Valgus Knee and IT Band Syndrome

Causes, Prevention and Recovery Exercises

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Valgus Deformity – Valgus deformity (genu valgum) causes the knees to bow inward, giving a knock-kneed appearance and putting extra pressure on the outer (lateral) compartment of the knee joint. People with Valgus deformity often cannot touch their ankles together when their knees are together.
What causes Valgus Knee?

- Genetics - presents bilaterally

- Injury - presents unilaterally; often is caused by trauma to the ACL, growth plate injury in adolescence, or tibial growth plate fracture

- Muscular Imbalance/Deficiency
  - weak hips, tight ankles, quad/hamstring dysfunction

- Impaired Hamstring and/or Quad function
Valgus Knee and Those Affected

- Women are more likely to experience Valgus Knee due to the increased Q angle caused by wider hips.
- Individuals that are involved in training that includes:
  - Squatting
  - Lunging
  - Jumping
  - Landing
  - Climbing & Descending stairs
  - Gait/Running

*Most lower body activities*
Valgus Knee - What to look for

Characterized as hip adduction and hip internal rotation; usually when in a flexed position.
When to seek Medical Attention

- Primary sign is pain
- Can be pain in ankle or foot, but typically on the lateral part the knee
ACL Rate of Incident

- Valgus thrust (in one or both knees) was present in 7.2% (113 of 1566) persons without radiographic knee OA and in 9.1% (185 of 2026) persons with radiographic knee OA (osteoarthritis)
Possible Results from Valgus Knee

- Arthritis of the knee
- ACL injury
- Swelling
- Pain
- Buckling of the knee joint
- Progressive weakening of the leg muscles
Valgus Knee Treatment

● Exercises:
  ○ Side plank
  ○ Side step-up
  ○ Stationary lunge
  ○ Single leg bridge

● Mechanical Intervention
  ○ Use heel lift to enable ankle dorsiflexion and determine location of functional impairment

https://youtu.be/3V02e5o-WcY

(Valgus Knee Corrective Exercise)
ACL Treatment Cost

- For patients covered by health insurance, out-of-pocket costs typically consist of a copay of $10-$75 per session or coinsurance of 10%-50% or more. Physical therapy typically is covered by health insurance when medically necessary.

- For patients not covered by health insurance, physical therapy typically costs $50-$350 or more per session, depending on the length of the session, the service provided during the session and the provider. Physical therapy provided in a hospital setting tends to be more expensive.

- Total cost can range from hundreds of dollars for a relatively minor issue, such as a routine sports injury, that might require several sessions, up to thousands or tens of thousands of dollars for a major problem, such as rehabilitation from a serious accident or major surgery that might require several sessions per week for months. For example, Baudendistel Physical Therapy charges $100 for an initial evaluation and $75 for each one-hour physical therapy session. Kathe Wallace Physical Therapy in Washington charges $165-$205 for a one-hour initial evaluation, $112 for appointments less than 45 minutes and $150 for a session of 50 to 55 minutes. Elite PT in Delaware and Maryland charges $150 for a biomechanical evaluation and $65 for 30 minutes of skilled massage. Akron General Hospital in Ohio charges, for each 15-minutes: $51 for home/self-care training, $78 for gait training, $97 for exercise, $100 for massage and $135 for manual electrical stimulation or neuro-muscular re-education -- for a total of $200-$528 per hour.

- Some additional Costs that may be needed for in home exercise could be: a balance board costs about $50-$100 or more, fitness and exercise balls cost about $20-$80 or more, resistance bands cost $10 to $100
According to Guroo.com (a service of the non-profit Health Care Cost Institute), the U.S. national average cost of ACL surgery in 2016 was about $12,600.

75,000 ACL tears occur each year in the US and that 50,000 surgical ACL reconstructions per year ($630M annually)

It appears that a high percentage (up to 50%) of knees having an ACL tear, whether reconstructed or not, may go on to develop degenerative joint disease (“arthritis”) within 12 years of injury.

There is increasingly good evidence that preventive programs can reduce the risk of noncontact ACL tear. 70% – 80% of ACL tears occur without direct contact by another player.
More Treatment...

- Treatment typically starts conservatively, employing anti-inflammatories and physical therapy.
- A special kind of knee brace can also be used to try and correct the deformity slightly. If these do not help, surgery
- In older patients (>50 years old) a total knee replacement would be the next step
- In younger patients there is a procedure called Osteotomy
  - Femur is cut in order to realign the knee into the correct position
IT Band Syndrome

- IT Band Syndrome occurs when the iliotibial band, is tight or inflamed
- The IT Band attaches to the knee and helps with stabilizing and movements of the joint
- Overuse injury
Common Causes of IT Band Syndrome

- Can result in any activity that causes the leg to turn inward repeatedly.
- Running downhill or on banked surfaces
- Worn out shoes
- Running too many miles
- Poor running form
- Any excess overuse can cause IT Band syndrome
- Tight and/or weak hip muscles
  - Over/Under Active
Who is affected by IT Band Syndrome

12% of all runners

Runners affected typically possess greater knee internal rotation and hip adduction than runners unaffected.

Triathletes

Hikers

Cyclists
IT band Prevention

STRETCH!!
Tight muscles can lead to bad form when running. Stretching the muscles around your hip can help prevent the tightness of the muscle, which can cause IT Band Syndrome.

AVOID REPETITION
IT Band Syndrome can occur from muscles being worked too much and too frequently. Simply changing up your routine in the gym can help prevent the issue.
IT Band Syndrome Treatment/Prevention Stretches

- Strengthening the hips and glutes is the most valuable treatment strategy for IT band syndrome. These muscles will control rotation of the femur, position of the pelvis, and ensure the IT band is not compressed or “pulled away” from the hip.
- Foam Roller: is a great way to help treat IT Band Syndrome, the pressure from the foam roller will help loosen the tendon and the fascia.

- Hip Raises
- Lateral Band Walks
- Lying Glute Stretch
- Side leg raise
- Squats
1. IT Band Injury is a common overuse injury? T/F
2. Who is more likely to experience Valgus Knee?
3. Name 2 possible Valgus Knee treatment Exercises:
4. Swelling and Pain are both common injuries related to Valgus Knee? T/F
5. IT Band Syndrome occurs when the Iliotibial Band is too:
   a. Tight
   b. Loose
   c. Inflamed
   d. A and C
6. What % of all runners are affected by IT Band Syndrome?
7. What is the best way to prevent IT Band Syndrome?
8. Name 2 IT Band prevention stretches:
9. Triathletes, Runners and Cyclists are all at Risk for IT Band Syndrome? T/F
10. What is one common cause of IT Band Syndrome?
    a. Worn out Shoes
    b. Poor Running Form
    c. Weak/Tight hips
    d. Running too many miles
    e. All the Above
Sources


