

Guidance for Health Professionals

PREGNANCY-RELATED PELVIC GIRDLE PAIN

formerly known as
Symphysis Pubis Dysfunction (SPD)



ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS IN WOMEN'S HEALTH

Contents

1.	Introduction	2
2.	What is pregnancy-related pelvic girdle pain (PGP)?	2
3.	Epidemiology	3
4.	Aetiology	3
5.	Risk factors	3
6.	Diagnosis of PGP.....	4
7.	Management	5
	i) Referral and care pathway.	5
	ii) Management consideration	6
	iii) General advice.....	7
	iv) Previous history of PGP	8
8.	Physiotherapy.....	8
	i) Assessment	8
	ii) Treatment and management.....	8
9.	Emotional effects of PGP	9
10.	Planning birth	10
	i) Informed choice	10
	ii) Active birth	10
	iii) Pain-free range of movement	11
	iv) Obstetric considerations.....	12
11.	Postnatal care on the ward	13
	i) Postnatal care on the ward	13
	ii) Breast feeding.....	13
	iii) Care and support.....	13
	iv) Emotional well-being	14
12.	Postnatal care after discharge.....	14
	i) Physiotherapy referral.....	14
	ii) Breastfeeding.....	14
	iii) Dysparuenia.....	14
	iv) Return of symptoms	15
	v) Further investigations and medical imaging.....	15
	vi) Planning future pregnancies.....	15
13.	Websites and contact details	16
	References.....	16
Appendix 1	Commonly used terms.....	19
	Misused terms	19
Appendix 2	Other useful reading	19
Appendix 3	Expert panel.....	19

1. Introduction

This leaflet was commissioned by the Association of Chartered Physiotherapists in Women's Health (ACPWH) and has been written and peer reviewed by a multidisciplinary group including obstetricians, physiotherapists, midwives and patient representatives.

Where possible, statements are based on the evidence available; otherwise they are informed by expert opinion, patient experience and best practice. Pregnancy-related pelvic girdle pain (PGP) is a term used to describe pain in the lumbo-sacral, sacro-iliac and symphysis pubis joints.

- It is important to acknowledge that pregnancy-related PGP is a common, recognised condition. It is common, but not normal, to have PGP in pregnancy
- **PGP is better managed with prompt identification and together with assessment and appropriate treatment, recovery can be anticipated**
- **It can be treated safely at any stage during pregnancy (or after birth) as soon as symptoms arise**
- In many women it can be treated effectively and may resolve within one or two treatments by a physiotherapist
- It is known that, if left untreated, this condition may last more than two years¹

The aims of this leaflet are to:

- increase awareness among all relevant healthcare professionals of pregnancy-related PGP
- provide recommendations for a seamless care pathway for women affected by PGP
- describe aetiology, risk factors, signs and symptoms with management options throughout pregnancy, birth, the postnatal period and beyond

2. What is pregnancy-related Pelvic Girdle Pain (PGP)?

- The term Symphysis Pubis Dysfunction (SPD) has been used previously to describe the pregnancy-associated pain, instability and dysfunction of the symphysis pubis joint (SPJ) and/or sacro-iliac joint (SIJ).
- In line with the European Guidelines (www.backpainurope.org) the term Pelvic Girdle Pain (PGP) is now the accepted umbrella term².
- PGP will be used throughout this leaflet to relate specifically to pregnancy-related pain in the lumbosacral region, SIJs and SPJ.
- PGP may have a biomechanical origin and be related to non-optimal stability of the pelvic joints³.
- Diastasis Symphysis Pubis (DSP) is a separate but related condition. It can only be confirmed by diagnostic imaging when it is shown that there is an abnormal, pathological, horizontal or vertical displacement of the symphysis pubis^{4;5}. DSP can occur ante-natally, during delivery, or post-natally.
- For other commonly used/misused terms see Appendix 1.

3. Epidemiology

- Lumbo-pelvic pain is common during pregnancy with a prevalence described variously as ranging from 50% to 70%⁶⁻¹².
- 14-22% of all pregnant women have serious PGP with 5-8% of these having severe problems with pain and disability^{13;14}.
- Serious PGP is present in 7% of women postpartum¹⁰.

4. Aetiology

- The causes of PGP are multi-factorial and often there is no obvious explanation.
- PGP is more likely to be a combination of factors that include:
 - the pelvic girdle joints moving asymmetrically³
 - abnormal pelvic girdle biomechanics from altered activity in the spinal¹⁵, abdominal, pelvic girdle, hip¹⁶ and/or pelvic floor muscles¹⁷
- A small number of women may have non-bio-mechanical but hormonally-induced pain in the pelvic girdle. Occasionally the position of the baby may produce symptoms allied to PGP.

5. Risk factors

- PGP may develop in women with no identifiable risk factors.
- The evidence for risk factors is inconclusive and some evidence is contradictory².
- The main risk factor appears to be a history of previous low-back/pelvic girdle/joint pain and/or previous trauma to the pelvis^{8;18;19}.

Other risk factors may include:

- pelvic girdle pain in a previous pregnancy¹⁸
- multiparity^{8;20}
- heavy workload^{8;9}
- poor workplace ergonomics and awkward working conditions¹⁸
- high body mass index and weight pre-pregnancy and at end of pregnancy^{12;21}
- general joint hypermobility^{12;21}

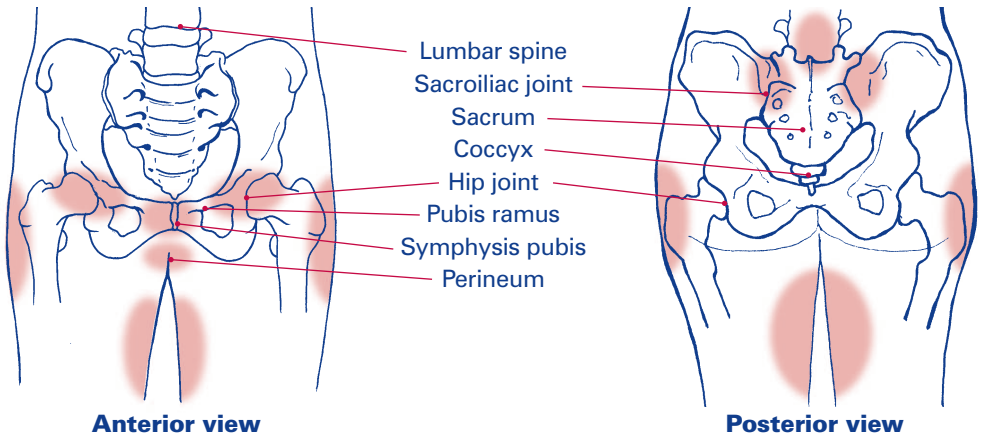
DSP - Evidence for risk factors is contradictory and often the exact cause is unknown but may include:

- precipitous delivery²²
- previous injury to the pelvis²²
- PGP in a previous pregnancy²²
- difficult birth²²
- forceful and excessive abduction of the thighs during delivery^{1;23-27}
- other trauma such as falls in pregnancy^{23;26;27}

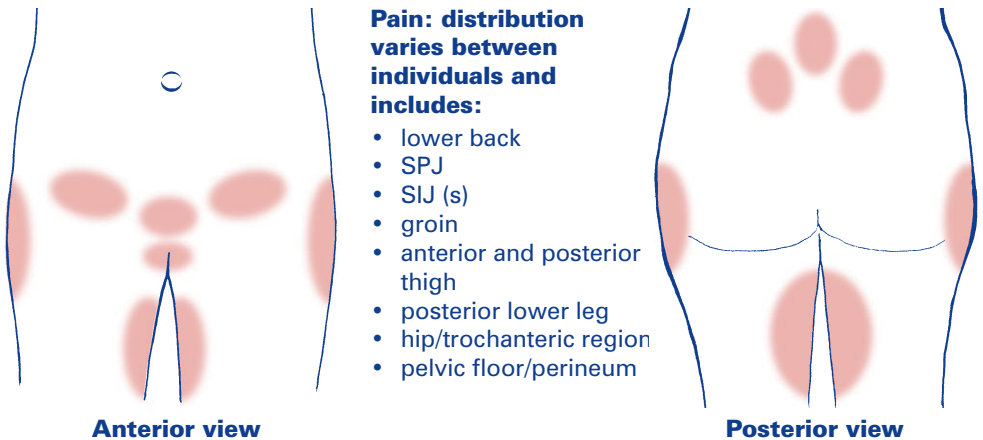
Factors not associated with PGP include:

- contraceptive pill use, time interval since last pregnancy, height, smoking and age^{8;18-20}
- breastfeeding

6. Diagnosis of PGP



- The diagnosis can be reached from signs and symptoms experienced and described by a woman during the pregnancy or in the postnatal period.
- All women should be asked whether they have any problems with their back or pelvis
- Signs and symptoms should not be ignored or dismissed as aches and pains of pregnancy. Health professionals should always listen to the woman, have her problems investigated and/or refer on as appropriate (see Section 7).



Common signs and symptoms include:

- difficulty walking (waddling gait)
- pain on weight bearing on one leg e.g. climbing stairs, dressing
- pain and/or difficulty in straddle movements e.g. getting in and out of bath; turning in bed
- clicking or grinding in pelvic area – may be audible or palpable
- limited and painful hip abduction (though some women have normal or only partly limited abduction) difficulty lying in some positions e.g. supine, side-lying

- pain during normal activities of daily life
- pain and difficulty during sexual intercourse

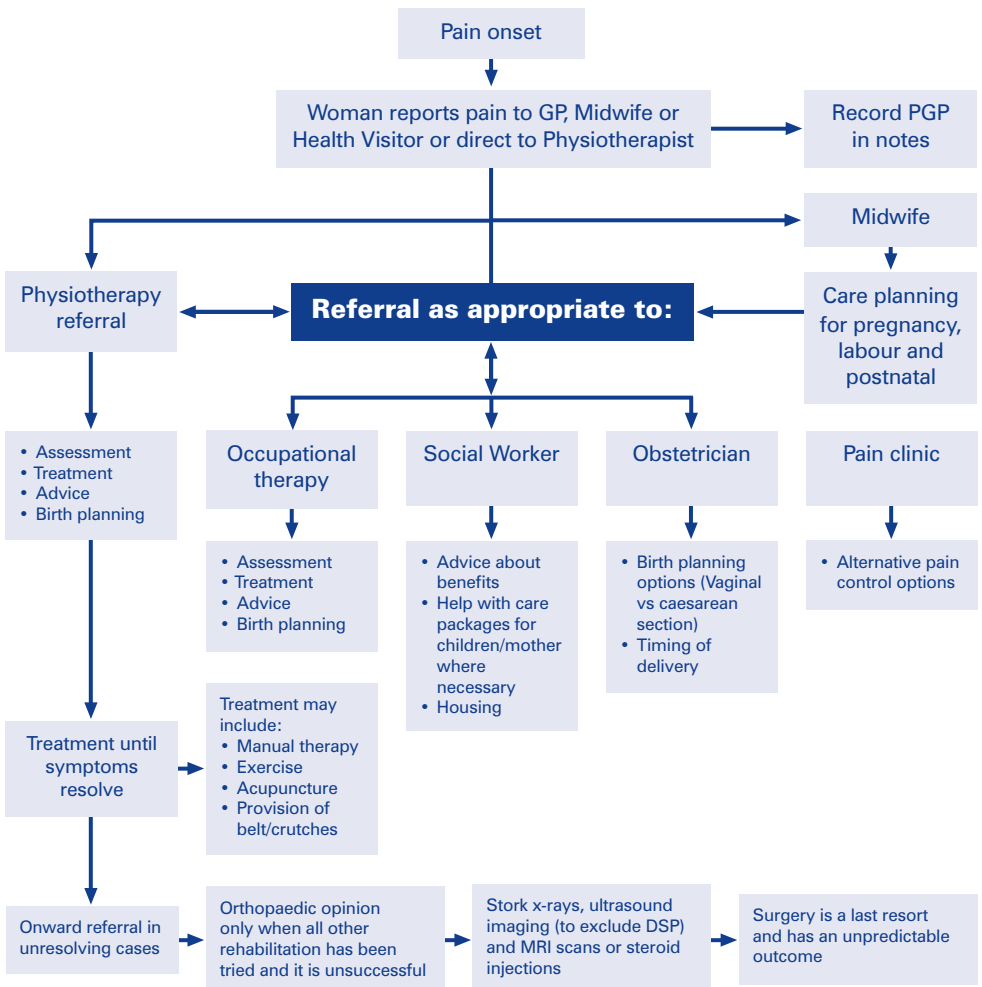
Differential diagnosis:

The diagnosis can be reached having excluded:

- Urinary tract or other infection
- Lumbar spine problems (requires physiotherapy referral)
- Braxton Hicks or labour contractions

7. Management

i) Referral and care pathway



ii) Management considerations for health professionals at first point of contact

<p>Give a clear and reasoned explanation of the condition to the woman and her family, partner, and/or carers</p>	<p>An acknowledgement of the physical and emotional aspects of the condition should be offered, together with further information about:</p> <ul style="list-style-type: none">• resources e.g. aids and appliances, other services available• peer support groups e.g. Pelvic Partnership (see Section 13)• leaflets as required (Appendix 2)
<p>Pain control – consider giving or referring appropriately for advice, prescription and monitoring</p>	<ul style="list-style-type: none">• simple analgesia (paracetamol)• low potency opiates (codeine, dihydrocodeine)• combinations of above (codydramol, etc)• consider using progressively and using most potent/sedating restrictively– at worst times, perhaps overnight• usually considered appropriate to avoid non-steroidal anti-inflammatory drugs during pregnancy• acupuncture• TENS – refer to physiotherapist

iii) General advice:

Consider the woman's individual needs: if an activity does not increase pain, or if pain has resolved after treatment, activity may not automatically be restricted.

Advice:	It can help to:
remain active within the limits of pain	avoid activities which she knows make the pain worse
accept offers of help and involve partner, family and friends in daily chores;	ask for other help if needed
rest is important	rest more frequently, or sit down for activities that normally involve standing e.g. ironing
avoid standing on one leg	dress sitting down
consider alternative sleeping position	lie on her side with pillows between legs for comfort. Turn "under" when turning in bed, or turn over with knees together and squeeze buttocks
explore alternative ways to climb stairs	go upstairs one leg at a time with the most pain free leg first and the other leg joining it on the step
plan the day	bring everything needed downstairs in the morning and set up changing stations both up and downstairs have drinks on hand e.g. thermos flasks a rucksack may be helpful to carry things around the house, especially if crutches have to be used
avoid activities that involve asymmetrical positions of the pelvis	avoid sitting cross-legged avoid reaching, pushing or pulling to one side avoid bending and twisting to lift or carrying anything on one hip e.g. toddlers
consider alternative positions for sexual intercourse	try lying on the side or kneeling on all fours
organise hospital appointments for the same day if possible	combine appointments for antenatal care and physiotherapy

This is not an exhaustive list. Further ideas for managing day-to-day activities are available from the Pelvic Partnership website (see Section 13).

iv) Previous history of PGP

If a woman has experienced PGP previously:

- she should be encouraged to contact the physiotherapy department
- a patient self-help/physiotherapy leaflet should be given (Appendix 2)
- the health professional should make an urgent physiotherapy referral
- if an NHS physiotherapist is not available quickly, the woman may wish to access an appropriately experienced private physiotherapist (see Section 13) or other professional, (including osteopath, chiropractor, or acupuncturist) with appropriate expertise

8. Physiotherapy

Women can be treated safely at any stage in pregnancy with standard physiotherapy interventions.

Women should be referred to a physiotherapist who has appropriate training and expertise in PGP management and treatment. This may be a women's health or musculoskeletal physiotherapist.

- Physiotherapists offer a holistic approach in the management of antenatal and postnatal PGP²⁸ and can advise about labour and birth.
- Physiotherapy aims to optimise physical and emotional health of the mother by improving spinal and pelvic girdle biomechanics and stability, improving strength of trunk and pelvic girdle muscles, improving range of hip mobility, controlling pain and improving function²⁹.
- For best practice, the physiotherapist will perform a detailed physical examination of the woman to determine the origin of the symptoms (which differ between women) and plan appropriate treatment²⁹.

i) Assessment should include (for best practice):

- spinal, pelvic girdle and hip joint examination
- examination of muscles responsible for trunk, pelvic girdle and hip stability and strength
- assessment of the nerves supplying the muscles
- assessment of functional abilities

ii) Treatment and management may include (for best practice):

- appropriate manual therapy as required^{13;14} e.g. mobilisations, manipulation, muscle energy techniques, stretches. Manual therapy should be aimed at correcting any spinal, pelvic and hip joint dysfunction including increasing hip joint mobility (especially abduction).
- exercises to retrain motor control and strength of abdominal, spinal, pelvic girdle, hip and pelvic floor muscles³⁰⁻³²
- advice: including back care, ergonomics, lifting, looking after baby and toddlers and positions for sexual intercourse
- pain control as an adjunct to the above modalities, in particular acupuncture^{30;33-36} or TENS (guidance for use of TENS in pregnancy is available on the ACPWH website - see Section 13)
- exercises in water³⁶
- provision of equipment as an adjunct to treatment e.g. crutches, pelvic girdle support belts³⁷⁻⁴⁰, wheelchairs

Remember that:

- **it is common, but not normal, to have PGP in pregnancy and every woman presents differently**
- **PGP is a treatable/ manageable condition**
- **women should be advised to seek help early**

With a multidisciplinary, collaborative approach both short- and long-term physical and psychological morbidity may be reduced.

9. Emotional effects of PGP

Health professionals should ask all women about their psychological well-being.

- Women with PGP may experience a range of emotional effects. Fears have been noted^{41;42} about:
 - the condition itself
 - increased pain and disability
 - causing further damage
 - prognosis
 - implications for labour and delivery
 - positions for birth
 - future childbearing
- Women may feel:
 - guilt if unable to fulfil their mothering role
 - anger and frustration at their dependency on others and inability to care for themselves or their family⁴¹
 - cheated and isolated because they cannot enjoy their pregnancy or maintain their fitness
- Relationships with partner and children may be compromised as the family adjusts to new circumstances.
- Depression may be associated with PGP in the antenatal and postnatal period and requires prompt recognition and management.

i) Effect of chronic pain

- Significant pain (more than 7/10 on a visual analogue scale) in the early stages of a condition is a major predictor of chronicity⁴³ so effective pain relief and management in early stages is vital.
- Tissue damage may result in a maladaptive response in the central nervous system which in turn may be influenced by the patient's emotions and beliefs⁴³.
- Low or depressed moods are largely the result of the pain rather than the cause, but these influence general health and perception of pain.

ii) Management of chronic pain⁴²

Consider effective means of pain relief (see Sections 7 ii) and 8 ii)) in conjunction with:

- pacing (working within limits of pain and endurance)
- graded fitness programme
- relaxation techniques
- communication and coping skills

10. Planning birth

This section has been based on expert opinion and evidence where available. All relevant health professionals should be competent to discuss the following information.

The majority of women will be able to have a normal spontaneous vaginal delivery and should be involved in discussion to achieve this.

Women may use a birth plan to record their wishes.

i) Informed choice may include discussion on:

- pain relief
- water birth
- mode of delivery (see Section 10 ii)
- labour and birthing positions

ii) Active Birth: women should be encouraged to be upright and mobile during labour. Alternative positions for the birth should be discussed e.g.

- all fours
- supported kneeling
- side lying with pillows/knees to chest
- labour and birth in water
- discussion on caesarean section, in some exceptional cases

CAUTION

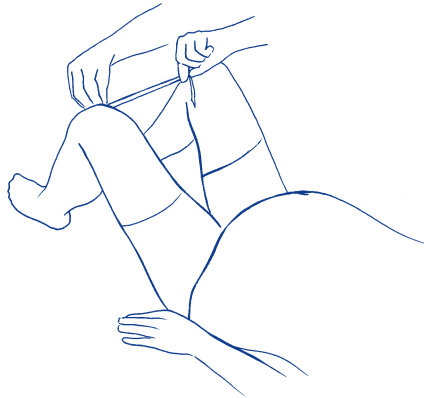
Advise not to put feet on attendants' hips or shoulders

Feet on midwives' hips should be completely avoided because of –

- a) Risk to mother (see Section 5)
- b) Risk to midwife (see RCM manual handling policy)

iii) Pain free range of movement (hip abduction)

- Any antenatal restriction of the pain free range of hip abduction (gap between the knees) should have increased with physiotherapy. However if restriction persists the pain free range of abduction (with the woman lying flat or in a supported lying position with her knees bent and feet together), should be assessed and recorded both antenatally and early in labour. It is important that there should be no intrapartum damage to the pelvic girdle joints.
- Care should be taken not to exceed the pain free range of abduction, particularly if epidural or spinal anaesthesia is used, as this might mask pain and cause damage to the pelvic joints
- Abduction beyond pain free range, squatting and forced abduction should be avoided
- Vaginal examinations may be performed in a range of positions such as side lying or on all fours
- For instrumental delivery or suturing when using the lithotomy position, care should be taken to lift both legs together keeping within the pain free range



Measuring the pain free range of abduction

Measure the distance between the inside of both the knees. Where possible the woman should not deliver with her knees wider apart than was comfortable before labour. Forced abduction and abduction beyond pain free range should be avoided.

iv) Obstetric considerations

Expert opinion suggests:

a) Normal vaginal delivery

- The best option for most women, if it can be achieved.
Ideally:
 - Spontaneous onset of labour
 - 'Comfortable' birthing position e.g. high supported kneeling or left lateral position
 - No forced abduction of thighs

b) Induction, if indicated for reasons other than PGP

- Parous women, previous normal vaginal delivery at term who present at 38+ weeks.
 - Likely to result in normal vaginal delivery, but may have longer 'latent' phase, especially if cervix is unfavourable.
- Primiparous women – especially if less than 41 weeks and cervix unfavourable.
 - Significant risk of need for emergency Caesarean Section (CS) or assisted vaginal delivery.

c) Elective Caesarean Section (CS)

- May be the only real option in women who are very severely affected by PGP – where a comfortable birthing position cannot be maintained.
- May be an option for other less severe cases, but no evidence that elective CS (vs. normal vaginal delivery) confers any benefit on recovery, prognosis or risk of recurrence.
- May impact on fertility and fecundity.
- Limits scope for induction in future pregnancies.
- Future attempts at vaginal birth after caesarean (VBAC) carry some risk.

d) Assisted vaginal delivery

- Ventouse preferred.
- May be possible in the left lateral position.
- Avoid excessive abduction of thighs.
- Unless likely to be easy – emergency CS may be a better option.
- Emergency CS (especially at full dilatation) associated with its own risks.

e) Epidural analgesia

- 'Mobile mix' preferable.
- Essential to observe/maintain pain-free abduction/gap.

11. Postnatal care on the ward

i) Mobility

Mobilisation or bed rest?	<ul style="list-style-type: none">• Bed rest may be required until pain is controlled. Care should be taken not to cause further pain during mobilisation as analgesia may mask severe symptoms. Thromboprophylaxis should be considered.• When possible, confer with the physiotherapist about length of bed rest, mobilisation and provision of crutches and belts.
Physiotherapy referral	<ul style="list-style-type: none">• For early evaluation and treatment and to assess mobility needs.
Pain relief	<ul style="list-style-type: none">• Regular analgesia - NSAIDs and low potency opiates (codeine) should be given.
If PGP occurs immediately postnatally	<ul style="list-style-type: none">• Women need to be managed as above.• If the PGP has occurred during labour or delivery refer to physiotherapy. Stork x-rays should be considered in due course to exclude DSP.
Discharge	<ul style="list-style-type: none">• Women should be discharged home with appropriate package of care and follow-up arranged.

ii) Breast feeding

- Early attachment of the baby to the breast will promote successful and long-term breastfeeding.
- Breastfeeding will not slow the rate of recovery from PGP. It is an important role that only the mother can fulfil and the success is likely to improve self-esteem and psychological well-being.
- Following birth the mother should be offered help to find a position of physical comfort e.g. side-lying, supported sitting. This also applies to mothers who are bottle feeding or expressing milk
- Most NSAIDs and opiates are considered safe to take while breastfeeding. It is the prescriber's responsibility to ensure safety of any medication.

iii) Care and support that may be offered:

- help with personal care
- help caring for the new baby:
 - lifting baby out of the cot for feeding
 - changing nappies
 - bathing the baby

- where facilities permit, a partner can be encouraged to stay to help with the care of mother and baby
- where possible, en-suite facilities should be provided or a bed allocated close to the toilet
- food and drink should be brought to the mother
- early referral for physiotherapy review
- referral to occupational therapist or social services and manual handling adviser for any aids and equipment as appropriate

Useful equipment:

- bolt-on cot
- electric bed
- walk-in shower facility
- shower/bath seat
- raised toilet seat

For mobilising:

- wheelchair
- crutches
- frames

For turning in bed

- sliding sheet
- monkey pole
- rope ladder
- bed lever

Other

- z-beds for partner/family or specially allocated family rooms for women with PGP or other disabilities

iv) Emotional well-being

- Effective management of PGP and appropriate emotional support may reduce long term physical and psychological morbidity.
- If symptoms of ante or postnatal depression are suspected, refer for appropriate treatment.

12. Postnatal care after discharge – best practice

At any postnatal contact women should be asked whether they have pelvic girdle or lower back pain.

A woman with existing PGP or who has developed a new episode of pain needs referral for physiotherapy.

i) Physiotherapy referral

- If symptoms persist, physiotherapy should be resumed as soon as the woman feels able to attend.
- Reassessment of the spine and pelvis should be undertaken and an appropriate treatment programme agreed.

ii) Breastfeeding.

- Mothers should be encouraged to continue to breastfeed for as long as they wish.

iii) Dyspareunia (painful intercourse)

- Different positions for sexual intercourse or alternative ways to be sexually intimate to avoid discomfort should be suggested.
- Other possible reasons for dyspareunia should be considered (e.g. poor scar healing etc).

iv) Return of symptoms

- When menstruation returns some women report a recurrence of symptoms that may resolve after a couple of months, but for some they persist with every cycle. Intensity varies considerably but women should be reassured that this does not signal a return of severe disability.
- If symptoms recur, the pelvic girdle should be re-assessed by a physiotherapist and appropriate treatment given and adequate pain relief offered.
- The woman should be encouraged to avoid known pain precipitators, such as pushing a supermarket trolley.

v) Further investigation and medical imaging

- If symptoms are not resolving despite musculoskeletal physiotherapy interventions, relevant orthopaedic opinion may be sought.
- There are no recommended time-scales for this, but imaging should be carried out when there is concern about length of recovery.
- Further investigations may include:
 - stork x-rays to assess the amount of vertical and horizontal shift at the symphysis pubis when weight-bearing on one leg
 - MRI imaging to assess inflammation around the SP and SI joints.
 - ultrasound scanning (can also be done during pregnancy) to assess size of SPJ gap

There is no relationship between amount of pain and increased range of motion in the pelvic joints^{1;2} or between the size of the gap between the two pubic bones on imaging and amount of pain⁴.

vi) Planning future pregnancies

- PGP recurs frequently in subsequent pregnancies, though it will not necessarily be as severe if well managed.
- There is no particular advantage in leaving a long gap between babies though some abdominal muscles may not have recovered by 12 months postpartum⁴⁴.
- The woman may consider reducing the symptoms of PGP, becoming fully fit, losing excess weight and waiting until other toddlers can walk before considering another pregnancy.
- Women with more severe PGP either considering a further pregnancy or who are already in early pregnancy, may wish to seek a referral for physiotherapy for review and advice.

In conclusion:

- **PGP is common, but not normal, in pregnancy and every woman presents differently.**
- **It is a treatable, manageable condition.**
- **Women should be advised to seek help early.**
- **With a multiprofessional, collaborative approach both short- and long-term physical and psychological morbidity may be reduced.**

13. Websites and contact details

- Association of Chartered Physiotherapists in Women's Health (ACPWH) - <http://www.acpwh.co.uk>
- Pelvic Partnership - <http://www.pelvicpartnership.org.uk>
- Chartered Society of Physiotherapy (CSP) - <http://www.csp.org.uk>; Tel 020 7366 6666
- Manipulation Association of Chartered Physiotherapists (MACP) - <http://www.macpweb.org>
- Organisation of Chartered Physiotherapists in Private Practice (OCPPP) - <http://www.physiofirst.org.uk>
- Acupuncture Association of Chartered Physiotherapists (AACP) <http://www.aacp.uk.com>
- British Medical Acupuncture Society <http://www.medical-acupuncture.co.uk>

With help the woman should not become disabled during pregnancy, but if she does, the following two websites offer practical advice and support:

- Disabled Parents Network <http://disabledparentsnetwork.org.uk>
- Disability, Pregnancy and Parenthood International <http://www.dppi.org.uk>

References

- (1) Albert H, Godsken M, Westergaard J. Prognosis in four syndromes of pregnancy-related pelvic pain. *Acta Obstet Gynecol Scand* 2001; 80(6):505-510.
- (2) Vleeming A, Albert H, Ostgaard HC, Stuge B, Sturesson B. European guidelines on the diagnosis and treatment of pelvic girdle pain. European Commission, Research Directorate-General, Department of Policy, Coordination and Strategy 2004.
- (3) Damen L, Buyruk HM, Guler-Uysal F, Lotgering FK, Snijders CJ, Stam HJ. Pelvic pain during pregnancy is associated with asymmetric laxity of the sacroiliac joints. *Acta Obstet Gynecol Scand* 2001; 80(11):1019-1024.
- (4) Bjorklund K, Nordstrom ML, Bergstrom S. Sonographic assessment of symphyseal joint distention during pregnancy and post partum with special reference to pelvic pain. *Acta Obstet Gynecol Scand* 1999; 78(2):125-130.
- (5) Bjorklund K, Lindgren PG, Bergstrom S, Ulmsten U. Sonographic assessment of symphyseal joint distention intra partum. *Acta Obstet Gynecol Scand* 1997; 76(3):227-232.
- (6) Mantle MJ, Greenwood RM, Currey HL. Backache in pregnancy. *Rheumatol Rehabil* 1977; 16(2):95-101.
- (7) Fast A, Shapiro D, Ducommun EJ, Friedmann LW, Bouklas T, Floman Y. Low-back pain in pregnancy. *Spine* 1987; 12(4):368-371.
- (8) Berg G, Hammar M, Moller-Nielsen J, Linden U, Thorblad J. Low back pain during pregnancy. *Obstet Gynecol* 1988; 71(1):71-75.
- (9) Ostgaard HC, Andersson GB, Karlsson K. Prevalence of back pain in pregnancy. *Spine* 1991; 16(5):549-552.
- (10) Wu WH, Meijer OG, Uegaki K, Mens JM, Van Dieen JH, Wuisman PI et al. Pregnancy-related pelvic girdle pain (PPP), I: Terminology, clinical presentation, and prevalence. *Eur Spine J* 2004.

- (11) Gutke A, Ostgaard HC, Oberg B. Pelvic girdle pain and lumbar pain in pregnancy: a cohort study of the consequences in terms of health and functioning. *Spine* 2006; 31(5):E149-E155.
- (12) Mogren IM, Pohjanen AI. Low back pain and pelvic pain during pregnancy: prevalence and risk factors. *Spine* 2005; 30(8):983-991.
- (13) Daly JM, Frame PS, Rapoza PA. Sacroiliac subluxation: a common, treatable cause of low-back pain in pregnancy. *Fam Pract Res J* 1991; 11(2):149-159.
- (14) McIntyre IN, Broadhurst NA. Effective treatment of low back pain in pregnancy. *Aust Fam Physician* 1996; 25(9 Suppl 2):S65-S67.
- (15) Sihvonen T, Huttunen M, Makkonen M, Airaksinen O. Functional changes in back muscle activity correlate with pain intensity and prediction of low back pain during pregnancy. *Arch Phys Med Rehabil* 1998; 79(10):1210-1212.
- (16) Pool-Goudzwaard AL, Vleeming A, Stoeckart R, Snijders CJ, Mens JM. Insufficient lumbopelvic stability: a clinical, anatomical and biomechanical approach to 'a-specific' low back pain. *Man Ther* 1998; 3(1):12-20.
- (17) Pool-Goudzwaard AL, Slieker ten Hove MC, Vierhout ME, Mulder PH, Pool JJ, Snijders CJ et al. Relations between pregnancy-related low back pain, pelvic floor activity and pelvic floor dysfunction. *Int Urogynecol J Pelvic Floor Dysfunct* 2005; 16(6):468-474.
- (18) Larsen EC, Wilken-Jensen C, Hansen A, Jensen DV, Johansen S, Minck H et al. Symptom-giving pelvic girdle relaxation in pregnancy. I: Prevalence and risk factors. *Acta Obstet Gynecol Scand* 1999; 78(2):105-110.
- (19) Ostgaard HC, Andersson GB. Previous back pain and risk of developing back pain in a future pregnancy. *Spine* 1991; 16(4):432-436.
- (20) Kristiansson P, Svardsudd K, von Schoultz B. Back pain during pregnancy: a prospective study. *Spine* 1996; 21(6):702-709.
- (21) Mogren IM. BMI, pain and hyper-mobility are determinants of long-term outcome for women with low back pain and pelvic pain during pregnancy. *Eur Spine J* 2006 Jul; 15(7): 1093-1102.
- (22) Lindsey RW, Leggon RE, Wright DG, Nolasco DR. Separation of the symphysis pubis in association with childbearing. A case report. *J Bone Joint Surg Am* 1988; 70(2):289-292.
- (23) Gherman RB, Ouzounian JG, Incerpi MH, Goodwin TM. Symphyseal separation and transient femoral neuropathy associated with the McRoberts' maneuver. *Am J Obstet Gynecol* 1998; 178(3):609-610.
- (24) Ostgaard HC, Roos-Hansson E, Zetherstrom G. Regression of back and posterior pelvic pain after pregnancy. *Spine* 1996; 21(23):2777-2780.
- (25) Heath T, Gherman RB. Symphyseal separation, sacroiliac joint dislocation and transient lateral femoral cutaneous neuropathy associated with McRoberts' maneuver. A case report. *J Reprod Med* 1999; 44(10):902-904.
- (26) Cappiello GA, Oliver BC. Rupture of symphysis pubis caused by forceful and excessive abduction of the thighs with labor epidural anesthesia. *J Fla Med Assoc* 1995; 82(4):261-263.
- (27) Kharrazi FD, Rodgers WB, Kennedy JG, Lhowe DW. Parturition-induced pelvic dislocation: a report of four cases. *J Orthop Trauma* 1997; 11(4):277-281.
- (28) Jain S, Eedarapalli P, Jamjute P, Sawdy R. Symphysis pubis dysfunction: a practical approach to management. *The Obstetrician and Gynaecologist* 2006; 8:153-158.

- (29) Coldron Y. "Mind the Gap" - Symphysis pubis dysfunction revisited. *Journal of the Association of Chartered Physiotherapists in Women's Health* 2005; 96 (Spring) 3-15.
- (30) Elden H, Ladfors L, Olsen MF, Ostgaard HC, Hagberg H. Effects of acupuncture and stabilising exercises as adjunct to standard treatment in pregnant women with pelvic girdle pain: randomised single blind controlled trial. *BMJ* 2005; 330(7494):761.
- (31) Stuge B, Veierod MB, Laerum E, Vollestad N. The efficacy of a treatment program focusing on specific stabilizing exercises for pelvic girdle pain after pregnancy: a two-year follow-up of a randomized clinical trial. *Spine* 2004; 29(10):E197-E203.
- (32) Stuge B, Laerum E, Kirkesola G, Vollestad N. The efficacy of a treatment program focusing on specific stabilizing exercises for pelvic girdle pain after pregnancy: a randomized controlled trial. *Spine* 2004; 29(4):351-359.
- (33) Ternov NK, Grennert L, Aberg A, Algotsson L, Akeson J. Acupuncture for lower back and pelvic pain in late pregnancy: a retrospective report on 167 consecutive cases. *Pain Med* 2001; 2(3):204-207.
- (34) Guerreiro da Silva JB, Nakamura MU, Cordeiro JA, Kulay L, Jr. Acupuncture for low back pain in pregnancy - a prospective, quasi-randomised, controlled study. *Acupunct Med* 2004; 22(2):60-67.
- (35) Lund I, Lundeberg T, Lonnberg L, Svensson E. Decrease of pregnant women's pelvic pain after acupuncture: a randomized controlled single-blind study. *Acta Obstet Gynecol Scand* 2006; 85(1):12-19.
- (36) Young G, Jewell D. Interventions for preventing and treating pelvic and back pain in pregnancy. *Cochrane Database Syst Rev* 2002; (1):CD001139.
- (37) Vleeming A, Buyruk HM, Stoeckart R, Karamursel S, Snijders CJ. An integrated therapy for peripartum pelvic instability: a study of the biomechanical effects of pelvic belts. *Am J Obstet Gynecol* 1992; 166(4):1243-1247.
- (38) Cholewicki J, Juluru K, Radebold A, Panjabi MM, McGill SM. Lumbar spine stability can be augmented with an abdominal belt and/or increased intra-abdominal pressure. *Eur Spine J* 1999; 8(5):388-395.
- (39) Damen L, Spoor CW, Snijders CJ, Stam HJ. Does a pelvic belt influence sacroiliac joint laxity? *Clin Biomech (Bristol , Avon)* 2002; 17(7):495-498.
- (40) Mens JM, Damen L, Snijders CJ, Stam HJ. The mechanical effect of a pelvic belt in patients with pregnancy-related pelvic pain. *Clin Biomech (Bristol , Avon)* 2006; 21(2):122-127.
- (41) Shepherd J. Symphysis pubis dysfunction: a hidden cause of morbidity. *Brit J Midwif* 2005; 13(5):301-307.
- (42) Papadopoulos C, Harding V. Chronic pain, pregnancy and child rearing. In: Gifford L, editor. *Topical Issues in Pain 2*. Falmouth: CNS Press, 2000: 187-195.
- (43) Gifford L. Tissue and input related mechanisms. In: Gilbert A, editor. *Topical Issues in Pain: 2*. Falmouth: NOI Press, 1998: 57-65.
- (44) Coldron Y, Stokes MJ, Newham DJ, Cook K. Postpartum characteristics of rectus abdominis on ultrasound imaging. *Man Ther* 2007: In press.

Appendix 1 - Terminology

1a. Commonly used terms

- SPD (Symphysis Pubis Dysfunction – umbrella term)
- Symphysiolysis/anterior pelvic pain (Unspecified pain around the SPJ)
- Osteitis pubis (Inflammation of the SPJ with bony changes on X-Ray)
- SIJ pain (Pain in the sacro-iliac joints)
- Pelvic girdle relaxation
- Low back pain (Pain of lumbar spine origin)
- Hip pain (Pain arising from the hip joint)
- Diastasis symphysis pubis (DSP) (Separation of the symphysis pubis joint).

1b. Misused terminology

- “Gapping”,
- “Relaxed/split pelvis”,
- “Split or torn muscles”-
- “Separated or displaced joints”
- “Dislocated pelvis”

These terms are unhelpful as they may increase the woman’s anxiety and are not accurate descriptions of the actual condition

Appendix 2 - Other useful reading

- Pregnancy-related Pelvic Girdle Pain (For Mothers-to-be and New Mothers) - ACPWH
- Fit for Pregnancy (Antenatal leaflet) - ACPWH
- Fit for Birth - ACPWH
- Fit for Motherhood (Postnatal Leaflet) - ACPWH
- Fit and Safe - ACPWH
- The Mitchell Method of Simple Relaxation - ACPWH
- NICE guidelines on postnatal care
- ACPWH guidance on the safe use of TENS for musculoskeletal pain during pregnancy (See ACPWH website on page 16 - section 13)

Appendix 3 - Expert Panel

In order to clarify current thinking around pregnancy-related PGP, the ACPWH brought together a panel of experts who reviewed the literature and together with clinical experience developed this leaflet. The expert panel consisted of:-

Dr. Yvonne Coldron (Physiotherapist)
Sarah Fishburn (Patient representative)
Mr. Malcolm Griffiths (Obstetrician)
Paula Iguarada-Martinez (Physiotherapist)
Ros Thomas (Physiotherapist)
Shernaz Screwala (Physiotherapist)
Jancis Shepherd (Midwife)

©ACPWH 2007

Reproduction of this leaflet in part or in whole
is prohibited

For review 2010