Physical Therapy Considerations for the Traditional, Paralympic, & Amputee Soccer Athlete

James Pierre-Glaude, PT, DPT, ATC, OCS, CSCS

"Amputee" Soccer

- Sport was invented in 1980
 - Seattle by Don Bennett, (Amp skier)
- 1984—1st International Tournament in Seattle
- World Amputee Football Federation
 - Est. 2005
 - International governing body
 - Sport played in 60+ countries
 - Amputee Soccer World Cup
 - 4 Year competition cycle











American Amputee Soccer Association

Amputee Soccer

- American Amputee Soccer Association
 - Est. 2004
 - Board of Directors
 - Manages the US National Amputee Soccer Team
 - Official US representative of WAFF
 - Affiliate member of U.S. Soccer Federation



American Amputee Soccer Association

Mission Statement

• Promoting the development of amputee soccer domestically and empowering elite athletes to represent the USA in amputee soccer internationally.

Knowing the Adaptive Sport

- In-depth knowledge of sport
- Rules/Regulations
- Know the participants
- Physical demands
- Equipment
- "Try" it yourself



Player Eligibility

- Persons living with amputation or congenital deficiency ("les autres")
 - Upper Limb—Keeper
 - Lower Limb—Field player (no prosthesis using forearm crutches)
- Co-ed
 - Currently developing Women's game

ASOCIA

ON MEXICA

Laws of the Game

- 7 v7
 - 6 field players
 - 1 goalie
- 2 x 25 min halves
 - 1 Time-out/ half
- Kick-ins
- No Offside
- Goalie Box (8m)
- No intentional manipulation of the ball with the crutches or residual limb









frankul WORLD				
FOOTBALL	5-	24	Zanki	ng-
	6	BRAZIL	6	MEXICO
	7	TANZANIA	17 🗁 18 🕕	LIBERIA
		ENGLAND	1	IRAQ
		ARGENTINA	20 🕕	IRELAND
		COLOMBIA	22	INDONESIA
	13 -	POLAND IR IRAN	23 💽 24 🛑	SPAIN GERMANY

Amputee World Cup 2022

- Istanbul, Turkey
 - 10/1/22 10/9/22
 - 24 Nations participated
 - 1st Turkey
 - 2nd Angola
 - 3rd Uzbekistan
 - 4th Haiti
 - 15th USA



The Amputee Soccer Athlete

Upper Body Strength

Upper Body Endurance





Dynamic Balance



16



Lower Body Strength/Endurance

Crutch Confidence





Performance Testing

Sector Sector March

Agility Performance Testing



Articles

Athletic ability in the sport of amputee soccer

Check for updates

Eric Lamberg 🔽 💿 & James Pierre-Glaude 💿

Pages 1-7 | Published online: 30 Mar 2021

66 Download citation Attps://doi.org/10.1080/14660970.2021.1908269









Vertical Jump Test

Role of Physical Therapist in Amp Soccer





Role of Physical Therapist in Amp Soccer

Off-Field

- Prehab/Rehab
- Telehealth
- Travel logistics
 - Domestic vs. International
 - Ice/Heat
 - Meal/nutrition planning
- Equipment
- Injury Report

On-Field

- Warmups
- Pregame
 - Taping & stretching
- Game coverage
 - Injury assessment
 - Emergency care
- Cooldown
- Recovery
 - Off loading UE vs. LE















Warm-ups

1L Bridge	Shoulder T's & Swimmers
High Knees	Butt Kicks
Open/Close the gate	Hamstring Kicks
Side Shuffling	Agility Ladder
Headers	Sprints
Z cuts	Band work

Recovery

- STM w/ PT or MT → Active/Passive Mobility
 → Light mm activation
- Transition to prosthetic post- game/event (off load UE)
- Similar stretches as traditional soccer
 - Emphasize UE/Thoracic
 - Elongation of pecs, biceps, triceps d/t extended athletic crutch use
- Diaphragmatic breathing

- Pre/post match nutrition/hydration needs
- Recovery aides
 - LE compression garments
 - Percussive instruments
 - Bands/straps
 - Aquatherapy
 - Yoga/Mindfulness

























Movement Considerations



Evidence

422 Analysis of athletic injuries, biomechanical aspects and sports performance in amputee soccer – a systematic review

Kasprzyk, Aneta; Kasinska Zofia; Narloch Dominika; Grygorowicz Monika. British Journal of Sports Medicine; London Vol. 55, Iss. Suppl 1, (Nov 2021): A161-A161. DOI:10.1136/bjsports-2021-IOC.386

Scapular resting position, shoulder pain and function in disabled athletes

Prosthetics and Orthotics International 2015, Vol. 39(5) 390–396 © The International Society for Prosthetics and Orthotics 2014 Reprints and permissions: agepub.co.uk/journals/Permissions.nav Dol: 10.1177/0309364614534295 poi.sagepub.com

INTERNATIONAL SOCIETY FOR PROSTHETICS AND ORTHOTICS

Aydan Aytar¹, Aslican Zeybek¹, Nihan Ozunlu Pekyavas¹, Ayca Aytar Tigli² and Nevin Ergun³

ORIGINAL ARTICLE

TRENDS in Sport Sciences 2017; 2(24): 73-79 ISSN 2299-9590

Determinants of sports injuries in amputee football: initial analysis

ZOFIA KASIŃSKA, TOMASZ TASIEMSKI



Is there a relationship between core stability, balance and strength in amputee soccer players? A pilot study

Original Research Report

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Prosthetics and Orthotics International

36(3) 332-338

Aydan Aytar¹, Nihan Ozunlu Pekyavas¹, Nevin Ergun² and Metin Karatas¹

Central European Journal of Sport Sciences and Medicine | Vol. 18, No. 2/2017: 13-22 | DOI: 10.18276/cej.2017.2-02 |

SPORT INJURIES IN ELITE AMPUTEE FOOTBALL PLAYERS

Jacek Wieczorek,^{1, A, B, C, D, E} Andrzej Wieczorek,^{2, A, C, D, E} Joanna Bauerfeind,^{1, A} Paula Grzelińska,^{1, B, D, E} Robert Śliwowski,^{2, D} Tomasz Tasiemski^{1, A, C, D, E}

¹ University School of Physical Education Poznań, Department of Sport for People with Disabilities, Poland ² University School of Physical Education Poznań, Department of Team Sports, Poland ³ Study Design: ² Data Collection; ² Statistical Analysis; ³ Manuscript Preparation; ² Funds Collection

Evidence

Baltic Journal of Health and Physical Activity 2021; 13 (1): 1-8 Journal of Gdansk University of Physical Education and Sport e-ISSN 2080-9999

ORIGINAL

doi: 10.29359/BJHPA.13.1.01

The relationship between scapular endurance and core endurance in elite amputee football players

Gurkan Gunaydin

Department of Physical Therapy and Rehabilitation, Faculty of Health Sciences, Aydn Adnan Menderes University, Efeler, Aydın, Turkey RESEARCH ARTICLE: AMPUTEE

Effect of Playing Football (Soccer) on Balance, Strength, and Quality of Life in Unilateral Below-Knee Amputees

Yazicioglu, Kamil MD; Taskaynatan, Mehmet Ali MD; Guzelkucuk, Umut MD; Tugcu, Ilknur MD

Author Information⊗

American Journal of Physical Medicine & Rehabilitation 86(10):p 800-805, October 2007. | DOI: 10.1097/PHM.0b013e318151fc74

On-Field vs. Off-Field Assessment

CE

MPORMAR

aasics

Immediate Management of Orthopedic Pathology

- Ask yourself, "Does the condition require emergency management to save the patient's life or extremity?"
- Immediate examination must rule out:
 - Lack of ABCs
 - Life-threatening head or spinal column trauma
 - Profuse bleeding
 - Fractures
 - Joint dislocations
 - Peripheral nerve injury
 - Severe soft tissue trauma

Emergency Planning

- Emergency action plan
 - Personnel
 - Contact information
 - Roles
 - Equipment
 - What emergency equipment is available, and where is it?
 - Communication
 - On-field to sideline
 - On-field to emergency personnel
 - On-field to team physician
 - Standard procedures
 - Emergency transportation
 - Post-event catastrophic incident guidelines
 - Home vs. Away vs. Neutral sites
 - Competition vs. Practice

Sport-Specific Rules Pre-event **medical time out** to meet with officials and emergency personnel

• Items to discuss?

Specific rules regarding on-field evaluations for each sport at each level

- Injury examination rules
 - Must the official summon the clinician onto the field?
 - Does play stop or continue?
 - Is there a time limit for examinations?
- Protective equipment rules

The On-Field Examination

- Make sure the scene is safe- play has stopped
- Examination model will vary, depending on the injury
 - Example: The inspection will begin before a history in an unconscious athlete
- Patient position
 - Prone, supine, or sitting on a bench?
- Always starts with the primary survey
 - Presence of a pulse, airway integrity, presence of breathing, Absence of severe bleeding



Clothing is generally not removed on the field.

Including footwear, tape, and braces

Equipment Considerations



Equipment may need to be removed: Prior to splinting or spineboarding Prior to transport



Equipment MUST be removed:

Chest access for CPR and AED use Intravenous line

access



Return to Activity Decision-Making

Consult a physician, if necessary

Younger athletes vs. older athletes

• Conservative vs. aggressive management

Risk of re-injury?

Assessment of function

- Strength and ROM
- Pain
- Proprioception
 - Patient needs to be able to protect the body part from further injury
- Functional activity progression
 - Walk, jog, hop, sprint, change direction, activity-specific requirements

Return to Activity Decision-Making





US Amputee Soccer Team

- High-level Competitive Athletes from across the USA
- Each member has their own tremendous story
 - How they have gotten here
 - How this game has helped them grow
Interested?

US Amputee Soccer Team

2023 National Talent ID Camp

For more information & registration email

info@usampsoccer.org

www.usampsoccer.org

Registration open through <u>March 1st</u>



March 17-19, Clifton, NJ

2023



Thank You!

James Pierre-Glaude, PT, DPT, ATC, OCS, CSCS United States National Amputee Soccer Dir. Of Sports Medicine/Performance JPGlaude@Usampsoccer.org

References

- Aytar, A., Pekyavas, N. O., Ergun, N., & Karatas, M. (2012). Is there a relationship between core stability, balance and strength in amputee soccer players? A pilot study. *Prosthet Orthot Int, 36*(3), 332-338. doi:10.1177/0309364612445836
- Aytar, A., Zeybek, A., Pekyavas, N. O., Tigli, A. A., & Ergun, N. (2015). Scapular resting position, shoulder pain and function in disabled athletes. *Prosthet Orthot Int, 39*(5), 390-396. doi:10.1177/0309364614534295
- Gunaydin, G. (2021). The relationship between scapular endurance and core endurance in elite amputee football players. *Baltic Journal of Health and Physical Activity, 13*(1), 1-8. doi:10.29359/BJHPA.13.1.01
- Kasinska, Z., & Tasiemski, T. (2017). Determinants of sports injuries in amputee football: Initial analysis. *Trends in Sport Sciences*, 2(24), 73-79.
- Kasprzyk, A., Z., K., D., N., & M., G. (2021). Analysis of athletic injuries, biomechanical aspects and sports performance in amputee soccer – a systematic review. *British Journal of Sports Medicine*, 55. doi:10.1136/bjsports-2021-IOC.386
- Lamberg, E., & Pierre-Glaude, J. (2021). Athletic ability in the sport of amputee soccer. Soccer & Society, 23(1). doi:https://doi.org/10.1080/14660970.2021.1908269
- W., J., W., A., B., J., G., P., Ś., R., & T., T. (2017). Sport injuries in elite amputee football players. *Central European Journal of Sport Sciences and Medicine*, 10(2), 13-22. doi:10.18276/cej.2017.2-02
- Yazicioglu, K., Taskaynatan, M. A., Guzelkucuk, U., & Tugcu, I. (2007). Effect of playing football (soccer) on balance, strength, and quality of life in unilateral below-knee amputees. Am J Phys Med Rehabil, 86(10), 800-805. doi:10.1097/PHM.0b013e318151fc74

Shirley Ryan **Kbilitylab**.



M Northwestern Medicine®

Feinberg School of Medicine

Cerebral Palsy National Teams (Men/Women) Power Soccer(Coed)

MELISSA KOLSKI, PT, DPT

SHIRLEY RYAN ABILITYLAB (FORMERLY REHABILITATION INSTITUTE OF CHICAGO)

Objectives & Roadmap

- Describe differences in the structure and game play of CP and power soccer
- Discuss classification in CP football and power soccer adaptive sport populations.
- Contrast biomechanical demands of CP football through example
- Identify return to play decision making across a specific case of an adaptive soccer athletes



EVILIA FI

CP Football (IFCPF)- 74 countries

- 7aside (CP or related neurological conditions) Stroke, aquired brain injuries
- 5 aside.
 - Frame working in development (those with high support needs.)

Ř COMPANY LE C

4 year cycle

- Odd years World Championships and World Cup
- Even regional championships / qualifiers

The Rules Cerebral Palsy Soccer

- 30 min half (shorter) /25 (Women's)
- No offside
- Field is smaller 70 m length x 50m /vs 50x 35
- Smaller Goals 2m height: 5m width
- Roll in v Throw in encourage attacking play
- Teams have to play 1 FT 1
- Teams can play Maximum of 1 FT3
- ▶ 5 substitutes, 3 opportunities during the match







Classification System

Classification system started 2018

- Impairment A bilateral hypertonia/diplegia
- Impairment B ataxia, dyskinesia
- Impairment C unilateral hypertonia/hemiplegia
- Level 1 severe involvement
- Level 2 moderate involvement
- Level 3 minimal involvement





Stages of Classification



Things to consider when viewing the videos:

- Observation Categories
 - ROM
 - Symmetry
 - Balance
 - Coordination
 - Arm involvement
 - Performance

- Evidence based testing:
 - Coordination/ROM/Symmetry Heel toe, Split jumps, Side stepping, Hexagon Hop
 - Power/Jumping/Symmetry/ROM Triple Hop, Four bounds for distance, Broad jump
 - Balance Hexagon Hop, Triple Hop, Single leg balance
 - Change of Direction Modified Agility Test, Illinois Agility Test, Stop and Start
 - Performance Kicking and passing, preparation – action - recovery

Video analysis – sprint and dribbling



Video analysis – kicking and passing



Ball influenced classification Players with **moderate** neurological impairments had higher variation in the trial requiring ball dribbling. Reina 2017

Video analysis – triple hop



Video analysis – kicking and passing



García-Pinillos, et al. 2015; Jung, Her, Ko, 2013

Video analysis - CODA



Bloomfield et al 2007

MAT and Illinois



Lets do some questions

Remember to think about/look for:

- These observation categories
 - ► <u>ROM</u>
 - Symmetry
 - <u>Balance</u>
 - Coordination
 - Arm involvement
 - Performance

- And these classes
 - Impairment A bilateral hypertonia/diplegia
 - Impairment B ataxia, dyskinesia
 - Impairment C unilateral hypertonia/hemiplegia
 - Level 1 severe involvement
 - Level 2 moderate involvement
 - Level 3 minimal involvement

Question

In this video the player has

- A.Subtle right hemiplegia and therefore class B
- B.Subtle left hemiplegia and therefore class B

c.Subtle diplegia and therefore class C

D.Subtle left hemiplegia and therefore class C



Gamonales, J. M., Muñoz-Jiménez, J., Gómez-Carmona, C. D., & Ibáñez, S. J. (2021).



Question

- In this video the player has
- A. Subtle right hemiplegia and therefore class B
- B. Subtle left hemiplegia and therefore class B
- c. Subtle diplegia and therefore class C

D. <u>Subtle left hemiplegia and therefore class C</u>

Case Study L Deltoid Ligament Sprain



10% medial deltoid ligament 2nd highest rates in Men's soccer and nearly ½ contact injuries Kopec TJ et al. 2017



Ankle Functional progression

- Walk 10 yards FW/BW
- Side walk x 10 yards
- Jog15 yd F/B
- Lateral shuffle
- Sprint @70 @85
- Carioca
- High knees
- Sprint, plant back pedal (10,5 yards)
- Lateral shuffle to sprint
- ► T Drill
- ▶ 5-10-5
- Skips for distance & Height
- Lateral bounding

Carioca



Simulated Modified Agility T test





Return to Sport - Ankle Sprain (Lateral)

- PAIN SEVERITY (during & last 24 hours)
- ANKLE IMPAIRMENTS (ROM, Strength, Endurance, power)
- ANKLE PERCEPTION (Confidence, perceived stability, readiness)
- SENSORIMOTOR CONTROL (proprioception, dynamic control/balance)
- SPORT/FUNCTIONAL PERFORMANCE (hopping, agility, sport-specific, full training session.

Smith et al.BJSM 2021

Return to Sport -Ankle Sprain

- PAIN SEVERITY (during & last 24 hours)
- ANKLE IMPAIRMENTS (ROM, Strength, Endurance, power)
- ANKLE PERCEPTION (Confidence, perceived stability, readiness)
- SENSORIMOTOR CONTROL (proprioception, dynamic control/balance)
- SPORT/FUNCTIONAL PERFORMANCE (hopping, agility,sport specific, full training session.

Smith et al.BJSM 2021

StARRT Framework (Shrier BJSM 2015)

- Competitive level
- His required postion on the team
- His own Tissue



Figure 2 The Strategic Assessment of Risk and Risk Tolerance (StARRT) framework for return-to-play (RTP) decisions. This framework illustrates that patients should be allowed to RTP when the risk assessment (steps 1 and 2) is below the acceptable risk tolerance threshold (step 3), and not allowed to RTP if the risk assessment is above the risk tolerance threshold. The StARRT framework groups factors according to their causal relationships with the two components of risk assessment (Tissue Health, stresses applied to tissue) and risk tolerance, as opposed to the three-step framework that groups factors according to the sociological source of the information. In some cases, apparently a single factor can have more than one causal connection and would be repeated. For example, play-offs will increase the competitive level of play and therefore increase Tissue Stresses and increase risk. However, it is also expected to affect a patient's desire to compete (ie, mood, risk of depression) and could affect financial benefit as well. These causal effects would lead to increased risk tolerance. In this framework, each outcome is evaluated for RTP, and the overall decision is based on the most restricted activity across all outcomes (see text and table 1 for details). MSK, musculoskeletal.

Rehabilitation Considerations

- Temperature & how does it impact play & neurological condition
- Field conditions
- Pre/Post Recovery situations (water/recovery)
- Impact of injuries on fielding a team
- Impact of being around other teams in a group environment
 - Wearing tape/braces
- Classification stages

Rago et al 2019 Dos Santos et al 2005

CP muscle has characteristics of "Aged" muscle

Decreased fiber size

- Increased extracellular connective tissue and crosslinks
- Increased mechanical stiffness
- Decreased satellite cell density

► Lieber 2022

Common Injuries

- ▶ HIGH Risk 9.8 injuries per 1000 athlete-exposures (AE)
- Concussion management lack of cohesion internationally (West et al 2016)
- ▶ 15-19% of athletes injured in the Paralympic games
- Acute injuries more common than overuse
- LE and ankle and knee most common
- > 9% head injuries
- Next injuries were contusions mm strain

Dos Santos et al 2005 Ferrara, M.S., Peterson, C.L 2000

United States Power Soccer Association (USPSA)

- Gymnasium on a regulation basketball court.
- Two teams of four athletes in power wheelchairs attack, defend, and spinkick
- 13-inch soccer ball
- 20 min periods x2





Conditions for Power Soccer

- Neurological conditions
- Orthopaedic Disorders
- Amputations, congenital or acquired
- Myopathies
- Spinal cord injury
- At least 5 years of age & adequate control of their powerchair
- Levels of fitness, age, cognition, gender or skill, are not factors in classification.

Inclusion in sport

- Awareness of non-traditional sports in Paralympic games
- Denied as a sport x3-seeking 2024 bid
- Incorporating sports that are played by individuals of all abilities, particularly those with neuromuscular conditions
- Disability Empowerment
Classification considerations

- Drive control, ball control, communication, and adjustment to the ball
- Joint-specific strength and range of motion, sensory, and neurological variables identified as underlying determinants
 - Barfielld et al 2021

Fielding a Team

- PF1 :This denotes a player who has highly significant levels of physical difficulty which affects their overall performance.
- PF2 : This denotes a player who has moderate to mild levels of physical difficulty which affects their overall performance.
- Maximum of two PF2 sport class players during a match for all FIPFA designated competitions.
- There is no restriction in the combination of sport classes within the playing squad of a team

Why become a classifier

- > There are presently no classifiers for Paralympic Soccer from the United States!
- Travel the world
- Enhance your knowledge and fine-tune your physical exam and observational assessment
- ▶ Help the sport grow especially at the youth level

Visit IFCPF.com for more information

EXTENDED NATIONAL TEAMS

GRASS

Men's Cerebral Palsy National Team* Women's Cerebral Palsy National Team*

Men's Deaf National Team Women's Deaf National Team

* (for eligible players with CP, stroke or traumatic brain injury)

COURT

Men's Futsal National Team Women's Futsal National Team Power Soccer National Team (co-ed)

SAND

Men's Beach Soccer National Team Women's Beach Soccer National Team

For information on US Soccer's ENT email extendedNT@ussoccer.org

Thank You!

Scan to view the Shirley Ryan AbilityLab Academy's 2023 Catalog of Continuing Education or go to sralab.org/academy

Email : <u>Mkolski@sralab.org</u> Twitter: KolskiMelissa Instagram : aworldofhurt_Kolski



REFERENCES

- Ahmed OH, Hussain AW, Beasley I, et al Enhancing performance and sport injury prevention in disability sport: moving forwards in the field of footballBritish Journal of Sports
- Barfield JP. Williams S. Curle MR. Guo X. Evidence-Based Classification in Powerchair Football: Determining the Determinants. Adapt Phys Activ Q. 2022 Apr 1;39(2):197-213. doi:
- dos Santos Andrade; M. A.M. Fleury, and AC da Silva, "Isokinetic muscular strength of Paralympic athletes with cerebral palsy (CP) from the Brazilian soccer team." Revista brasileira de medicina do esporte 11.5 (2005): 281–285. Web.
- Ferrard, M.S., Peterson, C.L. Injuries to Athletes With Disabilities. 30, 137–143 (2000). https://doi-org.ezproxy.galter.northwestern.edu/10.2165/00007256-200030020-00006
- Ferrara M. Buckley WE. McCann BC, et al. The injury experience of the competitive athlete with a disability; prevention implications, Med Sci Sports Exerc 1992;24;184–8.
- Ferrard, M. S., Palutsis, G. R., Snouse, S., & Davis, R. W. (2000). A longitudinal study of injuries to athletes with disabilities. International journal of sports medicine, 21(03), 221-224.
- García-Pinillas F. Ruiz-Ariza A. Moreno del Castillo R. Latorre-Román PA. Impact of limited hamstring flexibility on vertical jump, kicking speed, sprint, and gaility in young football
- Samonales, J. M., Muñoz-Jiménez, J., Gómez-Carmona, C. D., & Ibáñez, S. J. (2021). Comparative external workload analysis based on the new functional classification in
- Proquest Dissertations Publishing, 2021. Print.
- Pastor D, Campavo-Piernas M, Pastor JT, Reina R. A mathematical model for decision-making in the classification of para-fabtballers with different severity of coordination
- Reina, Raúl et al. "How Does the Ball Influence the Performance of Change of Direction and Sprint Tests in Para-Footballers with Brain Impairments? Implications for Evidence-Based Classification in CP-Football." PloS one 12.11 (2017): e0187237–e0187237. Web.
- Reina R. Iturricastillo A, Castillo D, Urbán T, Yanci J. Activity limitation and match load in para-footballers with cerebral palsy. An approach for evidence-based classification.

- Stølen T. Chamari K. Castaana C. Wisløff U. Physioloay of soccer: An update, Sports Med, 2005: 35 (6): 501–536, PMID: 15974635
- Weiler, R., Van Mechelen, W., Fuller, C., & Verhagen, E. (2016). Sport injuries sustained by athletes with disability: a systematic review. Sports medicine, 46(8), 1141-1153.
- West: Liam Richard et al., "Management of Concussion in Disability Sport: a Different Ball Game?" British journal of sports medicine 51.14 (2017): 1050–1051. Web.

Reina, R. (2014). Evidence-based classification in paralympic sport: Application to football-7-a-side. European Journal of Human Move



Eligibility Classification:

CP Soccer is one of the oldest forms of soccer for players with disabilities, having been played since the 1980s, and predominantly features players **with Cerebral Palsy, stroke or traumatic brain injuries.** The team has frequently featured a number of U.S. military veterans through the years. In 2022, a Women's program was launched for the first time worldwide, and the USA won the initial IFCPF Women's World Cup in Spain (at a competition in which the U.S. MNT finished in the top 4 for the first time).

To be eligible for selection by a member country, athletes must be fifteen (15) years of age on the 1st of January 2023 Athletes must be born before 1st January 2008. Any competitor participating in IFCPF sanctioned tournaments must be a national of the country of the IFCPF Member Organization which is entering such competitor, in line with the IFCPF Athlete Nationality Policy.

Athletes competing in CP Football have an impairment that leads to a competitive disadvantage in sport. Athletes competing in CP Football have Ataxia, Hypertonia or Athetosis - three impairment types that are most commonly associated with individuals having neurological impairment, with a motor control impairment of a cerebral nature, causing a permanent and verifiable Activity Limitation.

CP Football includes 3 classes, called FT1, FT2, and FT3. As CP Football is a team sport, classification aims at ensuring fairness with regard to the impact of impairment between both teams.

To accomplish this, the players are firstly allocated one of three sport classes. In order to ensure a fair game between two teams, each team (seven players) has to have one FT1 player on the field at all times and is not allowed to have more than one FT3 players on the field. Women each team has (five players).

https://lfcpf.com

Power Soccer is the first competitive team sport designed and developed specifically for power wheelchair users. It gives an opportunity to people with an array or different disabilities, including athletes with quadriplegia, multiple sclerosis, muscular dystrophy, Cerebral Palsy and many others. The co-ed U.S. team will compete in the FIPFA Powerchair Football World Cup in 2023 in Australia.

Levels of fitness, age, cognition, gender or skill, are not factors in classification. The assessment needs to focus on the functional performance of the presenting athlete in relation to Powerchair Football, and their ability to play the sport safely. Players must be <u>at least 5 years of age</u> and must have adequate control of their powerchairs.

Powerchair Football can include athletes with: -

Neurological conditions such as; Cerebral Palsy, Traumatic Brain injury, Stroke, Frederic's Ataxia, progressive neurological conditions. - Orthopaedic Disorders such as; Arthritis – all four extremities, Atrhrogryphosis, some types of Dwarfism, brittle bone disease (Osteogenesis-Imperfecta). - Amputations, congenital or acquired, where there is 3 or 4 limb involvement above the knee and elbow, or double upper limb amputation above the elbow. - Myopathies such as; Muscular Dystrophies, Spinal Muscular Atrophy, Amyotonia Congenita. - Spinal cord injury such as; Polio, Guillame-Barre, Tetrapelgia

Every athlete eligible to take part in a Competition must be allocated a Sport Class (PF1 or PF2) PF1 :This denotes a player who has highly significant levels of physical difficulty which affects their overall performance.

PF2 : This denotes a player who has moderate to mild levels of physical difficulty which affects their overall performance.

Each team must field a maximum of two PF2 sport class players during a match for all FIPFA designated competitions. There is no restriction in the combination of sport classes within the playing squad of a team

Teams shall consist of 4 players with up to 4 substitute players The match consists of two equal periods of 20 minutes.

Powerchair must have 4 or more wheels \cdot 3 or 4-wheeled scooters or similar equipment are not permitted \cdot The maximum speed allowable during the match for powerchairs is 10 kph (6.2 mph), forwards and reverse. \cdot Backpacks, bags, etc. are not allowed to be attached to powerchairs during play (essential equipment accepted e.g. Oxygen / feeds / ventilators etc.) \cdot chairs must not have any sharp surfaces or items that might become entangled with other powerchairs (inc. essential equipment) \cdot chest/shoulder/head restraints are required equipment for those athletes who need them \cdot no part of the chair shall be constructed so as to be able to trap or hold the ball \cdot additions should be placed on the powerchair which prevent the wheels from trapping, holding, or riding over the ball

https://fipfa.org/

email <u>extendedNT@ussoccer.org</u> for more information about US Soccer & CP Soccer or Power Soccer

Amputee Soccer was codified by Don Bennett of Seattle, WA in the 1980s. The game is played by athletes living with upper and/or lower extremity limb differences on a 3/4 size pitch with seven players to a side. The official format for international match play and competition game is 6 v 6 + keepers. Field players use forearm crutches and may play the ball with only one leg. Keepers defend a 7'x16' goal and may only use one arm.

Amputee Soccer is governed by the <u>American Amputee Soccer Association</u> (AASA) domestically and the World Amputee Football Federation (WAFF) internationally. The Amputee Football World Cup is played every 4 years with 24 nations. To be eligible for international amputee soccer play, players must be at least 16 years of age and must have either an upper or lower extremity limb difference.

References:

Ahmed OH, Hussain AW, Beasley I, et al Enhancing performance and sport injury prevention in disability sport: moving forwards in the field of footballBritish Journal of Sports Medicine 2015;49:566-567.

Barfield JP, Williams S, Currie MR, Guo X. Evidence-Based Classification in Powerchair Football: Determining the Determinants. Adapt Phys Activ Q. 2022 Apr 1;39(2):197-213. doi: 10.1123/apaq.2021-0081. Epub 2021 Nov 5. PMID: 34740988.

Bloomfield J, Polman R, O'Donoghue P. Physical Demands of Different Positions in FA Premier League Soccer. J Sports Sci Med. 2007 Mar 1;6(1):63-70. PMID: 24149226; PMCID: PMC3778701.

dos Santos Andrade, M, A M Fleury, and AC da Silva. "Isokinetic muscular strength of Paralympic athletes with cerebral palsy (CP) from the Brazilian soccer team." Revista brasileira de medicina do esporte 11.5 (2005): 281–285. Web.

Ferrara, M.S., Peterson, C.L. Injuries to Athletes With Disabilities. 30, 137–143 (2000). https://doi-org.ezproxy.galter.northwestern.edu/10.2165/00007256-200030020-00006

Ferrara M, Buckley WE, McCann BC, et al. The injury experience of the competitive athlete with a disability: prevention implications. Med Sci Sports Exerc 1992;24:184–8.

Ferrara, M. S., Palutsis, G. R., Snouse, S., & Davis, R. W. (2000). A longitudinal study of injuries to athletes with disabilities. *International journal of sports medicine*, *21*(03), 221-224.

García-Pinillos F, Ruiz-Ariza A, Moreno del Castillo R, Latorre-Román PA. Impact of limited hamstring flexibility on vertical jump, kicking speed, sprint, and agility in young football players. J Sports Sci. 2015;33(12): 1293–1297.

Gamonales, J. M., Muñoz-Jiménez, J., Gómez-Carmona, C. D., & Ibáñez, S. J. (2021). Comparative external workload analysis based on the new functional classification in cerebral palsy football 7-a-side. A full-season study. *Research in Sports Medicine*, 1-13.

Karnala, Siddharth. "Inclusion in the Paralympics: Incorporation of Power Soccer for Redefining Disability Rhetoric in Society." ProQuest Dissertations Publishing, 2021. Print.

Pastor D, Campayo-Piernas M, Pastor JT, Reina R. A mathematical model for decision-making in the classification of para-footballers with different severity of coordination impairments. J Sports Sci. 2019 Jun;37(12):1403-1410. doi: 10.1080/02640414.2018.1560617. Epub 2018 Dec 24. PMID: 30583709.

Reina, Raúl et al. "How Does the Ball Influence the Performance of Change of Direction and Sprint Tests in Para-Footballers with Brain Impairments? Implications for Evidence-Based Classification in CP-Football." PloS one 12.11 (2017): e0187237–e0187237. Web.

Reina R, Iturricastillo A, Castillo D, Urbán T, Yanci J. Activity limitation and match load in para-footballers with cerebral palsy: An approach for evidence-based classification. Scand J Med Sci Sports. 2020 Mar;30(3):496-504. doi: 10.1111/sms.13583. Epub 2019 Nov 24. PMID: 31657483.

Shrier I. Strategic assessment of risk and risk tolerance (StARRT) framework for return-to-play decision-making. Br J Sports Med 2015;49:1311–5.

Stølen T, Chamari K, Castagna C, Wisløff U. Physiology of soccer: An update. Sports Med. 2005; 35 (6): 501–536. PMID: 15974635

Weiler, R., Van Mechelen, W., Fuller, C., & Verhagen, E. (2016). Sport injuries sustained by athletes with disability: a systematic review. *Sports medicine*, *46*(8), 1141-1153.

West, Liam Richard et al. "Management of Concussion in Disability Sport: a Different Ball Game?" British journal of sports medicine 51.14 (2017): 1050–1051. Web.

•Aytar, A., Pekyavas, N. O., Ergun, N., & Karatas, M. (2012). Is there a relationship between core stability, balance and strength in amputee soccer players? A pilot study. *Prosthet Orthot Int, 36*(3), 332-338. doi:10.1177/0309364612445836

•Aytar, A., Zeybek, A., Pekyavas, N. O., Tigli, A. A., & Ergun, N. (2015). Scapular resting position, shoulder pain and function in disabled athletes. *Prosthet Orthot Int*, *39*(5), 390-396. doi:10.1177/0309364614534295

•Gunaydin, G. (2021). The relationship between scapular endurance and core endurance in elite amputee football players. *Baltic Journal of Health and Physical Activity, 13*(1), 1-8. doi:10.29359/BJHPA.13.1.01

•Kasinska, Z., & Tasiemski, T. (2017). Determinants of sports injuries in amputee football: Initial analysis. *Trends in Sport Sciences*, 2(24), 73-79.

•Kasprzyk, A., Z., K., D., N., & M., G. (2021). Analysis of athletic injuries, biomechanical aspects and sports performance in amputee soccer – a systematic review. *British Journal of Sports Medicine, 55*. doi:10.1136/bjsports-2021-IOC.386

•Lamberg, E., & Pierre-Glaude, J. (2021). Athletic ability in the sport of amputee soccer. *Soccer & Society, 23*(1). doi:https://doi.org/10.1080/14660970.2021.1908269

•W., J., W., A., B., J., G., P., Ś., R., & T., T. (2017). Sport injuries in elite amputee football players. *Central European Journal of Sport Sciences and Medicine*, 10(2), 13-22. doi:10.18276/cej.2017.2-02

•Yazicioglu, K., Taskaynatan, M. A., Guzelkucuk, U., & Tugcu, I. (2007). Effect of playing football (soccer) on balance, strength, and quality of life in unilateral below-knee amputees. *Am J Phys Med Rehabil, 86*(10), 800-805. doi:10.1097/PHM.0b013e318151fc74