

Return to Sport Ultimate Frisbee

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PHYT 874 - Sports Elective

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Objectives

1. Understand the game, movements, and expectations of Ultimate Frisbee
2. Understand common injuries sustained in Ultimate Frisbee
3. Understand other professionals involved in care for Ultimate Frisbee athletes
4. Understand return to sport testing for Ultimate Frisbee athletes as it relates to the case and utilization in clinic

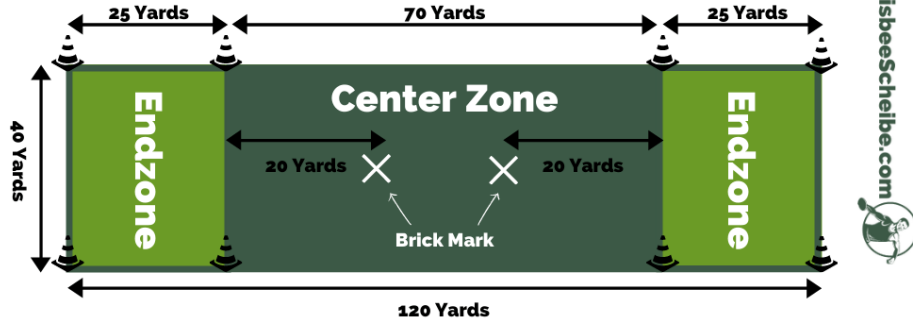
Ultimate Frisbee Background

- Over 3 million annual participants in USA. 850,000 members of USAU
- How is the game played
 - 7 (offense) vs 7 (defense)
 - Cannot move with disc in hand
 - “Spirit of the game”
 - Positions: Handler/Cutter
- Long overlapping season
 - Club = 7 months, Semi-pro = 6 months, Total 9-10 months

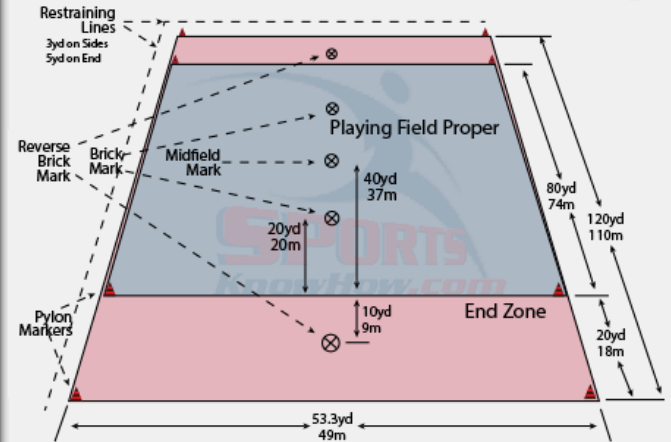
(USA Ultimate, 2016)

Professional vs Club Ultimate

Ultimate Frisbee Field Size



AUDL Ultimate Disc Field diagram



Throwing in Ultimate Frisbee



Jumping and Laying Out



Footwork and Cutting



Injury in Ultimate Frisbee

- Study on Professional Ultimate Frisbee
 - LE injury most common (72%)
 - MOI: Running (32%), collisions (29%), Lay out (20%)
 - 50% of injuries resulted in loss of time from sport
 - Most injuries were in game
- Systematic Review of all Ultimate Frisbee athletes
 - Concussion (26%)
 - Most common injuries: Knee and thigh
 - MOI: Contact with another player, non-contact

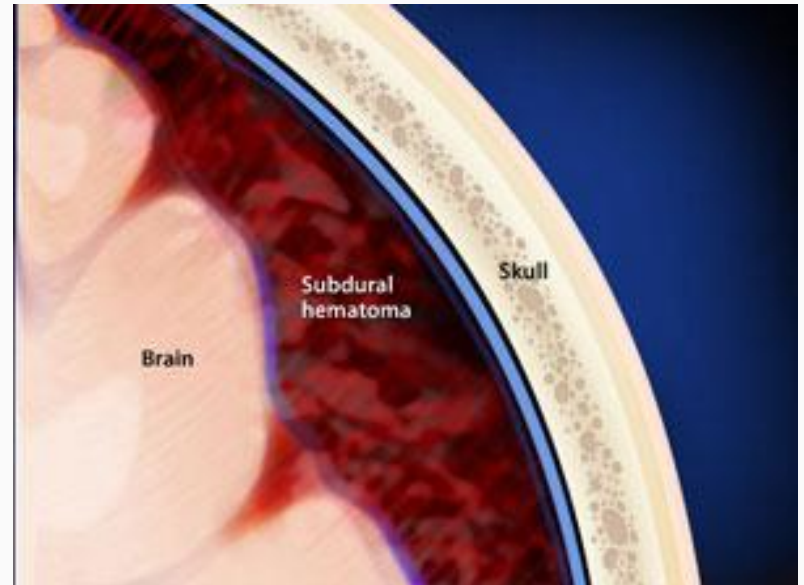


Case Study

- 24 year old semi professional Handler
 - Full time violinist
 - Non Contact, head hit the floor
 - Pt reported, “I think my shoulder went out of place”
- On Field
 - Alert and Oriented x 4
 - Shoulder Symptoms: Generalized P! Shoulder and head
- Off field
 - Pt reported reported head pounding immediately after leaving field
 - Pt reported feeling nauseous and dizzy 5 mins after leaving field
 - Pt vomited 3 times within 20 mins of leaving field

So what happened?

- SCS/AT alerted EMS
- CT scan determined the player had an acute subdural hematoma
- Neuro Surgeon performed immediate craniotomy
- Shoulder injury: Minor Subluxation
- Do you think this player returned to play?



(Logan, 2001)

Return to Sport

Return to Sport - Concussion

- Relative rest (24-48hrs) and continue activities that **ONLY** illicit mild symptoms
- Use Sport Concussion Assessment Tool symptom checklist to determine areas of focus
- Early Active Phases of Rehabilitation,
 - Symptom control, Impairment Reduction, Activity integration, Recovery Acceleration, Sport-spec
- Vestibulo-oculomotor
- Balance
- Dual Task

Return to Sport - Concussion

- Spine (Cervical & Thoracic)
 - ROM
 - Strength/endurance
 - Deep neck flexors
 - Pain
 - Guarding
- Education
 - Expectations
 - Typically better 1 to 3 months
 - Symptom monitoring/self-management
 - Return to activity pacing

Return to Sport - Concussion

- Buffalo Treadmill Test
 - Progressive & incremental
 - Identify symptom limited exercise threshold
 - Begin at
 - 3.2 mph
 - 0% grade
 - Increase by
 - 0.2 mph/minute
 - 1% grade/minute
 - Until 2-point increase in symptoms on visual scale
 - Monitor HR & BP

(Graham 2021)

Return to Sport - Shoulder

- Basic Measures
 - ROM
 - Effusion
- Strength
- Functional Tests
 - Closed Kinetic Chain Upper Extremity Stability Test
 - Unilateral Seated Shot Put Test
 - Y balance
- Time
 - No UE surgery
- Landing mechanics

(Vu 2022, Goldenberg 2021, Wilson 2020)

Readiness to Play & Psychosocial

- Tampa Scale of Kinesiophobia (TSK)
 - Concussion
- Shoulder RSI
- Fear Avoidance Belief Questionnaire (FABQ)
 - MSK populations

(Vu 2022, Thoma 2019, Shirley Ryan 2022)

Return to Sport - Lower Extremity

- Not in this case
- Often needed with Ultimate athletes
- Functional Tests
 - Y balance
 - Drop jump
 - Triple hop
 - Single hop
 - Crossover hop
 - 6m hop for time

(Vu 2022, Gustavsson 2006, Hegedus 2015, Hanzlikova 2020)

Additional Resources

1. Organizations
 - a. AUDL.com (Men's Semi-Professional Ultimate Frisbee)
 - b. Premierultimateleague.com (Women's Semi-Professional Ultimate Frisbee)
 - c. USAU: play.usultimate.org (Club Ultimate Frisbee)
 - d. Triangle Ultimate: triangleultimate.org (Recreational ultimate in Triangle)
2. GamePoint Performance: gamepointperformance.com
 - a. Standardized Warm Up Protocol
 - b. Strength and Conditioning programs for Pre-season, In-season,
3. UNC Darkside/UNC Pleiades (UNC National Champion Club teams)
 - a. uncpleiades.com
 - b. uncdarkside.com

References

1. USA Ultimate . *USA Ultimate 2016 Annual Report*. USA Ultimate; Colorado Springs, CO, USA: 2016.
2. Hess MC, Swedler DI, Collins CS, Ponce BA, Brabston EW. Descriptive Epidemiology of Injuries in Professional Ultimate Frisbee Athletes. *J Athl Train*. 2020;55(2):195-204. doi:10.4085/1062-6050-269-18
3. Fajardo Pulido D, Lystad RP. Epidemiology of Injuries in Ultimate (Frisbee): A Systematic Review. *Sports (Basel)*. 2020;8(12):168. Published 2020 Dec 21. doi:10.3390/sports8120168
4. Logan SM, Bell GW, Leonard JC. Acute Subdural Hematoma in a High School Football Player After 2 Unreported Episodes of Head Trauma: A Case Report. *J Athl Train*. 2001;36(4):433-436.
5. Alsalaheen B, Landel R, Hunter-Giordano A, et al. A Treatment-Based Profiling Model for Physical Therapy Management of Patients Following a Concussive Event. *J Orthop Sports Phys Ther*. 2019;49(11):829-841. doi:10.2519/jospt.2019.8869
6. Register-Mihalik JK, Guskiewicz KM, Marshall SW, et al. Methodology and Implementation of a Randomized Controlled Trial (RCT) for Early Post-concussion Rehabilitation: The Active Rehab Study. *Front Neurol*. 2019;10:1176. Published 2019 Nov 8. doi:10.3389/fneur.2019.01176
7. Vu V. Return to Sports Testing. April 2022.
8. Goldenberg BT, Goldsten P, Lacheta L, Arner JW, Provencher MT, Millett PJ. Rehabilitation Following Posterior Shoulder Stabilization. *Int J Sports Phys Ther*. 2021;16(3):930-940. Published 2021 Jun 1. doi:10.26603/001c.22501

References

9. Wilson KW, Popchak A, Li RT, Kane G, Lin A. Return to sport testing at 6 months after arthroscopic shoulder stabilization reveals residual strength and functional deficits. *J Shoulder Elbow Surg.* 2020;29(7S):S107-S114. doi:10.1016/j.jse.2020.04.035
10. Quatman-Yates CC, Hunter-Giordano A, Shimamura KK, et al. Physical therapy evaluation and treatment after concussion/mild traumatic brain injury. *J Orthop Sports Phys Ther.* 2020;50:CPG1-CPG73.
11. Gustavsson A, Neeter C, et al. A test battery for evaluating hop performance in patients with an ACL injury and patients who have undergone ACL reconstruction. *Knee Surgery, Sport Traumatol Arthrosc.* 2006; 14:778-788.
12. Hegedus EJ, McDonough S, Bleakley C, Cook CE, Baxter GD. (2015). Clinician-friendly lower extremity physical performance measures in athletes:a systematic review of measurement properties and correlation with injury, part 1. The tests for knee function including the hop tests. *Br J Sport Med*;49(10):642-8.
13. Hanzlíková I, Athens J, Hébert-Losier K. Clinical implications of Landing Error Scoring System calculation methods. *Phys Ther Sport.* 2020;44:61-66. doi:10.1016/j.ptsp.2020.04.035
14. Graham RF, van Rassel CR, Burma JS, et al. Concurrent validity of a stationary cycling test and the buffalo concussion treadmill test in adults with concussion. *J Athl Train.* 2021;56:1292-1299.
15. Fear-Avoidance Beliefs Questionnaire | RehabMeasures Database. <https://www.sralab.org/rehabilitation-measures/fear-avoidance-beliefs-questionnaire>. Accessed April 18, 2022.
16. Thoma LM, Grindem H, Logerstedt D, et al. Coper Classification Early After Anterior Cruciate Ligament Rupture Changes With Progressive Neuromuscular and Strength Training and Is Associated With 2-Year Success: The Delaware-Oslo ACL Cohort Study. *Am J Sports Med.* 2019;47(4):807-814. doi:10.1177/0363546519825500

Questions?