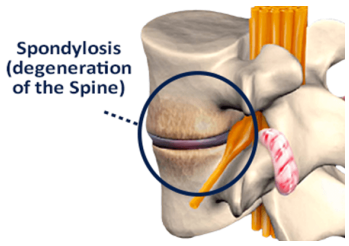
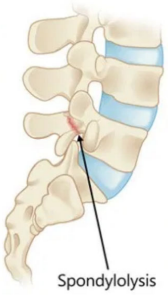
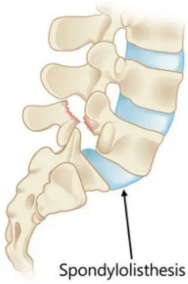
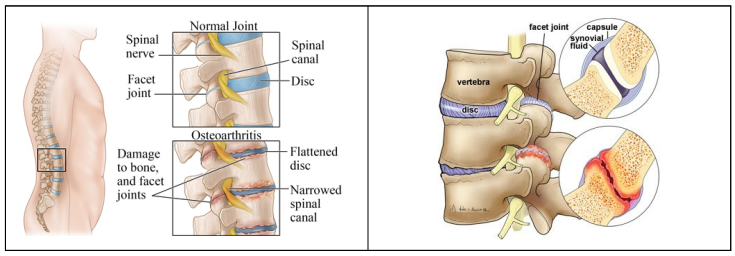
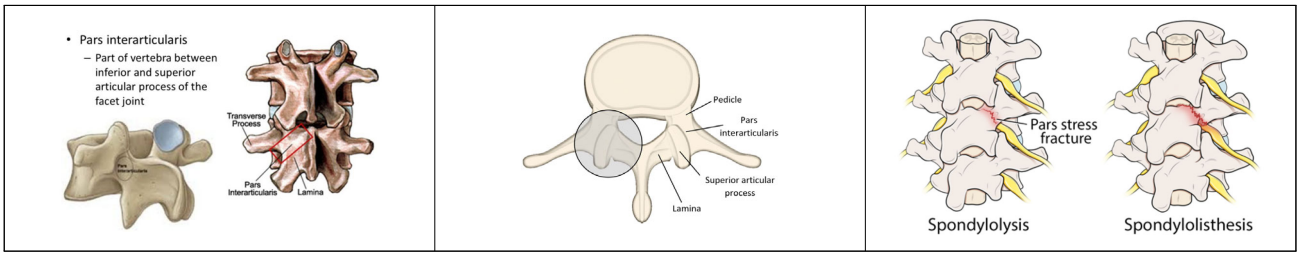
Spondylosis	Spondylolysis	spondylolisthesis
		
degenerative osteoarthritis of the spine	defect of a vertebra in the pars interarticularis	slipped vertebra

Lumbar spine radiographs demonstrates normal alignment, no fractures, multilevel lumbar disc height loss, and advanced facet hypertrophy. Which of the following best defines the imaging abnormalities?

A. Spinal stenosis
B. Spondylosis
C. Spondylolysis
D. Spondylolisthesis

- Degenerative spine changes are a common finding in the elderly population.
- The **facet joints**, which are a pair of small joints at each level along the back of the spine, are designed to provide support, stability, and flexibility to the spine. Facet Hypertrophy is the term used to describe a degeneration and enlargement of the facet joints.
- Lumbar **spondylosis** is a term used to describe degenerative conditions affecting the lumbar disks, vertebral bodies, and facet joints of the lumbar spine.





What is the most common cause of low back pain in the adolescent athlete?

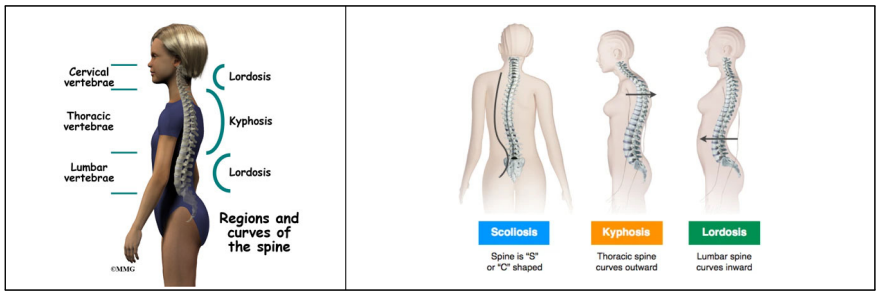
A. Spondylolisthesis
B. Ankylosing Spondylitis
C. Spondylolysis
D. Osteosarcoma

- **Spondylolysis** is a bony defect in the pars interarticularis. Given that peak bone mass doesn't occur until a patient is in their mid-20s or 30s, the bone is susceptible to repetitive stress injuries of the spine. This results in spondylolysis, which is the most common cause of low back pain in the adolescent athlete.
- **Spondylolisthesis** can occur due to bilateral spondylolysis in adolescents, but is less common.
- Ankylosing spondylitis and osteosarcoma are on the differential diagnosis, but not frequently encountered in the adolescent athlete.

Which of the following is the most appropriate rehabilitation intervention for pediatric spondylolysis with low grade spondylolisthesis?

A. Core strengthening exercises
B. Facet injection
C. Pro-lordotic program
D. Surgical fusion

- Surgery is not performed for **pediatric spondylolysis** unless there are associated neurological deficits due to the spondylolysis.
- Lordotic exercises increase stress at pars fractures and may increase pain and peri-osseous inflammation.
- Facet injections are not often prescribed therapies because most patients improve with core strengthening and hamstring stretching.

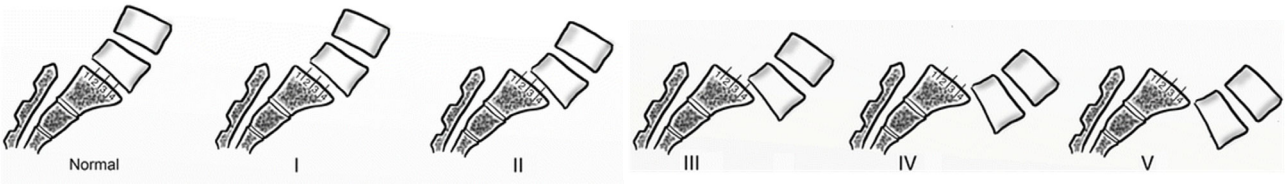


Grade I	Grade II	Grade III	Grade IV	Grade V
0-25%	26-50%	51-75%	76-100%	complete fall off

Radiographic evidence of 40% anterolisthesis of L5 on S1 vertebra is consistent with which Meyerding's classification of spondylolisthesis?

A. Grade I
B. Grade II
C. Grade III
D. Grade IV

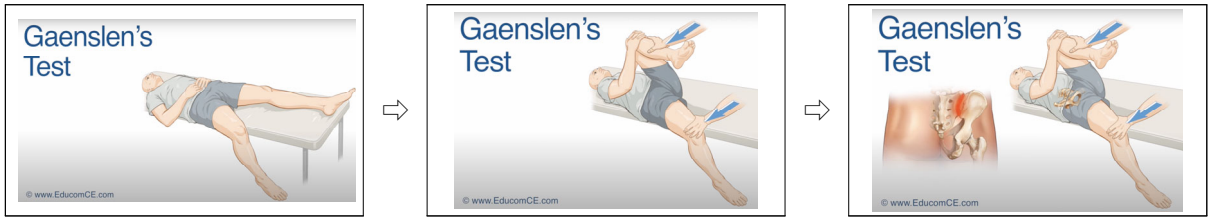
- The natural history of spondylolysis and low-grade (grades 1-2) spondylolisthesis is benign, that is, it is rare to have progressive slippage.
- **Meyerding's classification** of spondylolisthesis is based on the percentage of anterior displacement of the superior vertebral body over the inferior vertebral body



Which of the following is the most likely cause of symptomatic Lumbar Spondylolisthesis WITHOUT a defect in the pars interarticularis?

A. Traumatic
B. Dysplastic
C. Isthmic
D. Degenerative

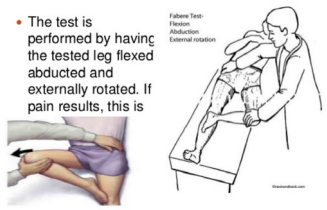
- **Degenerative spondylolisthesis** is seen in elderly patients and is related to chronic facet arthropathy, degenerative disc disease, and joint remodeling.
- **Isthmic spondylolisthesis** is the most common type of spondylolisthesis overall and is related to spondylolysis, a defect in the pars interarticularis.
- **Dysplastic spondylolisthesis** is a less common a form of spondylolisthesis due to congenital dysplasia of the posterior element.
- **Traumatic spondylolisthesis** is rare, and related to an acute fracture following trauma.



Which of the following is a provocative test for sacroiliac joint?

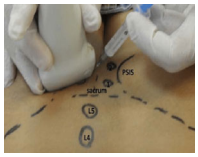
- **A. Ortalani test**
- **B. Gaenslen's test**
- **C. Log Roll test**
- **D. Straight leg test**

- Fortin Finger, Patrick's, Ischial Compression, Gaenslen, and pubic compression are all known maneuvers for provocation of sacroiliac joint pain. Three positive maneuvers have a specificity of 78% for SIJ related pain.

Fortin Finger	Patrick's test (FABER)
	

The accuracy of ultrasound guided sacroiliac injections is:

- **A. 58%**
- **B. 68%**
- **C. 78%**
- **D. 88%**



- Ultrasound allowed intra-articular injection in 88.2% of joints in the cadaveric study. Ultrasound does not expose the patient to radiation, as seen with fluoroscopic guidance, which is currently the gold standard for this injection. In addition, ultrasound may allow visualization of extra-articular spread when caused by extra-articular needle placement, which can allow for redirection of the needle to achieve intra-articular injection.

The accuracy of sacroiliac joint injections when performed without imaging guidance (ie, blindly) is about:

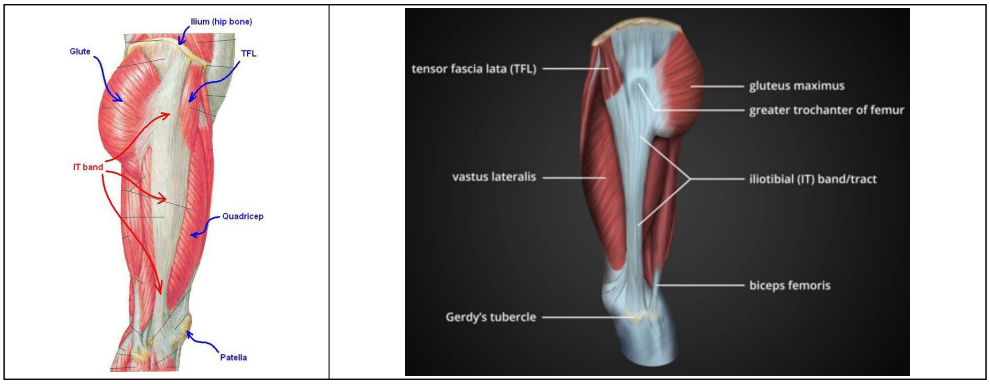
- **A. 20%**
- **B. 40%**
- **C. 60%**
- **D. 80%**

- In a study of patients where the needle was advanced toward the sacroiliac joint with use of anatomic landmarks but without image guidance, the needle was found to be in the joint space in 22% of patients. This study demonstrates the importance of using image guidance for intra-articular placement, especially if the procedure is being performed for diagnostic purposes.

Which of the following is commonly associated with sacroiliitis?

- **A. Rheumatoid arthritis**
- **B. Systemic lupus erythematosus**
- **C. Inflammatory bowel disease**
- **D. Polymyositis**

- Sacroiliitis is an inflammation of one or both of your sacroiliac joints.
- Inflammatory bowel disease, reactive arthritis, psoriatic arthritis, septic arthritis, and ankylosing spondylitis are all associated with sacroiliitis.
- Traditionally, there were four subtypes of spondyloarthritides: ankylosing spondylitis (AS), psoriatic arthritis (PsA), reactive arthritis (formerly Reiter Syndrome) (ReA), and spondyloarthropathy associated with inflammatory bowel disease (IBD).
- Lupus is not commonly associated with sacroiliitis.



From which of the following does the iliotibial band (ITB) originate?

A. Gluteus maximus
B. Gluteus minimus
C. Vastus intermedius
D. Vastus lateralis

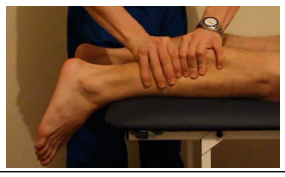
- The ITB **originates** from the tensor fascia late (TFL), gluteus maximus, and the gluteus medius.
- Distally, the ITB **inserts** onto the lateral femoral epicondyle and Gerdy's tubercle primarily. As such, the ITB is a fascial structure that promotes anterolateral stability of the hip and knee in stance and resistance of large varus torques at the knee.

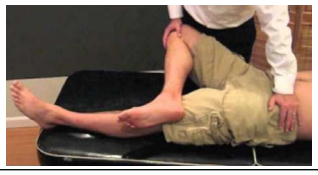
Which of the following is associated with Iliotibial Band Syndrome (ITBS)?

A. Tibial external rotation
B. Tibial internal rotation
C. Hip internal rotation
D. Hip external rotation

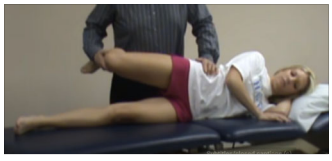
- ITBS has been associated with greater hip adduction and greater knee internal rotation. The concept of the knee internally rotating during flexion has implications for the biomechanics of Iliotibial Band Syndrome (ITBS).
- Consequently, ITBS has been associated with biomechanical abnormalities in the coronal plane, particularly at the hip, which controls orientation of the lower limb during stance.
- In a study of female runners, ITBS has been associated with greater peak hip adduction, and with greater peak knee internal rotation angle.
- Foot and ankle mechanics have not yet been shown to contribute to ITBS.

Which of the following images depicts the Ober test which is used to assess the tightness of the iliotibial band?

A


B


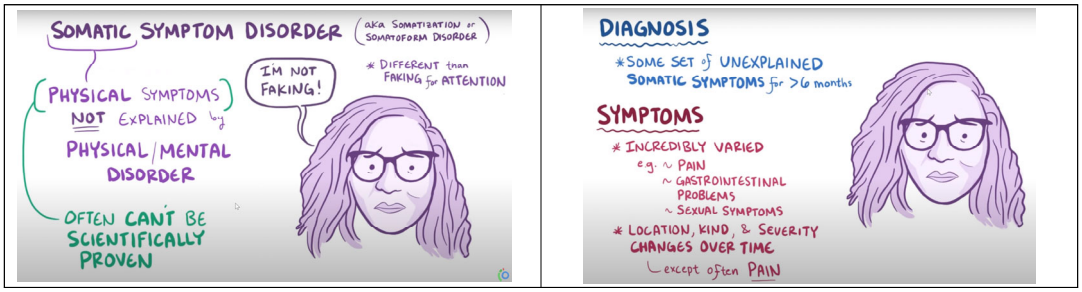
C


D


For RIGHT ITB syndrome, which of the following points must be sedated according to System 1 of Yin-Yang Balancing Acupuncture?

A. Right GB38
B. Right UB60
C. Left GB38
D. Left UB60

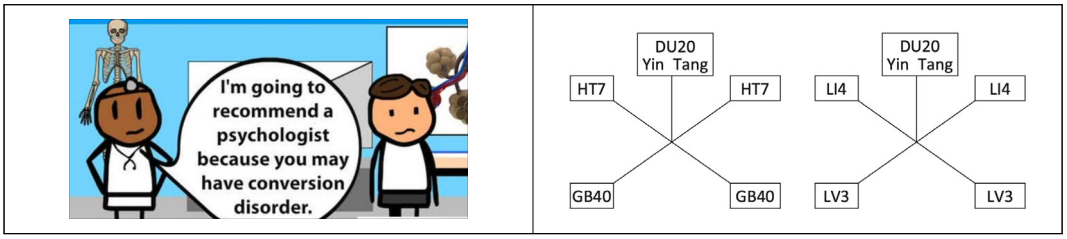
Same side		Opposite side	
Tonify FIRE	Sedate WATER	Sedate FIRE	Tonify WATER



A 27-year-old female patient presents to her primary care physician for follow-up. She has had a three-year history of bilateral hip, knee and wrist pain, abdominal pain and nausea, headache, and menstrual irregularities. Extensive workup has not been able to explain these patient's complaints. According to criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), what is the most likely diagnosis?

A. Somatic symptom disorder
B. Conversion disorder
C. Dissociative disorder
D. Major depressive disorder

- **Somatic symptom disorder**, per the DSM-V (Diagnostic and Statistical Manual of Mental Disorders 5), is characterized by a history of somatic complaints over several years in patients under 30 years of age that cannot be explained by a general medical condition. This definition is different than the definition of "somatization disorder" from the DSM-IV, which required at least 4 symptoms in multiple body areas.
- **Conversion disorder** is characterized by signs/symptoms that are not consistent with normal anatomic or physiologic correlations. The onset of symptoms is abrupt, usually accompanying a major life stressor.
- **Dissociative disorders** are characterized by disruptions of aspects of identity, consciousness, memory, environmental awareness, or motor behavior. Examples include dissociative amnesia, dissociative identity disorder, and dissociative fugue, among others.
- **Major depressive disorders** are characterized by symptoms of persistent low mood and anhedonia.



A 35-year-old male presents complaining of intermittent visual disturbances and hearing loss which started shortly after the patient witnessed a traumatic event. All diagnostic studies thus far have been unremarkable. The patient's symptoms resolved after extensive psychotherapy. What was the most likely diagnosis for this patient?

A. Somatization disorder
B. Conversion disorder
C. Dissociative disorder
D. Major depressive disorder

- **Conversion disorder** is characterized by signs or symptoms that are inconsistent with what is known about anatomy and physiology. The patients exhibiting these symptoms, unlike malingerers, do not intentionally feign symptoms - they experience these symptoms as genuine. The onset of symptoms is abrupt often, usually accompanying a major life stress.
- **Somatic symptom disorder**, per the DSM-V, is characterized by a history of somatic complaints over several years in patients under 30 years of age that cannot be explained by a general medical condition. This definition is different than the definition of "somatization disorder" from the DSM-IV, which required at least 4 symptoms in multiple body areas.
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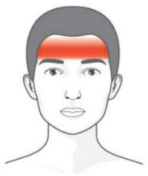
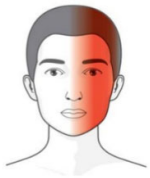
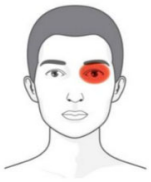
- **Major depressive disorders** are characterized by symptoms of persistent low mood and anhedonia.

	Conversion disorder	Factitious disorder	Malingering
Symptom production	Unconscious	Conscious	Conscious
Motivation	Unconscious	Unconscious	Conscious

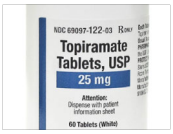
	 Tension	 Migraine	 Cluster
Pain description	Pressure, tightness, waxes and wanes	Throbbing, moderate to severe, worse with exertion	Abrupt onset, deep, continuous, excruciating, explosive
Associated symptoms	None	Photophobia, Phonophobia, n/v, aura	Tearing, congestion, rhinorrhea, pallor, sweating

Which of the following can be classified as a primary headache?

- **A. Caffeine-withdrawal**
- **B. Post-dural puncture**
- **C. Intracranial tumor-related**
- **D. Migraine with aura**

Primary headache	include migraine, tension-type headache, and cluster headaches
Secondary headaches	those that can be attributed to conditions such as trauma, infection, tumor, substance use, conditions involving adjacent/surrounding structures, or trauma.

Which medication for headache prophylaxis is most commonly associated with weight loss as a side effect?



- **A. Propranolol (Inderal®)**
- **B. Rizatriptan (Maxalt®)**
- **C. Topiramate (Topamax®)**
- **D. Baclofen (Lioresal®)**

- Topiramate is an antiepileptic drug that is approved for migraine prevention in adults. The most common side effects are tingling in the arms and legs, loss of appetite, weight loss, taste change, loose stools, nervousness, and nausea.
- Weight loss is not a side effect usually associated with the other answer-choice drugs. In fact, weight gain can be seen with one of the choices - baclofen.

A 50-year-old man complains of headache that begins in the back of the head, radiating to the vertex of the scalp. He denies any other associated symptoms, including fever, neck pain, lacrimation, nausea, visual disturbance, or sensorimotor deficits. On exam, he has pain with palpation just lateral to the occipital protuberance. What is the most likely diagnosis for this case?

- **A. Occipital neuralgia**
- **B. Tension headache**
- **C. Migraine without aura**
- **D. Cluster headache**

- The greater occipital nerve is the medial branch of the dorsal ramus of the second cervical nerve (C2). It provides sensory innervation to the posterior scalp up to the vertex, among other areas. It is located lateral to the external occipital protuberance, just medial to the occipital artery, where is can be blocked with injection of local anesthetic.
- **Tension headache** is usually described as a band-like pain around the head.
- **Migraine headache** is generally described as a unilateral, severe headache, often associated with nausea, photosensitivity, and aggravated by physical activity.
- **Cluster headache** is severe unilateral orbital/supraorbital pain with may be associated with lacrimation, ptosis and nasal congestion.