pain
- Palpation of the long dorsal ligaments
- Gaenslen's test
- Active straight leg raise test
- Stork/Gillett test
- Palpation of the lumbar spine to eliminate lumbar dysfunction

pubis) in a small study (10 women) that used non-pregnant subjects (Damen *et al.* 2002).

- It is important to ensure that patients understand how and in what position the belt should be worn, and that they can apply it correctly themselves.
- Patients should be advised when to wear the support belt (as little as possible and only when mobilizing).
- Advise that, if patients experience skin irritation, they should wear the belt over clothing or a Tubigrip. If patients are allergic to latex, a non-latex belt should be sourced.
- A pelvic support belt should not be issued alone: education, advice, exercise and manual therapy are all essential components of physiotherapy treatment for PGP.
- Compliance issues should also be considered before issuing a support belt.
- An increase in pain when wearing a support belt would be a contraindication to its use because this is suggestive of either malalignment or pre-existing excessive compression across the pelvic girdle joints. Neuromuscular assessment and correction, and possibly manual therapy, should be considered to address these dysfunctions.
- The presence of placenta previa is no longer considered to be a contraindication to the use of a pelvic support belt. Patients should be advised to stop using the belt immediately and seek medical advice if they have any concerns regarding the health of their babies.
- Patients should be advised to follow the instructions at all times, and to hand wash the belt, if required.

## Pelvic, Obstetric and Gynaecological Physiotherapy

## References

- Damen L., Spoor C. W., Snijders C. J. & Stam H. J. (2002) Does a pelvic belt influence sacroiliac joint laxity? *Clinical Biomechanics* **17** (7), 495–498.
- Depledge J., McNair P. J., Keal-Smith C. & Williams M. (2005) Management of symphysis pubis dysfunction during pregnancy using exercise and pelvic support belts. *Physical Therapy* **85** (12), 1290–1300.
- Ho S. S. M., Yu W. W. M., Lao T. T., *et al.* (2009) Effectiveness of maternity support belts in reducing low back pain in pregnancy: a review. *Journal of Clinical Nursing* **18** (11), 1523–1532.
- Mens J. M. A., Vleeming A., Snijders C. J., Stam H. J. & Ginai A. Z. (1999) The active straight leg raising test and mobility of the pelvic joints. *European Spine Journal* **8** (6), 468–473.

## Maternity/pelvic support belts

- Mens J. M. A., Pool-Goudzwaard A. & Stam H. J. (2009) Mobility of the pelvic joints in pregnancy-related lumbopelvic pain: a systematic review. *Obstetrical and Gynecological Survey* **64** (3), 200–208.
- Nilsson-Wikmar L., Holm K., Öijerstedt R. & Harms-Ringdahl K. (2005) Effect of three different physical therapy treatments on pain and activity in pregnant women with pelvic girdle pain: a randomized clinical trial with 3, 6, and 12 months follow-up postpartum. *Spine* **30** (8), 850–856.
- Östgaard H. C., Zetherström G., Roos-Hansson E. & Svanberg B. (1994) Reduction of back and posterior pelvic pain in pregnancy. *Spine* **19** (8), 894–900.
- Snijders C. J., Vleeming A. & Stoeckart R. (1993) Transfer of lumbosacral load to Iliac bones and legs. Part 1: Biomechanics of self-bracing of the sacroiliac joints and its significance for treatment and exercise. *Clinical Biomechanics* **8** (6), 285–294.
- Vleeming A., Stoeckart R., Volkers A. C. W. & Snijders C. J. (1990) Relation between form and function in the sacroiliac joint. Part 1: Clinical anatomical aspects. *Spine* **15** (2), 130–132.
- Vleeming A., Buyruk H. M., Stoeckart R., Karamursel S. & Snijders C. J. (1992) An integrated therapy for peripartum pelvic stability: a study of the biomechanical effects of pelvic belts. *American Journal of Obstetrics and Gynecology* **166** (4), 1243–1247.
- Vleeming A., Albert H. B., Östgaard H. C., Stureson B. & Stuge B. (2008) European guidelines for the diagnosis and treatment of pelvic girdle pain. *European Spine Journal* **17** (6), 794–819.
- Wu W. H., Meijer O. G., Uegaki K., *et al.* (2004) Pregnancy-related pelvic girdle pain (PPP), I: Terminology, clinical presentation, and prevalence. *European Spine Journal* **13** (7), 575–589.

## Other useful reading

- Pennick V. & Liddle S. D. (2013) Interventions for preventing and treating pelvic and back pain in pregnancy. *Cochrane Database of Systematic Reviews*, Issue 8. Art. No.: CD001139. DOI: 10.1002/14651858.CD001139.pub3.
- Van Benten E., Pool J., Mens J. & Pool-Goudzwaard A. (2014) Recommendations for physical therapists on the treatment of lumbopelvic pain during pregnancy: a systematic review. *Journal of Orthopaedic and Sports Physical Therapy* **44** (7), 464–473.