Flex Therapist CEUs

Turf Toe - Physical Therapy Intervention

1. During an American football play, an athlete plants the forefoot on a high-traction synthetic surface with the heel elevated while another player falls onto the posterior calf, forcing the great toe upward. Which biomechanical description best characterizes the mechanism that produces turf toe in this scenario?

A. Repetitive forefoot loading in plantarflexion producing compressive overload of the dorsal capsule of the first metatarsophalangeal joint
B. Inversion of the rearfoot with internal rotation of the tibia producing tensile stress on the lateral ankle ligaments
C. Axial loading through a planted forefoot combined with forced dorsiflexion of the first metatarsophalangeal joint beyond its physiological range
D. Axial loading through a plantarflexed ankle with forced flexion of the interphalangeal joint of the hallux

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2. A track sprinter with recurrent turf toe is modifying equipment to reduce mechanical stress at the first metatarsophalangeal joint during push-off. Based on the described injury mechanism, which footwear characteristic is most appropriate to decrease hyperextension loading of the joint?

A. Increased forefoot stiffness, such as a stiff-soled shoe or carbon fiber insert that limits end-range dorsiflexion
B. Highly flexible minimalist footwear that allows maximal dorsiflexion of the great toe during propulsion
C. Soft midsole cushioning with minimal forefoot rigidity to enhance ground contact time
D. Shoes with deeper heel cups and reduced forefoot support to shift load proximally

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3. In turf toe, disruption of which structure most directly reduces resistance to dorsiflexion and impairs distribution of compressive forces across the first metatarsophalangeal joint during propulsion?

A. Dorsal joint capsule overlying the first metatarsophalangeal joint
B. Plantar plate on the plantar aspect of the first metatarsophalangeal joint
C. Extensor hallucis longus tendon crossing the dorsal surface of the great toe
D. Deltoid ligament complex on the medial aspect of the ankle

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4. A basketball player presents with plantar pain at the first metatarsophalangeal joint after a cutting maneuver. Examination reveals plantar joint line tenderness, plantar ecchymosis, pain with passive dorsiflexion, and mild sagittal plane laxity without gross instability. Which interpretation of tissue involvement best aligns with these findings?

A. Isolated inflammation of the medial sesamoid without involvement of the plantar plate or joint capsule
B. Partial disruption of the plantar capsuloligamentous complex, including the plantar plate and possibly collateral ligaments
C. Primary dorsal osteoarthritic change with osteophyte formation characteristic of hallux rigidus
D. Localized tendinopathy of the flexor hallucis longus proximal to the first metatarsophalangeal joint without capsular compromise

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5. Which description best captures the primary biomechanical role of the sesamoid complex embedded within the flexor hallucis brevis tendon at the first metatarsophalangeal joint?

A. Providing an attachment site for the extensor hallucis longus tendon to improve dorsiflexion leverage
B. Restricting plantarflexion of the hallux and increasing stiffness of the dorsal capsule during propulsion
C. Enhancing the mechanical advantage of the flexor mechanism and redistributing compressive loads beneath the first metatarsal head
D. Stabilizing the interphalangeal joint of the great toe by limiting valgus and varus deviation

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6. A dancer reports plantar great toe pain aggravated by forefoot loading. There was no discrete hyperextension event. On examination, pain is localized directly beneath the first metatarsal head, palpation over the sesamoids reproduces symptoms, resisted flexor hallucis brevis contraction is painful, and passive dorsiflexion of the great toe causes minimal capsular discomfort. Which diagnosis is most consistent with this presentation when differentiating from turf toe?

A. Grade II turf toe with partial tearing of the plantar capsuloligamentous complex
B. Sesamoid pathology such as sesamoiditis or stress reaction of a sesamoid bone
C. Hallux rigidus with advanced osteophyte formation and dorsal joint space narrowing
D. Acute flexor hallucis longus tendinopathy at the level of the midfoot pulley

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7. A soccer player presents two days after a cutting injury in which the forefoot was planted and the great toe was forced into excessive dorsiflexion. There is moderate plantar swelling, ecchymosis, plantar joint line tenderness, pain with dorsiflexion and resisted great toe flexion, reduced push-off, and mild sagittal plane laxity without gross instability. Which injury grade best fits this pattern of plantar ligament complex involvement?

A. Grade II turf toe with partial tearing of the plantar plate and associated ligamentous structures
B. Grade I turf toe with mild stretching of the plantar structures and preserved stability
C. Grade III turf toe with complete disruption of plantar stabilizing structures and severe instability
D. Chronic degenerative hallux rigidus with primary dorsal joint restriction

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8. When distinguishing Grade III from Grade II turf toe injuries, which characteristic most strongly indicates complete disruption of the plantar capsuloligamentous complex?

A. Moderate plantar pain and swelling with limited dorsiflexion but no detectable increase in joint laxity on sagittal stress testing
B. Mild pain at end-range dorsiflexion with minimal swelling and preserved joint stability during stress testing
C. Marked limitation of active and passive motion with significant swelling, ecchymosis, and sagittal plane instability that severely impairs weight-bearing and push-off
D. Gradual onset of dorsal joint stiffness, firm bony end feel in dorsiflexion, and radiographic osteophytes at the first metatarsophalangeal joint

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9. During objective examination of a suspected turf toe injury, which specific manual test best assesses sagittal plane integrity of the plantar capsuloligamentous structures at the first metatarsophalangeal joint?

A. Squeezing the calf while observing ankle plantarflexion (Thompson test) to assess Achilles tendon integrity
B. Varus and valgus stress of the interphalangeal joint of the hallux to assess collateral ligament function
C. Compression of the metatarsal heads (forefoot squeeze test) to screen for metatarsal stress fractures
D. Dorsal translation stress of the proximal phalanx relative to the first metatarsal head to evaluate joint laxity

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10. A collegiate rugby player is 6 weeks post–Grade II turf toe. Strength and range of motion are improving, and the athlete wants to begin cutting drills. Which objective criterion is most critical to confirm adequate restoration of plantar complex function before introducing these high-demand tasks?

A. Ability to perform repeated single-leg heel raises on the involved side without pain, instability, or compensation and with near-symmetric strength compared to the uninvolved limb
B. Absence of visible plantar ecchymosis and resolution of all resting swelling around the first metatarsophalangeal joint
C. Restoration of passive dorsiflexion range of motion to match the contralateral side, regardless of pain response under load
D. Subjective report of improved comfort while walking in normal footwear, even if push-off remains guarded

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