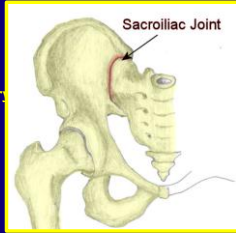




# Background

• SI Joint primary source of backpain < 1940's.

- ▣ Mixer & Barr article regarding nucleus pulposus in 1934.
- ▣ Past 15 years, mounting evidence via CT & MRI of destructive, inflammatory & degenerative pathology suggest reconsideration SI joint as source of low back pain.




---

---

---

---

---

---

---

---

# Low Back Pain

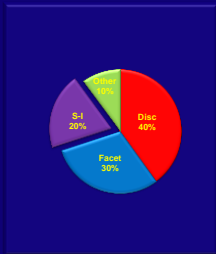
▣ 22.5% presenting with LBP

➢ One of largest studies by Bernard and Kirkland-Willis found a 22.5% prevalence rate in 1293 adult patients presenting with LBP.

▣ 30% presenting with LBP

➢ Schwarzer et al. 43 consecutive patients with chronic LBP below 5-1 (SI injections) 30% prevalence.

▣ Ha reported 75% incidence of SI joint degeneration at 5 years post-lumbar fusion surgery.




---

---

---

---

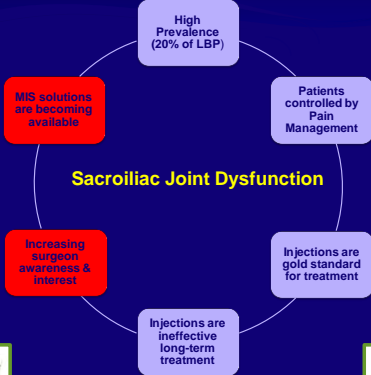
---

---

---

---

## Sacroiliac Joint Dysfunction




---

---

---

---

---

---

---

---

## Causes of SI Joint Pain

Causes can be split into 4 categories:

Musculoskeletal	Inflammatory	Malignancy	Medical
<ul style="list-style-type: none"> <li>◆ Ankylosing Spondylitis</li> <li>◆ Herniated Nucleus Pulposus</li> <li>◆ Muscle Strain</li> <li>◆ Trauma or Injury (Fall onto the buttocks. A blow to the side of pelvis)</li> <li>◆ Leg Length Discrepancy</li> <li>◆ Poor trunk &amp; abdominal control</li> <li>◆ Structural pelvic asymmetry</li> <li>◆ Scoliosis</li> <li>◆ Altered gait pattern</li> <li>◆ Poor postural awareness</li> </ul>	<ul style="list-style-type: none"> <li>◆ Inflammatory bowel disease</li> <li>◆ Pyogenic sacroiliitis</li> <li>◆ Sickle cell anemia</li> <li>◆ Diffuse idiopathic skeletal hyperostosis</li> <li>◆ Reiter's syndrome</li> <li>◆ Eosinophilic granuloma</li> <li>◆ Osteochondroma</li> <li>◆ Psoriatic Spondylitis</li> <li>◆ Genetic Disorders</li> <li>◆ Retroperitoneal fibrosis</li> </ul>	<ul style="list-style-type: none"> <li>◆ Lymphoma</li> <li>◆ Ovarian cancer</li> <li>◆ Intraspinal neoplasms</li> <li>◆ Metastases</li> <li>◆ Carcinoma of colon</li> <li>◆ Carcinoma of prostate</li> <li>◆ Polymyalgia rheumatic</li> <li>◆ Multiple myeloma</li> </ul>	<ul style="list-style-type: none"> <li>◆ Primary disease</li> <li>◆ Fibromyalgia</li> <li>◆ Osteoporosis</li> <li>◆ Weight gain especially around the area of trunk</li> <li>◆ Abdominal aneurysm</li> <li>◆ Ligamentous laxity (Pregnancy)</li> <li>◆ Polioarthritis</li> </ul>




---

---

---

---

---

---

---

---

---

---

---

---

## Symptoms of SI Joint Injury

- ☒ Paracentral low back pain, groin pain and/or buttock pain
- ☒ Often misdiagnosed as sciatica
- ☒ Classic symptoms are difficulty turning over in bed, struggling to put on shoes and socks and pain getting your legs in and out of the car.
- ☒ There may be tenderness on palpating the ligaments which surround joint .




---

---

---

---

---

---

---

---

---

---

---

---

## Diagnosis & Presentation

- One of most challenging aspects of treating SI pain is the complexity of diagnosis.
  - ☒ Polly & Sembrano published a frequency of 14-40% of their clinic population presented with SI pain.
- Some common diagnostic exams are:
  1. Fortin Finger Test
  2. Baer's Point Tenderness
  3. Yo-Yo Sign
  4. Gaenslen's Test
  5. Fabere Test
  6. Diagnostic SIJ Injections
  7. Imaging Studies




---

---

---

---

---

---

---

---

---

---

---

---

# Non-operative Measures

- **Should patient present positive symptoms, surgeons may refer patient to pain management specialists.**
- **Treatment by following methods effective but temporary.**

- Treatment options may include:
- Anti-inflammatory meds
  - Sacral belt
  - 6-12 weeks of PT
  - SI Joint Injections
- Alternative Treatments Options:
- Prolotherapy
  - Neuroaugmentation
  - Viscosupplementation
  - Radiofrequency Ablation
  - Accupuncture




---

---

---

---

---

---

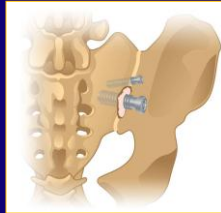
---

---

# Surgical Candidates

Patients maybe candidates for SI fusion if they met the following criteria:

- ❑ **Failed combination of previous treatments**
- ❑ **Exhibit chronic pain > 6mos**
- ❑ **Disabled from ADL**
- ❑ **Mentally capable of goal direction and reasonable expectations post surgery**




---

---

---

---

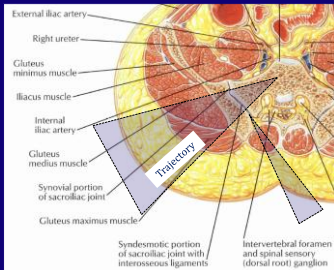
---

---

---

---

# Anatomic Corridor




---

---

---

---

---

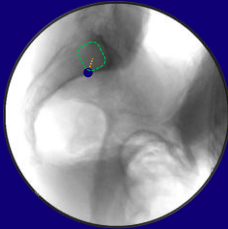
---

---

---

## Lateral View

- Use the Lateral View to locate the access starting point
  - ▣ Overlapping projection of right and left joints in the sagittal plane
  - ▣ Shows critical boundaries of the safe zone such as the anterior sacral cortex, the alar slope, the sacral foramina, and the spinal canal.
- Move to the Inlet View for anterior-posterior trajectory confirmation



---

---

---

---

---

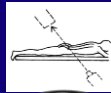
---

---

---

## Inlet View

- Use the Inlet View to confirm trajectory
  - ▣ Axial projection of the sacrum
  - ▣ Confirms safe zone trajectory relative to the spinal canal and anterior sacral cortex
- Move to the Outlet View for caudal-cephalad trajectory confirmation and joint preparation



---

---

---

---

---

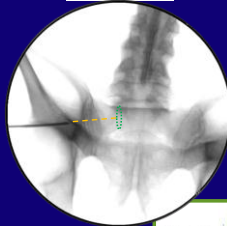
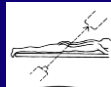
---

---

---

## Outlet View

- Use the Outlet View to confirm trajectory and prepare joint
  - ▣ Projection of the whole sacrum
  - ▣ Confirms safe zone trajectory relative to the neuroforamina and S1 endplate.



---

---

---

---

---

---

---

---

## iFuse Implant System

- Porous plasma spray coated titanium implants
- Lengths: 35-55mm
- Diameter: 4-7mm
- Minimally invasive lateral approach
- No bone graft is used
- Implants are fixated across the SI joint



---

---

---

---

---

---

---

---

## DIANA Cage

- Cage is indicated for lumbar interbody fusion
- Posterior approach
- Self-tapping, hollow & fenestrated cage
- Implants distract the joint
- Length: 30mm
- Diameter: 13-19mm
- Joint preparation & bone grafting are part of the procedure
- Implants are inserted between the SI joint surfaces



---

---

---

---

---

---

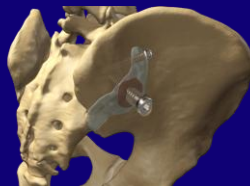
---

---

## Slimmetry™ Procedure Overview

Three phases of Slimmetry™ procedure:

- ▣ Access
- ▣ Joint Preparation
- ▣ Implant Delivery



---

---

---

---

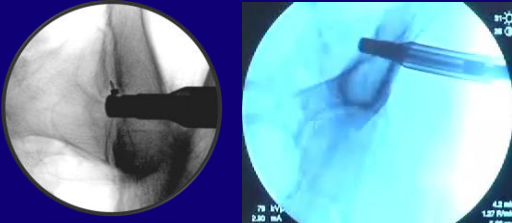
---

---

---

---

## Joint Preparation



---

---

---

---

---

---

---

---

## Bone Grafting



---

---

---

---

---

---

---

---

## Implant Delivery



---

---

---

---

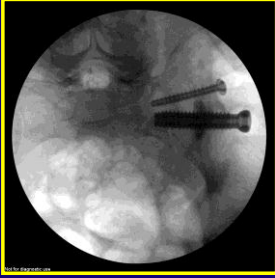
---

---

---

---

## Final Implant



---

---

---

---

---

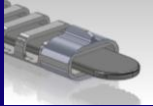
---

---

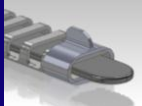
---

## Joint Preparation Instruments

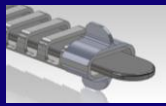
Specially designed curettes allow for:  
- Minimally Invasive Perpendicular Access to the SI joint  
- Removal of cartilage and preparation of the joint surface



- Ilium Curette**
- Function: Create room in joint
  - Tip Height: 2.5 mm
  - Cutting Diameter: up to 25mm



- Sacrum Curette**
- Function: Prepare Ilium
  - Tip Height: 3mm
  - Cutting Diameter: up to 25mm



- Dual Curette**
- Function: Prepare Sacrum
  - Tip Height: 4.5mm
  - Cutting Diameter: up to 25mm



---

---

---

---

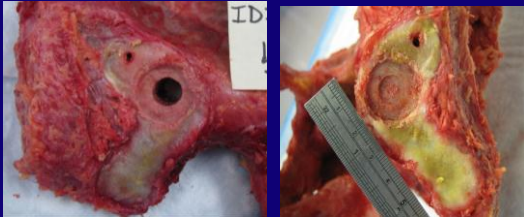
---

---

---

---

## Joint Preparation - Dissected Joint



---

---

---

---

---

---

---

---



## Clinical Experience

- Cases
- Images
- Follow-up
- How I found patients
- Etc



---

---

---

---

---

---

---

---

## Adding SIJ Fusion to your Practice

- Screening for patients
- Reimbursement = spinal fusion
  - DRG 460
  - CPT 27280, 22899(27216), 20930, 20936



---

---

---

---

---

---

---

---

## The Future of SIJ Fusion

- SIJ Fusion is Hot Topic!
- Minimally Invasive solutions are popping up
- Will become significant part of surgeon practice
- Outpatient surgery



---

---

---

---

---

---

---

---