Reframing beliefs and instiling facts for contemporary management of pregnancyrelated pelvic girdle pain

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UNDERSTANDING PREGNANCY-**RELATED PELVIC GIRDLE PAIN (PPGP)**

PPGP is a specific category of pelvic girdle pain (PGP) impacting those in the perinatal period and differs in its aetiology as it is related to pregnancy and associated biopsychosocial influences. PGP in pregnancy and through the first postpartum year is common and combined with low back pain is estimated to occur in 56%-72% of antepartum people with 20% reporting severe symptoms during 20-30 weeks' gestation and 33%-50% reporting symptoms before 20 weeks' gestation. 12 PPGP is a significant cause of disability, reduced quality of life and early medical leave from work. People who experience more persistent symptoms in pregnancy can be at risk for poorer longterm outcomes.3 Lack of belief in resolution, increased emotional distress and pain severity have potential for persistent PGP after pregnancy. 14 Early intervention in pregnancy and instiling the belief that it can improve will create a better long-term prognosis.

THE CHALLENGE OF BIOMECHANICAL

Despite mounting evidence of the role that psychosocial and physiological factors play, PGP continues to be mainly understood and treated as a purely biomechanical issue. However, congruent with broader literature examining lumbopelvic pain more globally, PPGP must be understood along with the evolution of contemporary pain science regarding the multifaceted nature of pain and the context of each pregnant person's unique lived experience. ^{5 6} The 2017 Antepartum PGP Guidelines highlight the cognitive nature of risk factors for development of PPGP, including work dissatisfaction, previous

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pelvic trauma and history of low back pain and/or PGP, especially in a previous pregnancy, emphasising the potential negative impact of associated fear. 12



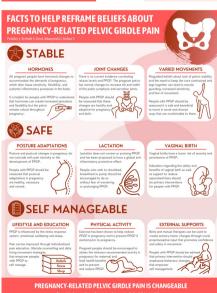


Figure 1 Infographic containing facts to help reframe beliefs about pregnancy-related pelvic girdle pain.

UNHELPFUL NARRATIVES ABOUT PPGP

From our shared practice experiences and interactions with the wider field of maternal medicine, we understand that patients and well-intended clinicians may perpetuate unhelpful beliefs regarding PPGP. Common narratives with unhelpful beliefs are:

- Pelvic pain is a normal part of pregnancy.
- Pelvic pain will go away as soon as the baby is born.
- The hormone relaxin makes the pelvis unstable.
- Pelvic pain is worse because of poor posture and alignment.
- Pelvic pain is caused by unstable pelvic ligaments and joints.
- Moving less and keeping the legs closed will reduce pelvic pain.
- Breastfeeding/chestfeeding hormones will prolong pelvic pain and instability.
- Birthing vaginally will worsen pelvic
- Support belts should be worn to help stabilise the pelvis.

CONCERNS WITH UNHELPFUL BELIEFS

While these narratives attempt to provide reasons for the pain experience, the lack of current evidence supporting these statements, and subsequent perpetuation of these unhelpful beliefs about PPGP, can result in conflicting management strategies or failure to address many of the components influencing the pain experience. The evolution of contemporary pain science regarding the multifaceted nature of musculoskeletal pain in general and specifically applied to PGP highlights the need to reframe these beliefs and instil facts for the associated care of PPGP.5-7

When training athletes with pain in the absence of acute trauma or injury, current practices are targeted towards creating more freedom, flexibility, strength and diversity of movement that ultimately allow for more comfort and resiliency. These same concepts must be applied to our pregnant and postpartum populations to broaden their capacity for movement and adaptability. PPGP presentation is now more broadly understood to be a reflection of sensitivity of tissues, and not tissue instability, injury or harm.^{5 6} By addressing the associated beliefs and fears around movement, people are able to resume activities with a greater understanding of their body, diversify patterns and reduce pain and discomfort.1





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REFRAMING BELIEFS ABOUT PPGP TO STABLE, SAFE AND SELF MANAGEABLE

Inspired by The Back Facts and The 6Rs Framework infographics for clinical research knowledge translation, we have proposed three key terms to reframe PPGP care—Stable, Safe and Self Manageable.⁸⁹ These terms were chosen to help dispel the unhelpful beliefs that certain activities are unsafe, that the pelvis is unstable and that there is no management available for this condition. Reframing PPGP into these three subcategories with nine fact-based clinical recommendations in the infographic (figure 1) may help clinicians and people with PPGP to unpack common questions and beliefs, improve clinical dialogue and offer strategies for management. We drew our clinical recommendations from contemporary literature and have provided a supplemental reference table (online supplemental file 1) to support deeper exploration of the resources.

This knowledge translation is necessary to promote messages that decrease fear and catastrophisation while promoting self-efficacy surrounding PPGP. Clinicians can achieve this by approaching care from a psychologically informed perspective, using multimodal approaches including education, counselling, exercise and other supportive modalities that foster trust and confidence rather than dependence and disability. 126 Early intervention for PPGP is essential to help pregnant people make sense of their pain experience, believe in the possibility of change and adopt positive lifestyle habits throughout their pregnancy for improved health and birth outcomes.

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REFERENCES

- 1 Clinton SC, Newell A, Downey PA, et al. Pelvic girdle pain in the antepartum population: physical therapy clinical practice guidelines linked to the international classification of functioning, disability, and health from the section on women's health and the orthopaedic section of the american physical therapy association.
 - J Womens Health Phys Therap 2017;41:102-25.
- 2 Simonds AH, Abraham K, Spitznagle T. Clinical practice guidelines for pelvic girdle pain in the postpartum population. *J Womens Health Phys Therap* 2022;46:E1–38.
- 3 Bergström C, Persson M, Nergård K-A, et al. Prevalence and predictors of persistent pelvic girdle pain 12 years postpartum. BMC Musculoskelet Disord 2017:18:399.
- 4 Bjelland EK, Stuge B, Engdahl B, et al. The effect of emotional distress on persistent pelvic girdle pain after delivery: a longitudinal population study. BJOG 2013;120:32–40.
- 5 Beales DJ, Gaynor O, Harris J, et al. Correlations between the active straight leg raise, sleep and somatosensory sensitivity during pregnancy with postpartum lumbopelvic pain: an initial exploration. Scand J Pain 2019;19:53–60.
- 6 Beales D, Slater H, Palsson T, et al. Understanding and managing pelvic girdle pain from a person-centred biopsychosocial perspective. Musculoskelet Sci Pract 2020;48:102152.
- 7 Meijer OG, Barbe MF, Prins MR, et al. The pelvic girdle pain deadlock: 2. topics that, so far, have remained out of focus. Musculoskelet Sci Pract 2020;48:102166.
- 8 O'Sullivan PB, Caneiro JP, O'Sullivan K, et al. Back to basics: 10 facts every person should know about back pain. Br J Sports Med 2020;54:698–9.
- 9 Donnelly GM, Moore IS, Brockwell E, et al. Reframing return-to-sport postpartum: the 6 RS framework. Br J Sports Med 2022;56:244–5.

We have complied a list of relevant references for each sub-category of the Stable, Safe and Self Manageable areas for PPGP management. This list is not meant to be exhaustive, but rather to help readers to access the information from which we drew our recommendations and to further their knowledge into the broader considerations for PPGP management.

Supplementary References for Infographic

STABLE	
Hormones	Hannibal KE, Bishop MD. Chronic stress, cortisol dysfunction, and pain: a psychoneuroendocrine rationale for stress management in pain rehabilitation. PhysTher. 2014 Dec;94(12):181625.doi: 10.2522/ptj.20130597. Epub2014 Jul
	17. PMID: 25035267; PMCID: PMC4263906.
	Mastorakos G, Ilias I. Maternal and fetal hypothalamic pituitary adrenal axes during pregnancy and postpartum. Ann N Y Acad Sci. 2003;997:13649.
	Palsson, T, Beales, D, Slater, H <i>et al.</i> (2014). Pregnancy Is Characterized by Widespread Deep-Tissue Hypersensitivity Independent of Lumbopelvic Pain Intensity, a Facilitated Response to Manual Orthopedic Tests, and Poorer Self-Reported Health. J Pain. 16. 10.1016/j.jpain.2014.12.002.
Joint Changes	Aldabe D, Ribeiro DC, Milosavljevic S, <i>et al.</i> Pregnancy related pelvic girdle pain and its relationship with relaxin levels during pregnancy: a systematic review. Eur Spine J. 2012 Sep;21(9):176976. doi: 10.1007/s005860122162x. Epub
	Clinton, S, Newell, A, Downey, P <i>et al.</i> 2017. Pelvic Girdle Pain in the Antepartum Population: Physical Therapy Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability, and Health From the Section on Women's Health and the Orthopaedic Section of the American Physical Therapy Association. J Women's Health PhysTherap, 41(2), pp.102-125.
	Morino S, Ishihara M, Umezaki F <i>et al.</i> Pelvic alignment changes during the perinatal period. PLoS One. 2019;14(10):e 0223776. Published 2019 Oct 10.doi:10.1371/journal.pone.0223776
Varied Movements	Beales D, Slater H, Palsson T, <i>et al.</i> Understanding and managing pelvic girdle pain from a person-centred biopsychosocial perspective. Musculoskelet Sci Pract. 2020 Aug;48:102152. doi: 10.1016/j.msksp.2020.102152. Epub 2020 May 6. PMID: 32560860.
	Röst CC, Jacqueline J, Kaiser A, <i>et al.</i> Prognosis of women with pelvic pain during pregnancy: a long-term follow-up study. Acta Obstet Gynecol Scand. 2006;85(7):771-7. doi: 10.1080/00016340600626982. PMID: 16817072.
SAFE	

Posture Adaptations	Clinton, S, Newell, A, Downey, P <i>et al.</i> 2017. Pelvic Girdle Pain in the Antepartum Population: Physical Therapy Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability, and Health From the Section on Women's Health and the Orthopaedic Section of the American
	Physical Therapy Association. J Women's Health PhysTherap, 41(2), pp.102-125.
Lactation	Bjelland EK, Owe KM, Stuge B, <i>et al.</i> Breastfeeding and pelvic girdle pain: a follow-up study of 10,603 women 18 months after delivery. BJOG. 2015 Dec;122(13):1765-71. doi: 10.1111/1471-0528.13118. Epub 2014 Oct 20. PMID: 25327939.
Vaginal Birth	Bjelland EK, Stuge B, Vangen S, <i>et al.</i> Mode of delivery and persistence of pelvic girdle syndrome 6 months postpartum. Am J Obstet Gynecol. 2013 Apr;208(4):298.e1-7. doi: 10.1016/j.ajog.2012.12.002. Epub 2012 Dec 5. PMID: 23220506.
	Dencker, A, Taft, C, Bergqvist, L et al. Childbirth experience questionnaire (CEQ): development and evaluation of a multidimensional instrument. BMC Pregnancy Childbirth 10, 81 (2010). https://doi.org/10.1186/1471-2393-10-81
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Lifestyle and Education

Beales DJ, Gaynor O, Harris J, *et al.* Correlations between the active straight leg raise, sleep and somatosensory sensitivity during pregnancy with post-partum lumbopelvic pain: an initial exploration. Scand J Pain. 2019 Jan 28;19(1):53-60. doi: 10.1515/sjpain-2018-0081. PMID: 30307900.

Beales D, Slater H, Palsson T, *et al.* Understanding and managing pelvic girdle pain from a person-centred biopsychosocial perspective. Musculoskelet Sci Pract. 2020 Aug;48:102152. doi: 10.1016/j.msksp.2020.102152. Epub 2020 May 6. PMID: 32560860.

Bjelland EK, Stuge B, Engdahl B, *et al.* The effect of emotional distress on persistent pelvic girdle pain after delivery: a longitudinal population study. BJOG. 2013 Jan;120(1):32-40. doi: 10.1111/1471-0528.12029. Epub 2012 Oct 26. PMID: 23107369.

Louw A, Diener I, Butler DS, *et al.* The effect of neuroscience education on pain, disability, anxiety, and stress in chronic musculoskeletal pain. Arch Phys Med Rehabil. 2011 Dec;

92(12):204156.doi:10.1016/j.apmr.2011.07.198. PMID: 22133255.

Meijer OG, Hu H, Wu WH, *et al.* The pelvic girdle pain deadlock: 1. Would 'deconstruction' help? Musculoskelet Sci Pract. 2020 Aug;48:102169. doi: 10.1016/j.msksp.2020.102169. Epub 2020 Apr 24. Erratum in: Musculoskelet Sci Pract. 2020 Aug 24;:102241. PMID: 32560871.

Meijer OG, Barbe MF, Prins MR, *et al.* The Pelvic Girdle Pain deadlock: 2. Topics that, so far, have remained out of focus. Musculoskelet Sci Pract. 2020

	Aug;48:102166. doi: 10.1016/j.msksp.2020.102166. Epub 2020 May 5. Erratum in: Musculoskelet Sci Pract. 2020 Aug 31;:102242. PMID: 32560869.
	Simonds AH, Abraham K, Spitznagle T. Clinical Practice Guidelines for Pelvic Girdle Pain in the Postpartum Population, Journal of Women's Health Physical Therapy: January/March 2022 - Volume 46 - Issue 1 - p E1-E3 DOI:10.1097/JWH.00000000000000236
Exercise	Davenport MH, Marchand AA, Mottola MF, <i>et al.</i> Exercise for the prevention and treatment of low back, pelvic girdle and lumbopelvic pain during pregnancy: a systematic review and meta-analysis. Br J Sports Med. 2019 Jan;53(2):90-98. doi: 10.1136/bjsports-2018-099400. Epub 2018 Oct 18. PMID: 30337344.
	van Benten, E, Pool, J, Mens, J <i>et al.</i> Recommendations for Physical Therapists on the Treatment of Lumbopelvic Pain During Pregnancy: A Systematic Review. J Orthop Sports Phys Ther. 2014 44:7, 464-A15.
External Supports	Simonds AH, Abraham K, Spitznagle T. Clinical Practice Guidelines for Pelvic Girdle Pain in the Postpartum Population, Journal of Women's Health Physical Therapy: January/March 2022 - Volume 46 - Issue 1 - p E1-E3 DOI:10.1097/JWH.00000000000000236
	Clinton, S, Newell, A, Downey, P <i>et al.</i> 2017. Pelvic Girdle Pain in the Antepartum Population: Physical Therapy Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability, and Health From the Section on Women's Health and the Orthopaedic Section of the American Physical Therapy Association. J Women's Health PhysTherap, 41(2), pp.102-125.