

The Useful Conclusion in our Experience Regarding the Sacral Injection

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Abstract

Caudal injection is a type of epidural injection that is administered to the lower back to reduce pain and inflammation. The injection contains a steroid medication that is injected into the lower part of the epidural space, which surrounds the nerve roots in the lower back. The procedure is usually performed on an outpatient basis, and most patients experience relief from back pain within a few days.

The sacral injection is another name for a caudal epidural injection. It is a type of spinal epidural injection that is administered to the sacral hiatus, which is the opening at the base of the spine near the tailbone. The injection is used to treat nerve pain and inflammation caused by conditions such as spinal canal stenosis, herniated disks, degenerative disk disease, sciatica, or radiculopathy.

Introduction

sacral injection involves injecting a steroid medication into the epidural space (Figure 1), which is the area around the spinal nerves. A caudal injection can help treat various conditions that cause nerve pain, such as herniated discs, spinal stenosis, sciatica, and post-surgery syndrome.

*How effective is a sacral injection in treating lower back pain?*¹⁻²⁻⁴

Sacral injections, also known as caudal epidural injections (Figure 2-3), can be an effective treatment option for some individuals with lower back pain. These injections involve injecting numbing medicine and a steroid into the epidural space near the tailbone to alleviate nerve pain and inflammation. While the effectiveness of sacral injections varies among patients, they are generally considered safe with minimal risks of complications.

Possible side effects of sacral injections include bleeding, infection, and spinal headache if there is an accidental puncture of the dura. Additionally, patients may experience temporary side effects from the steroid used, such as flushing, elevated blood sugar, headache, muscle cramps, increased appetite, mood swings, and difficulty sleeping.

Pain relief after a sacral injection can vary. While some individuals may experience long-term relief after one injection, others may require multiple injections for adequate pain management. It is important to follow the physician's instructions regarding medication and eating habits to optimize the benefits of the



Figure 1. posterior view of the injection in the hiatus.

procedure. If lower back pain persists after a sacral injection, alternative treatment options should be discussed with a healthcare provider.

While the passage does not explicitly discuss the effectiveness of sacral injections in treating lower back pain, further research, and clinical studies are necessary to determine their efficacy. However, sacral injections have been used to treat various conditions associated with lumbosacral pain.

In summary, sacral injections can be an effective treatment option for some individuals with lower back pain. The effectiveness varies among patients, and it may require multiple injections for optimal pain management.

*How long does it take for a sacral injection to take effect?*¹⁻³

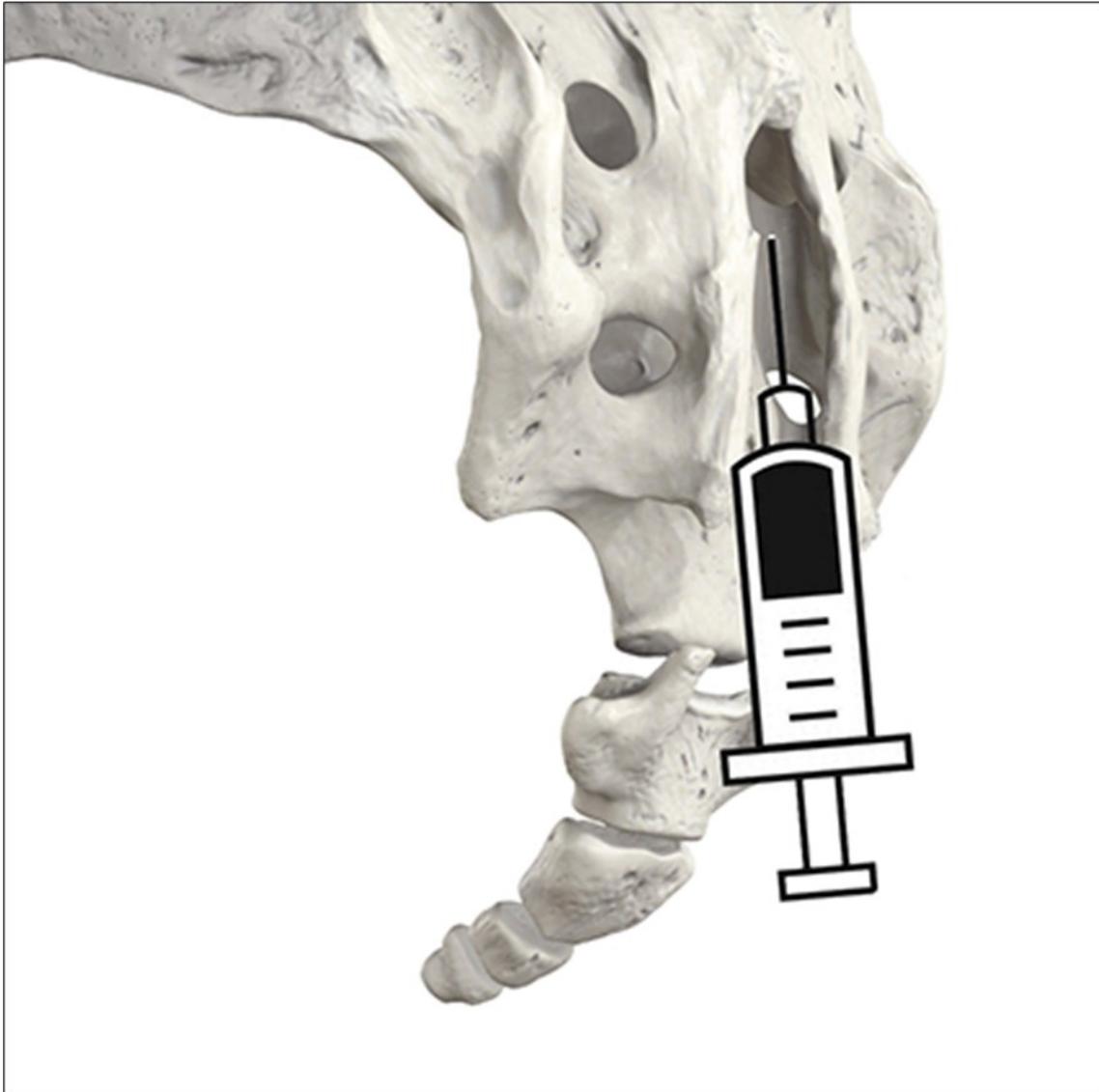


Figure 2. oblique view of the injection in the hiatus.

The time it takes for a sacral injection, also known as a caudal injection, to take effect can vary. The entire procedure typically takes 15 to 30 minutes to complete. After the injection, it is important to avoid strenuous activity and driving for the first 24 hours, and some soreness near the injection site may be experienced.

Relief from back pain after a sacral injection is often experienced within two to three days. However, it's worth noting that the time for the injection to take effect can differ for each individual. It may take up to 10 days for some individuals to notice a difference in their pain levels. If there is no improvement after two weeks, it is recommended to consult with a healthcare provider for further evaluation.

Some individuals may find permanent pain relief from a sacral injection, while others may require periodic injections as part of their pain management plan. If necessary, additional injections can be ordered two to four weeks apart.

To summarize, the time required for a sacral injection to take effect can vary from a few days to up to 10 days. It is important to follow post-injection instructions and consult a healthcare provider if there is no improvement after two weeks. Each individual's response to the injection may differ, and



Figure 3. sagittal C.T. scan view of the injection in the hiatus.

additional injections or alternative treatments can be considered based on their specific needs and circumstances.

*What types of medications are typically used in a sacral injection?*²⁻³⁻⁴

In sacral injections, the choice of medication depends on the purpose of the injection and the patient's condition. Steroids are commonly used to reduce inflammation and alleviate pain in the lower back and leg area. Other medications frequently employed include:

1. Local anesthetics: These are used to provide pain relief and anesthesia during medical procedures, such as caudal epidural block (CEB) or childbirth.
2. Corticosteroids: Similar to steroids, corticosteroids are used to reduce inflammation and relieve pain in the lower back and leg area.
3. Analgesics: These medications are specifically designed to relieve pain without causing loss of consciousness.

It's important to note that healthcare professionals determine the specific medications and dosages based on individual patient needs and medical guidelines. The choice of medication may vary depending on factors like the underlying condition being treated and the desired therapeutic outcome.

This information builds upon previous topics discussed, such as the potential risks associated with sacral injections, their effectiveness in treating lower back pain, and how long it takes for them to take effect. Understanding the medications used in sacral injections helps provide a comprehensive understanding of this treatment approach.

The current query about the types of medications used in sacral injections is directly related to the broader context of the article, which focuses on sacral injections as a method for pain relief. By discussing the medications commonly utilized, we enhance our understanding of how sacral injections work and their potential benefits.

Transition: Having explored the types of medications used in sacral injections, it is important to consider whether there are any long-term side effects associated with this treatment approach.

*What are the benefits of obtaining a sacral injection?*²⁻³

Sacral injections, such as caudal epidural injections or sacroplasty, offer several benefits for individuals with back problems or conditions related to the sacrum and pelvic ring. These injections provide a safe and non-surgical treatment option with minimal risks of complications. The specific advantages of sacral injections include:

1. **Pain relief:** Sacral injections effectively alleviate pain caused by fractures, insufficiency fractures, instability of the sacrum, or sacroiliac joint dysfunction. They stabilize fractures, reduce pain, and improve clinical outcomes.
2. **Minimally invasive:** Sacral injections are minimally invasive procedures with lower risks of complications compared to open surgery. They lead to quicker recovery times and reduced hospital stays.
3. **Improved mobility:** By stabilizing fractures and addressing instability, sacral injections improve mobility and function for individuals with pelvic ring injuries or sacroiliac joint dysfunction. This enhances their ability to perform daily activities and regain quality of life.
4. **Quick procedure:** Sacral injections are typically performed under local anesthesia or light sedation, making them relatively quick procedures. Patients can return home on the same day.
5. **High success rates:** Studies have demonstrated that sacral injections have high success rates in reducing pain, stabilizing fractures, and improving clinical outcomes. They are considered effective treatment options for certain types of sacral fractures or sacroiliac joint dysfunction.

It's important to note that individual experiences may vary in terms of pain relief and the number of injections required for long-term relief. Following post-procedure instructions regarding medication and dietary habits is crucial. Any concerns or a fever over 38c within 72 hours of the injection should be reported to the doctor.

In summary, sacral injections provide pain relief, improve mobility, and stabilize fractures in individuals with back problems or conditions related to the sacrum and pelvic ring. They offer a safe and minimally invasive alternative to surgery, with high success rates in reducing pain and improving clinical outcomes.

*Are there any long-term side effects associated with sacral injections?*²⁻³⁻⁵

While the passages do not explicitly mention long-term side effects associated with sacral injections, it is important to note that the steroids used in these injections can have a long-term effect by reducing swelling and irritation. However, it is crucial to have a thorough discussion with your healthcare

provider regarding any potential risks or concerns. The risks and side effects mentioned about caudal epidural injections may not directly apply to sacral injections. Therefore, it is advisable to consult with your pain doctor for a comprehensive understanding of the procedure's risks and benefits.

*What are the potential risks associated with sacral injection?*²⁻³

The potential risks associated with sacral injection include:

1. Fractures of the pelvic ring: Sacral insufficiency fractures can occur due to factors like bone insufficiency or the postpartum period, leading to low-back and buttock pain.
2. Delayed diagnosis: Sacral insufficiency fractures are often overlooked as a cause of lumbosacral pain, resulting in prolonged discomfort and delayed treatment.
3. Groin pain: Sacral insufficiency fractures can cause groin pain, which should not be ignored as it may indicate this condition.
4. Neurological injuries: Depending on the pattern and severity of the fracture, sacral fractures can potentially lead to neurological injuries.
5. Ambulation debate: There is ongoing debate about whether patients with sacral insufficiency fractures should be allowed to ambulate or not, depending on individual patient factors and fracture stability.
6. Iatrogenic injury to adjacent neurovascular structures: Misplacement of trans-iliosacral screw fixation can occur, especially in patients with sacral dysplasia, violating the sacral bony cortex.
7. Screw malpositioning and loosening: Implants placed in the sacrum can experience screw malpositioning, loosening in osteoporotic bone, or backing out of screws.
8. Development of contralateral sacral fracture and non-union: There is a risk of contralateral sacral fracture development and non-union after sacral injection.
9. Limited safe corridors for implant placement: The highly variable anatomy of the upper sacrum can pose challenges for implant placement.

*What can a sacral injection treat?*²⁻³⁻⁴

A sacral injection can treat several conditions related to the sacroiliac joint and sacrum. These conditions include sacroiliac joint dysfunction, sacroiliitis, and fragility fractures of the sacrum. Sacroiliac joint dysfunction refers to pain or dysfunction in the sacroiliac joint, while sacroiliitis involves inflammation of the joint and surrounding tissues. Fragility fractures of the sacrum are fractures that occur in the bone at the base of the spine.

Various techniques may be used during sacral injections, such as fluoroscopic guidance or the double needle technique to ensure accurate placement. Surgical options may be considered for displaced fractures. The injections target non-traumatic sacroiliac joint pain by injecting steroids into the joint, carrying minimal risks of complications.

After receiving a sacral injection, patients may experience side effects from the administered steroid medication, which typically resolve within 2-3 days but can last up to 2 weeks. The duration of pain relief varies for each patient, and additional injections may be recommended if necessary. It is generally safe for patients to resume their regular eating habits and medications immediately after the procedure.

Aside from treating specific conditions, sacral injections can also be used for analgesia and anesthesia

during surgical procedures. The success of this approach depends on anatomical variations in the sacral hiatus. Factors such as closure or openness of the hiatus and variations in size, shape, and orientation can impact the reliability and effectiveness of the procedure.

In summary, a sacral injection is a versatile medical intervention that can effectively treat conditions related to the sacroiliac joint and sacrum. By understanding their potential applications, individuals can discuss these treatment options with their healthcare providers to determine the most appropriate approach based on their condition and individual circumstances.

How long do sacral injections last? ¹⁻²

Sacral injections, or caudal injections, are used to relieve back pain. The duration of pain relief from these injections varies among individuals. Some key points to consider regarding the duration of sacral injections are:

1. Relief duration: The exact duration of pain relief from sacral injections is not specified in the sources. However, according to Source 3, many individuals experience relief within two to three days after the injection. The relief may last a few days for some people, while others may experience relief for up to 10 days.
2. Individual variability: The effectiveness and duration of pain relief can differ from person to person. Source 4 and Source 5 emphasize that some individuals may find long-term relief after just one injection, while others may require additional injections or alternative treatment options.
3. Consultation with a healthcare provider: If back pain persists and hasn't improved after two weeks, it is advisable to consult with a healthcare provider for alternative treatment options or further evaluation.
4. Procedural details: Sacral injections typically take less than 30 minutes and are performed on an outpatient basis, allowing patients to return home on the same day. After the injection, it is recommended to avoid strenuous activity and not drive for the first 24 hours to ensure a safe recovery process.

In summary, sacral injections can provide relief from back pain for varying durations. While some individuals may experience short-term relief, others may find long-term benefits with one injection. The duration of pain relief is unique to each individual.

What are the side effects of a sacral injection? ²⁻³

Based on the information provided in the passage, there is no specific information about the side effects of a sacral injection. However, it is important to note that sacral injections may have their own set of potential side effects and it is important to obtain accurate information about the side effects of a sacral injection.

Are sacral injections painful? ¹⁻²⁻⁵⁻⁶

Sacral injections, including caudal epidural steroid injections and caudal nerve blocks, can be associated with some discomfort during the injection process. However, the level of pain experienced can vary from person to person. These injections are administered to alleviate chronic lower back pain and leg pain. The procedure is quick and minimally invasive, with a short downtime of around 24 hours.

Most individuals experience pain relief within a few days of the sacral injection, and some even achieve complete relief from a single injection.

Temporary side effects and discomfort may occur after the sacral injection. These can include pain at

the injection site for one to two days, temporary worsening of pre-existing pain, potential effects on menstrual periods in women for one to two cycles, and fluid retention due to the injected steroid.

*When should the patient consider receiving a sacral injection?*²⁻³

Sacral injections can be beneficial for individuals experiencing non-traumatic sacroiliac joint (SIJ) pain, particularly those with sacral dysplasia. Some scenarios where sacral injections may be beneficial include stabilization of the sacroiliac joint, sacroiliac joint pain after lumbar fusion, and diagnostic and therapeutic intra-articular sacroiliac joint injections.

For patients with fragility fractures of the sacrum (FFS), surgical treatment options may be considered based on the fracture personality and comorbidities. It is crucial to note that there may be some side effects associated with sacral injections, such as bleeding, infection, and spinal headache. However, these occurrences are relatively rare. Common side effects after the procedure include flushing, elevated blood sugar levels, headache, muscle cramps, increased appetite, mood swings, and difficulty sleeping. These side effects typically resolve within 2-3 days but can last up to 2 weeks.

The duration of pain relief varies for each patient, and additional injections may be recommended as necessary. Factors such as fractures of the pelvic ring, sacral insufficiency fractures following multilevel spinal arthrodesis, and pubic and sacral insufficiency fractures should be considered when evaluating the need for a sacral injection. Imaging techniques like MRI and CT scans can aid in the detection and treatment of these fractures.

*How often should the patient receive a sacral injection?*¹⁻²

The frequency of receiving sacral injections varies based on individual needs, symptoms, and response to treatment. While some individuals may experience significant pain relief after a single injection, others may require multiple injections. Typically, up to three injections may be ordered, with a time interval of two to four weeks between each injection. Additional injections are scheduled based on the patient's response and improvement in symptoms. Periodic steroid injections a few times a year may be necessary for long-term pain relief. However, each person's pain management plan may differ, and consultation with a healthcare provider is essential in determining the appropriate frequency of sacral injections.

*Who is an ideal candidate for a sacral injection?*²⁻³

An ideal candidate for a sacral injection includes individuals with sacroiliac joint pain following lumbar or lumbosacral fusion, as well as those suffering from fragility fractures of the sacrum. Factors such as medical history, symptoms, response to conservative treatments, and diagnostic imaging results are considered when determining candidacy for this procedure. Surgical interventions may be required for certain cases, such as minimal invasive sacroiliac screws, trans-sacral bar osteosynthesis, open reduction, internal fixation, or spinopelvic stabilization.

The procedure of sacral injection is relatively safe and non-surgical with minimal risks of complications. However, there are potential side effects to be aware of, including bleeding, infection, and spinal headache if the protective dura layer surrounding the spinal cord is punctured during the injection, and side effects from steroids used in the procedure.

The effectiveness of pain relief after a sacral injection can vary among patients. Some individuals experience immediate relief following the injection, while others may require additional injections for optimal results. It is important to follow your physician's recommendations and consult them if you experience a fever over 38c degrees Celsius within 72 hours of the procedure.

Can a sacral injection cause permanent damage? ²

1. While the available sources do not provide direct information on whether a sacral injection can cause permanent damage, related topics offer insights into potential risks and implications.
2. Source 4 mentions possible side effects of caudal epidural injections, such as bleeding, infection, and spinal headache if the dura is punctured. While permanent damage is not explicitly mentioned, it highlights the importance of discussing risks with your doctor.
3. Source 5 discusses surgical techniques for sacroiliac joint (SIJ) pain and mentions the potential for iatrogenic injury to adjacent neurovascular structures during trans-iliosacral fixation. This risk is higher in patients with sacral dysplasia, but permanent damage from sacral injections is not directly addressed.
4. Source 5 also highlights technical challenges and risks associated with trans-articular fixation in non-traumatic SIJ pain cases, but it does not mention permanent damage resulting from sacral injections.
5. It is crucial to consult with your healthcare provider to obtain more specific information about potential long-term effects based on your case.
6. Discussing risks and benefits with your doctor before undergoing any procedure is essential to make informed decisions about your healthcare.
7. While no specific evidence suggests that a sacral injection causes permanent damage, it is important to consider individual cases and seek professional advice to address any concerns.

How soon after receiving a sacral injection can I resume normal activities? ¹⁻²⁻⁵

Resuming normal activities after receiving a sacral injection can vary based on different sources. One source recommends refraining from driving, operating machinery, or consuming alcohol for 24 hours after the injection. It also mentions potential temporary worsening of pain, changes in menstrual periods for women, fluid retention, headaches (rare), facial flushing, and variable effects of the injection. Another source suggests resuming normal activities 24 hours after the injection but advises against strenuous activity and driving during the first day. Some soreness near the injection site is normal, and back pain relief may be experienced within two to three days.

Conclusion

In conclusion, caudal injection or sacral injection is a type of epidural injection that is administered to the lower back to reduce pain and inflammation. The injection contains a steroid medication that is injected into the lower part of the epidural space, which surrounds the nerve roots in the lower back. The procedure is usually performed on an outpatient basis, and most patients experience relief from back pain within a few days.

Results

In our practice for ten years and more than 300 caudal injection procedures, as clinical assessment:

18% (54 patients) got no reduction in clinical symptoms

57% (171 patients) got a full reduction in clinical symptoms after five days, and 44 patients asked to repeat the procedure in a period of 6 to 24 months after the first shot

Just one patient just got nystagmus for about 4 minutes after the shot

No further complications occurred in our patients.

References

1. Caudal Injection: Steroid Injection, Epidural Injection & Back Pain Relief. Cleveland Clinic. Accessed 2023 Oct 13. <https://my.clevelandclinic.org/health/treatments/16852-caudal-injection>
2. Park SA, Kwak DS, Cho HJ. Technical variation of trans-articular sacroiliac joint (SIJ) fusion using three screws considering the effects of sacral dysplasia in patients with non-traumatic SIJ pain. *BMC Musculoskeletal Disorders*. 2019 Aug 28;20(1):386. Doi: 10.1186/s12891-019-2771-1.; PMID: PMC6712884
3. Wagner D, Ossendorf C, Gruszka D, Hofmann A, Rommens PM. Fragility fractures of the sacrum: how to identify and when to treat surgically? *Eur J Trauma Emerg Surg*; 2015 Aug; 41(4) 349-62. doi:10.1007/s00068-015-0530-z; PMID: PMC4523697
4. Abera Z, Girma A, Bekele A, Oumer M. Assessment of Morphological and Morphometrical Variations of Sacral Hiatus in Dry Human Sacrum in Ethiopia. *Local Reg Anesth*; 2021; 14 25-32. doi:10.2147/LRA.S277556; PMID: PMC7917331
5. Caudal Epidural Injection. Accessed 2023 Oct 13. <https://www.thewaltoncentre.nhs.uk/patient-leaflets/caudal-epidural-injection/429178>
6. Caudal Epidural Steroid Injection & Nerve Block in Washington DC, Baltimore, Maryland, Virginia. No Source was found. Published Date not found. Accessed 2023 Oct 13. <https://www.medstarhealth.org/services/caudal-epidural-and-caudal-nerve-block>