

Understanding the Sacro-iliac Joint



A Modern Guide to SIJ Pain

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A lot has changed with regard to our understanding of pain and other symptoms felt in the sacro-iliac joint (SIJ).

This book will give you information to help people who suffer with ongoing or recurring pain in this area.

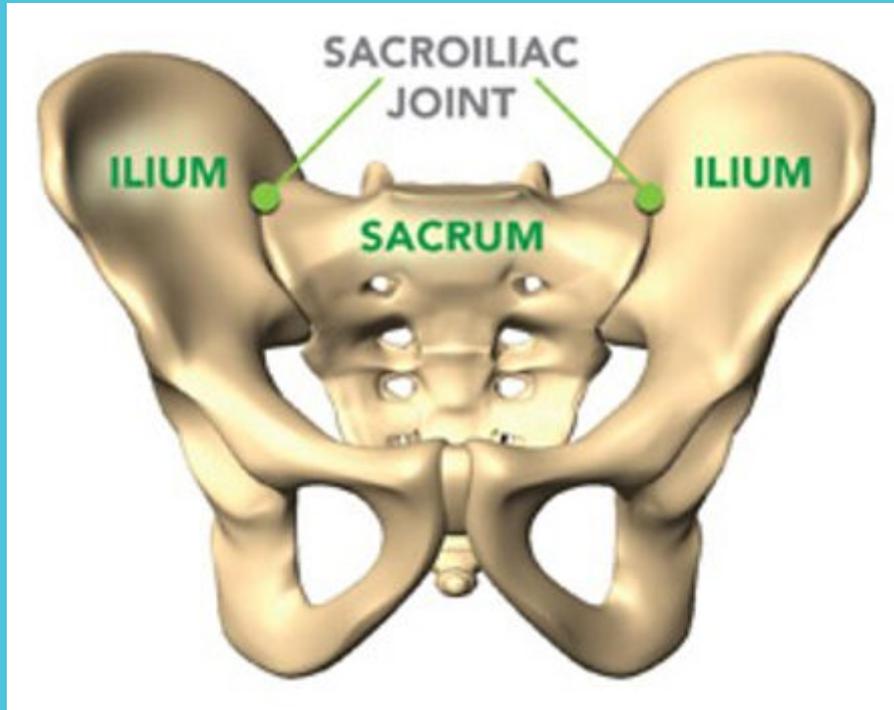
The aim of the book is to allow people to better understand their symptoms and avoid the common pitfalls and help foster a real recovery and return to the things they love doing.

Using research, this book will demonstrate why we should be looking differently at this joint and discuss how best to help people with SIJ pain.

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Looking More Widely For Solutions

Anatomy, Movement and Function



The sacro-iliac joint or SIJ is the joint between your pelvis bones and the wedge shaped bone (sacrum) at the base of your spine. We have two SIJ's, one on each side of the sacrum.

The sacro-iliac joint is there to transfer our body weight from the legs through to the trunk and vice versa.

It is exceptionally strong and very well designed to bear weight and has a huge amount of support from strong ligaments and the muscles around the area to assist with its high level of stability.

Anatomy, Movement and Function

It has a very small amount of movement to allow for changes in body position but always maintaining a strong position to transmit force.

Various studies have measured the actual movement within the joint, with the range of average movement from 0.5 degrees to 2.5 degrees of rotation and zero-0.7mm of slide.



Multiple studies have shown there is a miniscule amount of joint movement in the normal SIJ.

References

Sturesson et al 1989, Spine [01 Feb 1989, 14(2):162-165]g

Kibsgard et al 2014, Clin Biomech Volume 29, Issue 4, April 2014, Pages 406-411

Kibsgard et al 2017 Clin Biomech Volume 47, August 2017, Pages 40-45

So there is not much movement in the SIJ...

Does this change when we have pain?

The short answer is no, it doesn't.

The same study that measured joint movement also tested symptomatic joints against non-symptomatic joints and found no difference in the movement.

Sturesson et al 1989, Spine [01 Feb 1989, 14(2):162-165]g

So we can be pretty sure that sacro-iliac joint pain is not entirely caused by a change in joint movement.

Key Points

The SIJ is very strong

There is only a tiny amount of movement in the SIJ as demonstrated by numerous studies

Changes in amount of movement were not detected in symptomatic joints when compared to non symptomatic joints

Why do we get pain in the SIJ?

Very rarely SIJ and pelvis pain can be caused by serious pathology such as infection or cancer and there are conditions known to affect joints like the SIJ.

Your health professional should screen you for signs of these conditions but they are very rare and the vast majority of SIJ pain is much less serious in nature in spite of the severity of the symptoms.

Blocked/Locked

We used to think that SIJ pain came from:

- 1) a restriction of movement in the joint perhaps explained to patients as a blocked/locked joint or
- 2) from too much movement in the joint usually explained in terms of the joint being out, twisted, subluxed etc.

Out/Twisted/
Subluxed

If healthy joints and painful joints demonstrate very little or no movement, these diagnoses are unlikely.



A joint with so little movement and a main role being stiffness and strength is not likely to suffer from a loss of movement.

In addition to this, there is nothing in the area that could physically block the small amount of movement the joint has.

The question of excess movement something that has also been studied.

In pregnancy the ligaments do become more lax and so it has been theorised that SIJ pain could be caused by this mechanism.

A research paper that looked at pregnancy related pelvic pain, of which SIJ pain is a part, found that increased SIJ ligament laxity is not associated with pain as similar laxity was found in severely symptomatic individuals, mildly or non-symptomatic individuals.

So ligament laxity and increased movement does not always result in pain even when it is present.

Damen et al 2001 Acta Obstet Gynecol Scand. Nov;80(11):1019-24.

It is possible that extreme trauma could cause excess movement in the SIJ but it would take something like a high speed traffic accident or a fall from height for the SIJ to be affected in this way, such is its strength.

Can we reliably diagnose and treat SIJ joint position in the clinic?

The individual tests we use to try to diagnose SIJ pain and movement problems have repeatedly been shown not to be accurate and reliable enough to be of real clinical use.

Riddle et al, *Physical Therapy*, Volume 82, Issue 8, 1 August 2002, Pages 772–78
Robinson et al, *Manual Therapy* Volume 12, Issue 1, February 2007, Pages 72–79
Potter et al, *Physical Therapy*, Volume 65, Issue 11, 1 November 1985, Pages 1671–1675

This means that we must use at least 2 or 3 tests to approach a reliable diagnosis of SIJ pain.

Laslett et al, *Manual Therapy* Volume 10, Issue 3, August 2005, Pages 207–218

These tests only help us conclude that the SIJ is painful and not reliably diagnose movement problems.

In addition to this, numerous studies have shown poor agreement between the findings of different assessors on the same patients. Here is just two..

Freburger et al, *Physical Therapy*, Volume 79, Issue 12, 1 December 1999, Pages 1134–1141,
van Kessel Cobelens et al, *Journal of Manipulative and Physiological Therapeutics*
Volume 31, Issue 2, February 2008, Pages 130–136

Can we reliably diagnose and treat SIJ joint position in the clinic?

This means that two different clinicians could come to very different conclusions with regard to the side and type of problem in the SIJ after assessing the same patient and so embark on two completely different treatment protocols.

This is clearly a huge problem for both patients and clinicians seeking to help people with SIJ pain.

Treatment of movement problems in the SIJ has typically consisted of manual manipulation or mobilisation of the joint either to 'free' the joint or to realign it.

These techniques have been shown to be ineffective at changing the SIJ position when measured before and after the application.

Tullberg et al, Spine: May 15, 1998 - Volume 23 - Issue 10 - p 1124-1128

Key Points

We need 2-3 tests to conclude the SIJ is painful

There is no way to accurately test joint position in clinic

We cannot influence joint position with manual therapy

Summary

- The Sacroiliac Joint is incredibly strong.
- There is very little movement in the Sacro-iliac Joint.
- There is no change in the amount of movement in symptomatic and non-symptomatic SI joints.
- No one has yet documented a reliable means of assessing joint movement in the SIJ in a clinic setting.
- Using a combination of tests can be useful in diagnosing SIJ pain only.
- The SIJ has so little movement that a 'blocked' or 'locked' SIJ is not a diagnosis that can be backed by modern scientific research as yet.
- The SIJ is so strong and has so much bony and soft tissue support that a diagnosis of the SIJ being 'out' or 'twisted' cannot yet be supported by modern scientific research.
- Manual treatment of the SIJ does not result in change in the joint position. We cannot 'release it' or 'push it back in' even if the above diagnoses were possible.

So enough of the old and on to the new

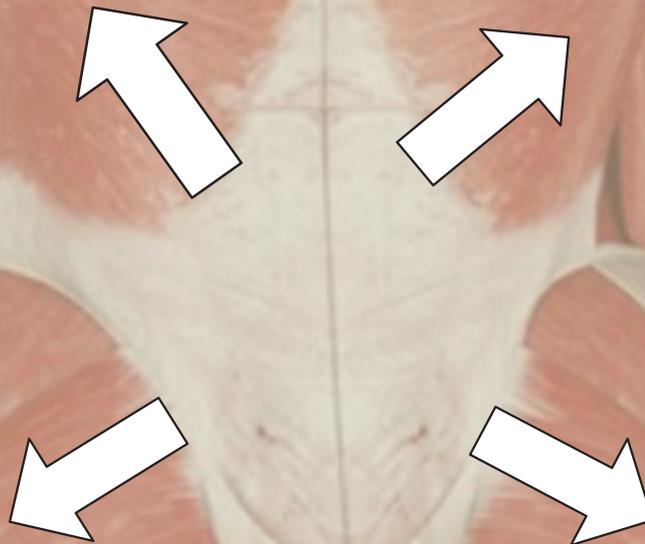
A joint this strong needs a lot of tissue around it to create this strength. All of this tissue, like most in the body, has nerve endings to give us information on what is happening in the body as we go about our lives. More tissue means more nerve endings.

This tissue will have connections to strong connective tissue that reaches up into the trunk, across the hips and down into the upper thigh.

Anatomy, Bony Pelvis and Lower Limb,
Pelvic Fascia

Marco A. Siccardi; Cristina Valle. 2019

This serves to spread the load of the high forces the area will be subjected to, helping the joint to fulfil its function.



All these nerve endings and the pull of muscles from the trunk and lower limb could give an individual pain in the SIJ area but the key difference is that this more of an irritation of the soft tissues and nervous system rather than because the joint is restricted or too mobile.

Lots of other factors have an impact on the symptoms such as physical, psychological, social, lifestyle and hormonal factors in addition to what is happening at tissue level.

It doesn't make the symptoms any less painful and unpleasant for the person but it is important for both the patient and the clinician to understand the factors that can cause SIJ pain to get the treatment right and bring about a meaningful improvement in symptoms in the long term.

Key Points

Pain is more likely to be as a result of soft tissue and nerve irritation in combination with other factors.

It is not a blocked or misaligned sacro-iliac joint

Other causes of SIJ Pain

SIJ pain is quite common in pregnancy with around 12% of women reporting single or both sided SIJ pain as part of the 20% that experience pelvic girdle pain .

Hanne et al, Spine: December 15, 2002 - Volume 27 - Issue 24 - p 2831-2834

There are also some specific conditions that can cause SIJ pain. Your health professional should screen for these signs, but they are much less common.

SIJ pain can also be caused by significant trauma such as a road traffic accident or fall from height.

All other SIJ pain is much more likely to be caused by irritation of the surrounding soft tissues or pain originating in areas surrounding the SIJ such as the lower back.

These tissues can respond really well to rehabilitation designed to increase what and how much they can do.

You Are More Than Just a Joint

Knowing that structurally the joint is strong and secure gives us a lot of hope for recovery and gives us a great platform to begin the rehabilitation of the painful SIJ.

Understanding the history of the symptoms and all of the different influences on them can help to regain control of your pain and activities. This may be other body areas, sleep, activity, previous injury and treatment, general health etc

Creating a plan with your health professional to address some or all of these can be really important.

A well designed, individualised and appropriately progressed movement rehab program will help you feel more comfortable doing movements and activities that you previous found difficult. Some modification of your activities can help reduce your symptoms.

Having goals for your rehab can be really helpful as it can take some time and perseverance to get where you want to be. This is especially true if the symptoms have been present for some time.

There may be more specific techniques that your health professional discusses with you for your individual situation.