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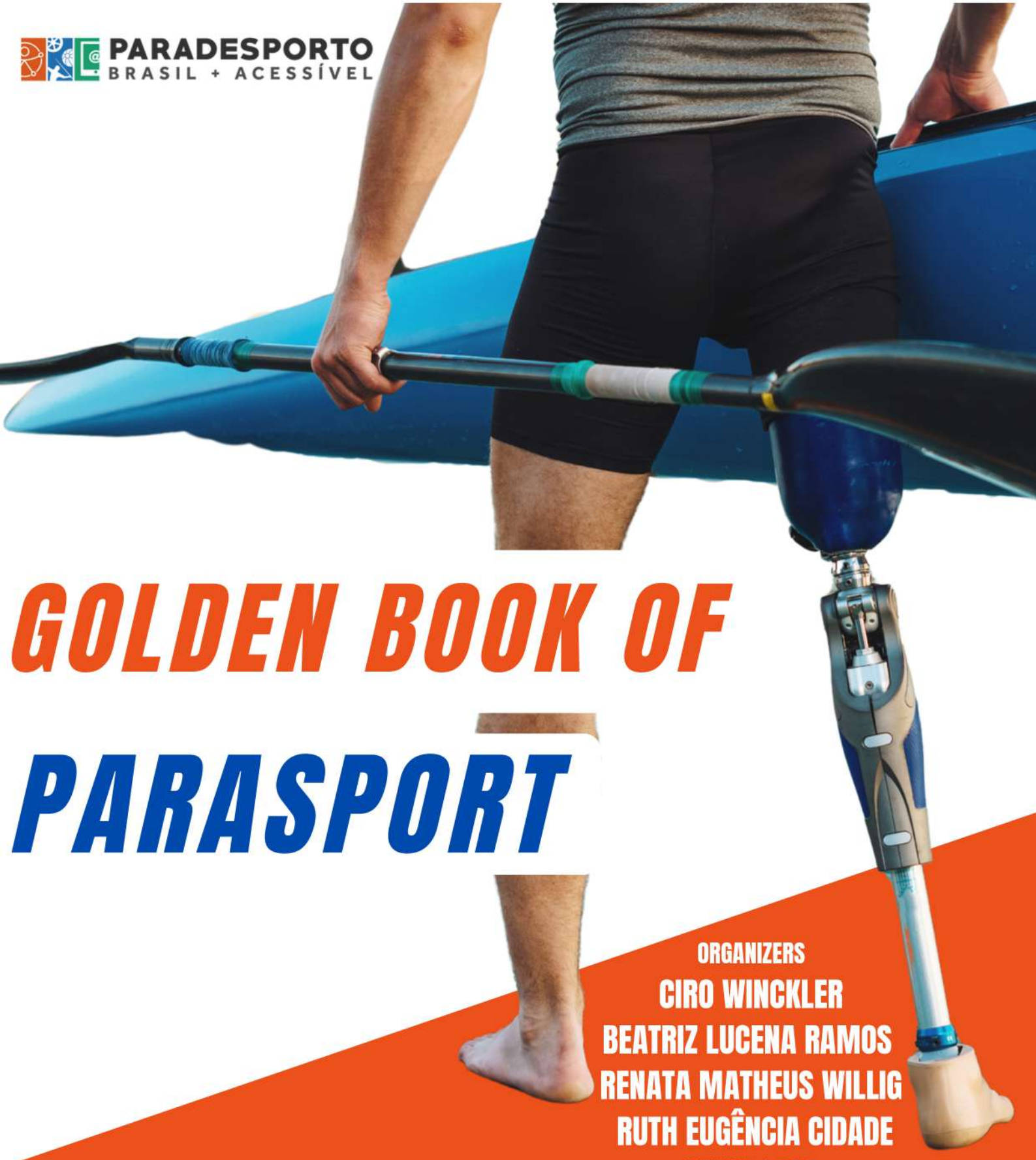

GOLDEN BOOK OF PARASPORT

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W762L

Winckler, Ciro

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SUMMARY

INTRODUCTION

The Golden Book of Parasport compiles reviews and updates information from the series of Parasport Manuals released by the Parasport Brazil + Accessible Project throughout 2022 and 2023. Revisiting the material allowed us to identify the evolution of knowledge throughout this work cycle and was necessary because Parasport is dynamic. Updates occurred quickly, and in less than a year, new knowledge was identified that needed to be incorporated into the material. Furthermore, during the manuals' publication, the results of the Brazilian 2022 Demographic Census were released, thus requiring ratification of the information.

Throughout the ten chapters, the book addresses the disciplines and concepts of Parasport, defines it, and explores strategies for its ongoing development. Furthermore, it discusses the different characteristics of classification in Parasport and offers a glossary of Parasport for consultation.

It is not enough to define or reframe the terms used but also to point out paths. A path begins with identifying 201 possibilities for practicing Parasport in 89 disciplines.

This book uses infographics and short texts to connect the biopsychosocial approach to Parasports interventions. We attempted to use simple and accessible language for different groups and people.

Finally, we hope to address different practice scenarios that are often not part of our training in physical education or other areas of health.

Have an excellent read!

CIRO WINCKLER

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DEFINING THE PARASPORT

Authors: Winckler, Ciro; Cidade, Ruth E.; Ferreira, Mariane; Melo, Geiziane L.; Lima-Trigo, Elke; Willig, Renata Matheus.

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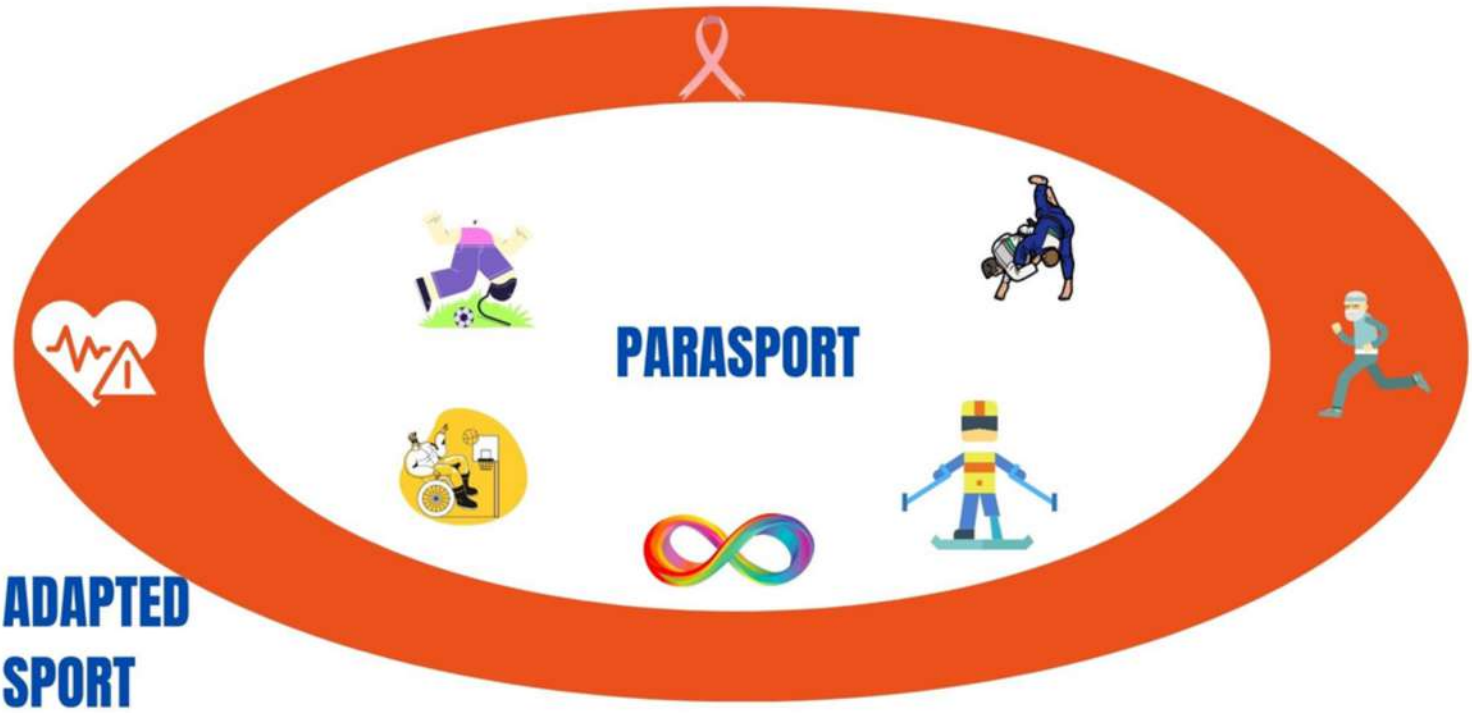
WHAT IS THE DIFFERENCE BETWEEN ADAPTED SPORT AND PARASPORT?

The best way to answer this question is to think about the concept of sets, in which a group of things can contain a smaller one. In this sense, Adapted Sport is the larger set that covers the sporting practices of the elderly, people with heart disease, cancer, among many others, which will have as a smaller set included in the larger one, Parasport, in which there will be the disciplines practiced by people with disabilities. Disciplines have recently been established to include people with Autism Spectrum Disorder.



Want to know more

Adaptive Sport

WINNICK, J. P., & PORRETTA, D. L. (Eds.). **Adapted Physical Education and Sport** (6th ed.). Champaign: Human Kinetics Publishers: . 2016

Winckler, C. A pedagogia do paradesporto e seus cenários Available at https://youtu.be/s1_QcVBOORA. Accessed: November 20, 2022.

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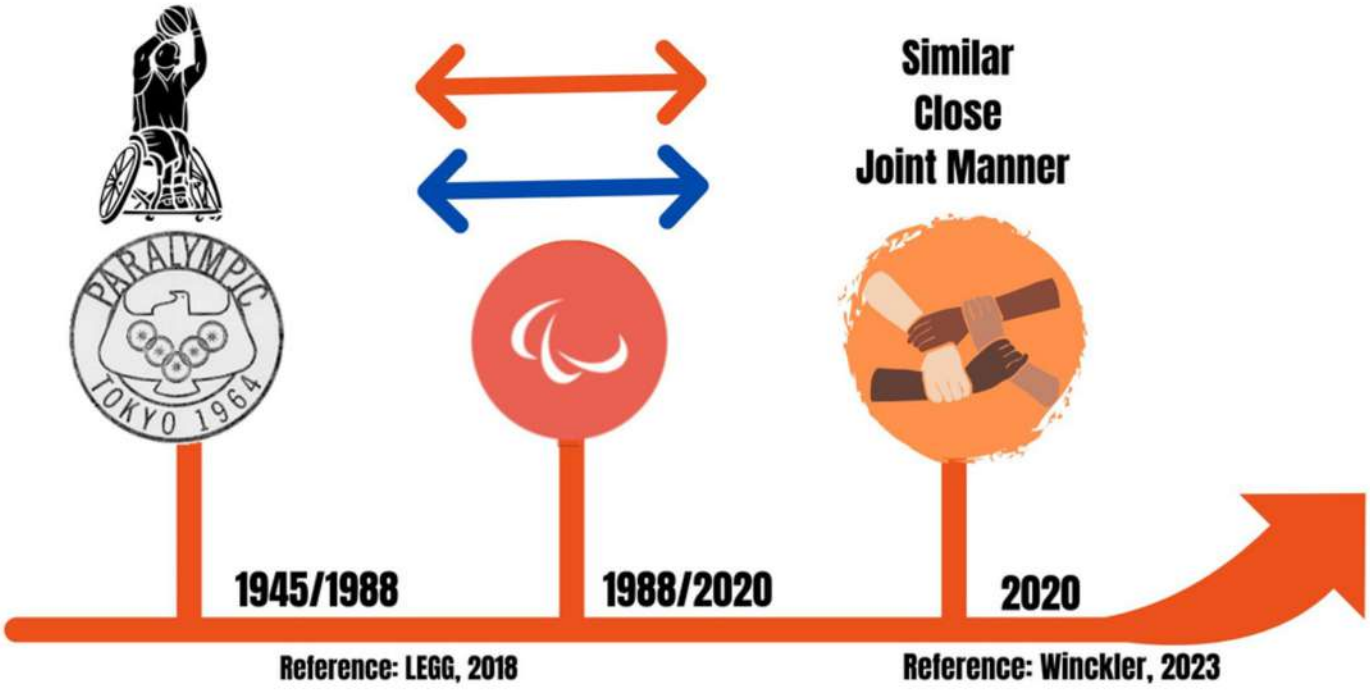
HOW CAN WE DEFINE PARASPORT?

The construction of the word Parasport is based on the combination of the prefix PARA with SPORT. Throughout history, the use of this prefix has had different meanings. In the first editions of the Paralympic Games, this was associated with people who had PARAPLEGIA as a result of spinal cord injury, as it was the only type of disability in those Games. With the incorporation of other impairments, this began to denote that the Paralympic Games were a PARALLEL event to the Olympic Games (Bailey, 2008).



However, we believe that the meaning of Parasport historically limits it's use! Therefore, we argue that the word Parasport should allow possibilities that lead to pedagogical adjustments, bearing in mind that sport for persons with disability is not parallel, but is similar to and occurs closely and jointly with other manifestations of sport.

Want to know more

Winckler, C. A pedagogia do paradesporto e seus cenários. Available at https://youtu.be/s1_QcVBOORA. Accessed: November 20, 2022.

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WHO IS PART OF PARASPORT?

When we think of Parasport as a broad concept, whole of diversity and possibilities, it allows us to understand that multi-sport movements such as Paralympic Games, Deaflympics, and Special Olympics, among others, are all a part of this scenario. This perspective also encompasses sports organized in their own specific way, such as golf, skateboarding, handball, surfing, amputee football, and many others, that may not be official sports within more significant multi-sport events.

Want to know more

Winckler, C. et al. **Paradesporto : Modalidades e Conceitos**. Santos: Paradesporto Brasil + Acessível, 2022.

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PARASPORT AND ITS MANIFESTATIONS

Parasport can also have different forms and purposes in its practice, allowing us to visualise different paths to entry into sport.

Sport can be developed for health, whether from the perspective of rehabilitation or maintenance of an individual's health. Sport can also have The educational connections manifested through the teaching-learning process.

Reference: Costa, Winckler, 2012

Leisure Parasport is where a person participates in their free time for pleasure. In contrast, Performance Parasport focused on high-performance and focusing on competition.

Each of these scenarios then requires the development and understanding of unique pedagogical approaches for practitioners.

Want to know more

Costa, A. M; Winckler, C. A educação Física e o Esporte Paralímpico in: Mello, M. T.; Winckler, C. **Esporte Paralímpico**. Atheneu: São Paulo, 2012.

Cidade, R. Toloi, G; Mauerberg-deCastro, E.. Esporte para deficientes: do alto rendimento ao esporte de Participação. In Mauerberg-deCastro, E. . **Atividade Física Adaptada**. Ribeirão Preto: Tecmed. 2005.

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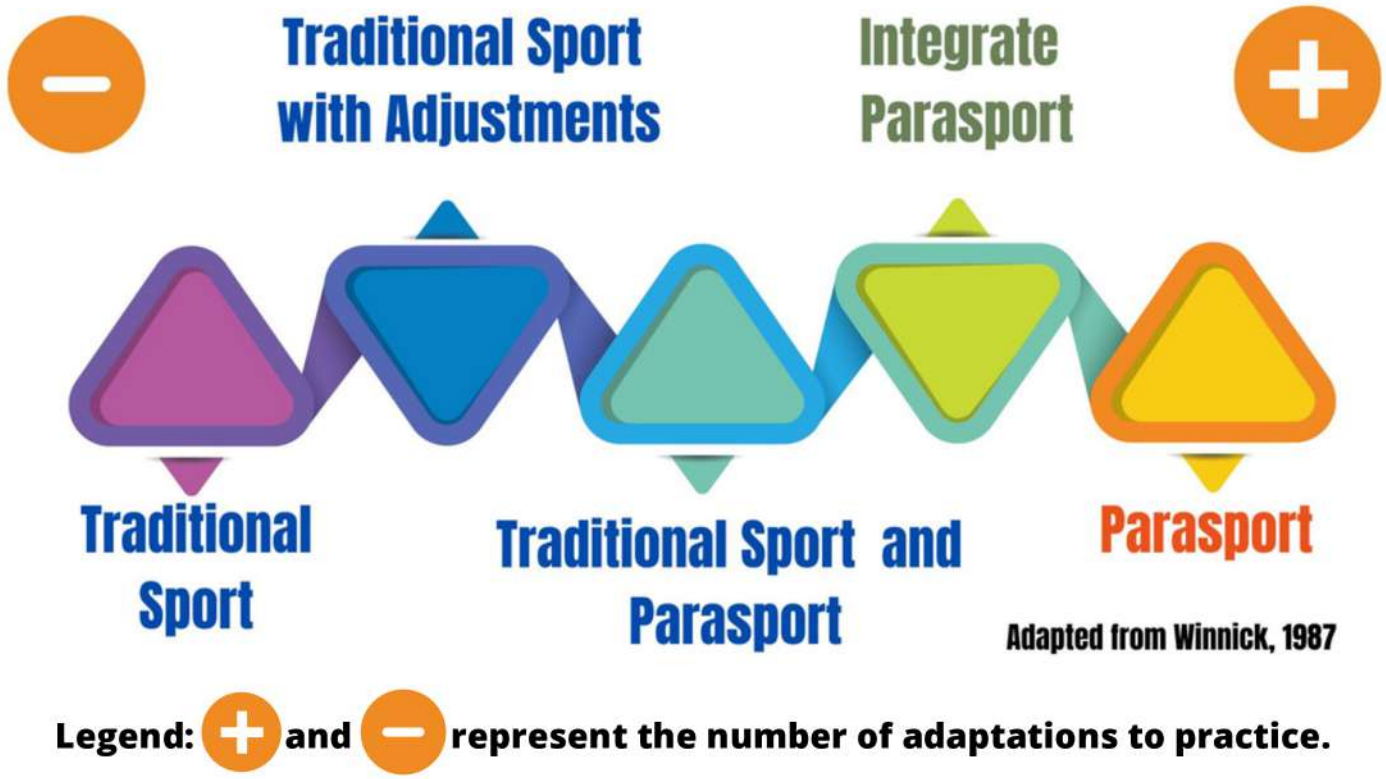
WHAT METHODS CAN BE EMPLOYED TO INCLUDE PEOPLE WITH DISABILITIES IN PARASPORT?

We can comprehend how to incorporate people with disabilities into sports through adaptations of rules or pedagogical approaches that facilitate their participation. In this way, we have the person's participation in traditional sport, as the one that requires the least amount of adjustments, and the participation in Parasport, practiced only by people with disabilities, as the one with the greatest number of adaptations that are necessary.



Legend: + and − represent the number of adaptations to practice.

Between these extremes we would have the following variations:

- **Traditional Sport with Adjustments -** people with disabilities compete in traditional sport with minor adjustments permitted by rule or regulation, for example, a blind athlete using a guide in a marathon.
- **Traditional Sports and Parasports -** the athlete competes part of his time in traditional sports and the other in Parasports.
- **Integrated Parasport -** Athletes without disabilities can compete in Parasport using wheelchairs or in Special Olympics unified sport.

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THE FIRST REPORTS

The first record of people with disabilities playing sports was presented by Charles Dickens (1861), who describes the regular practice of cricket games at the Royal Hospital for Sailors in Greenwich. The teams were divided between patients with arm amputation versus those with leg amputation. The sailors were injured in combat during the Napoleonic Wars that took place between the end of the 18th and beginning of the 19th century.

Royal Hospital for Seamen at Greenwich
1796 / 1848

source: DICKENS, 1861

Want to know more

Parsons, A.; Winckler, C.. Esporte e a pessoa com deficiência- contexto histórico. In Mello, M. T.; Winckler, C. **Esporte Paralímpico**. Atheneu: São Paulo, 2012 p. 3–14.

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TIMELINE OF GLOBAL EVENTS

1838

Physical Activity for People with blindness, Boston/USA (1)

1870

Implementation of Pehr Henrik Ling Medical Gymnastics (2)

1880

Foundation of the first football clubs for the deaf in Scotland (3)

1904

Geoger Eyser, athlete with leg amputation wins 6 medals at the Olympic Games (4)

1924

DEAFLYMPICS

International Committee on Sports for the Deaf (5)

1944

Sport in Rehabilitation Stoke Mandeville in UK (6)

1960

First edition of the Paralympic Games (7)

1968

Special Olympics

Creation of the Special Olympics Movement (8)

1973

Implementation of the term Adapted Physical Activity (9)

1976

TORONTOLYMPIAD 1976

Impairments other than spinal cord injuries included in the Paralympic Program (10)

1989

Creation of the International Paralympic Committee (11)

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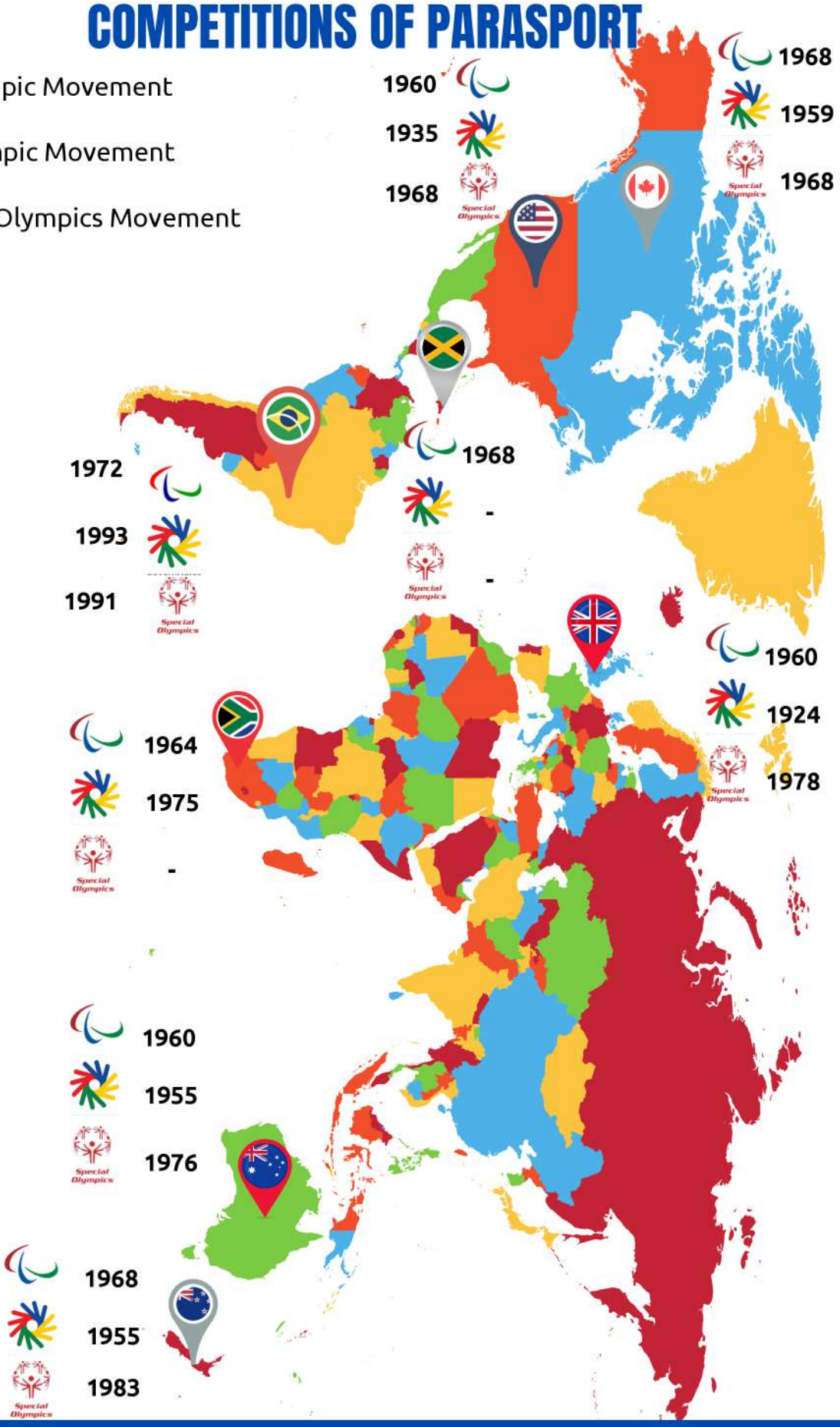
CHRONOLOGY OF INVOLVEMENT IN THE MAJORS COMPETITIONS OF PARASPORT

Paralympic Movement

Deaflympic Movement

Special Olympics Movement



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(3) ATHERTON, M.; RUSSELL, D.; TURNER, G. **Playing to the flag: A history of deaf football and deaf footballers in Britain**. [s.l: s.n.]. v. 19.

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PARASPORT: DISCIPLINES AND THEIR CONCEPTS

Authors: Winckler, Ciro; Cidade, Ruth E.; Ferreira, Mariane; Melo, Geiziane L.; Lima-Trigo, Elke; Willig, Renata Matheus.

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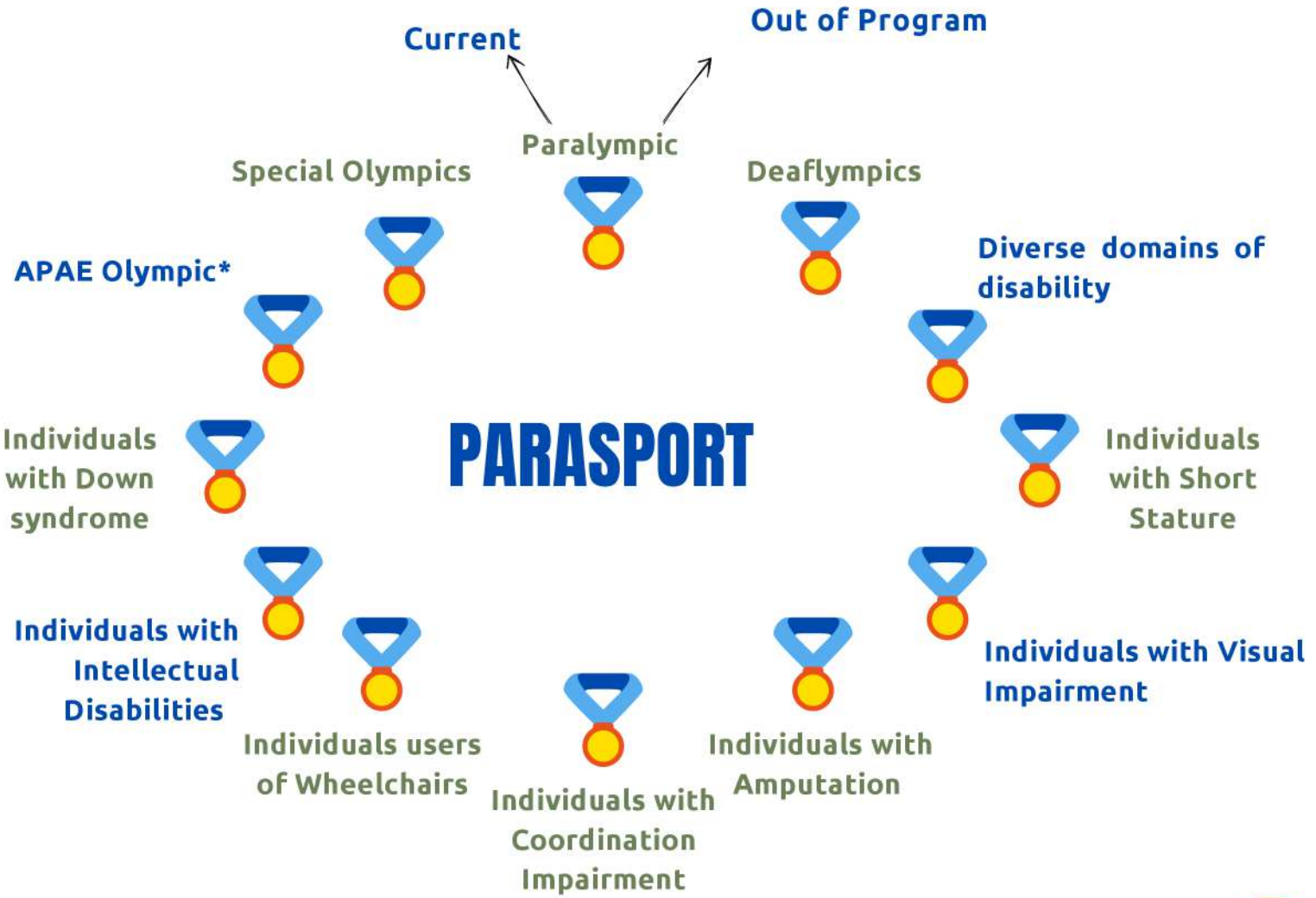
WHAT ARE THE DISCIPLINES OF PARASPORT?

This inquiry emerged to address a fundamental question. In this context, we will present the disciplines that, after extensive research, we identified as those systematically practiced by people with disabilities within the Parasport system.

Here, it is worth introducing how the data will be presented in the following pages!

The sports will be categorized by multi-sport movements and organizations according to the area of disability. In the case of Paralympic disciplines, they were included within this universe rather than under their specific disability sports, such as Blind Football or Boccia in the Paralympic movement, as well as various sports and movements for individuals with intellectual impairments. For the Deaflympics movement, we included both the disciplines featured in the Deaflympics program and others not included in this competition.



*Association of Parents and Friends of People with Disabilities - Brazilian organization

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DISCIPLINES A THROUGH B

	Paralympic	PG	Special	Deaf	APAE	II	DS	WC	VI	Amp	Multi	CI	SS
American Football								X					
Alpine Skiing	X		X	X		X							
Archery	X												
Arm Wrestling										X			
Artistic Gymnastics			x	x	x		x						
Athletics	X		X	X	X	X	X						X
Badminton	X		X	X									X
Basketball	X		X	X	X		X						X
Basketball 3×3			X					X					
Baseball									X				
Beach soccer				X									
Beach Volleyball			X										
Biathlon	X												
Blind football	X												
Bobsled								X			X		
Boccia	X		X		X				X				X
Bodybuilding											X		
Bowling			X	X					X				
Boxing											X		

Legend:

Paralympic ..... Disciplines of the Current Paralympic Program
PG ..... Disciplines that are no longer in the Paralympic Program
Special ..... Disciplines of the Special Olympics movement
Deaf ..... Disciplines of the Deaflympics movement
APAE ..... Disciplines of the APAE Olympics
II ..... Disciplines for Individuals with Intellectual Impairment
DS ..... Disciplines for individuals with Down Syndrome
WC ..... Disciplines for individuals in Wheelchair
VI ..... Disciplines for Individuals with Visual Impairments
AMP ..... Disciplines for individuals with Amputations
Multi..... Disciplines for multiple Areas of Disability
CI ..... Disciplines for individuals with Coordination impairment
SS .....Disciplines for individuals with Short Stature

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DISCIPLINES C - F

	Paralympic	PG	Special	Deaf	APAE	II	DS	WC	VI	Amp	Multi	CI	SS
Canoeing	X		X										
Capoeira					X								
Checkers					X								
Chess				X					X				
Climbing								X					
Cricket			X	X		X		X				X	
Cross-country Skiing	X		X	X									
Crossfit								X					
Curling	X			X									X
Cycling	X		X	X		X							
Dancesport			X					X			X		
Dart		X						X					
Diving				X									
Dominoes					X								
Eletronic Sports								X					
Equestrian	X		X										
Fencing	X												
Figure Skating			X										
Floorball			X										X
Floor Hockey			X										
Football			X	X		X	X	X		X		X	X
Freesbee								X					
Futsal				X	X				X				
7-a-side Football		X		X	X								

Legend:

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DISCIPLINES G - O

	Paralympic	PG	Special	Deaf	APAE	II	DS	WC	VI	Amp	Multi	CI	SS
Goalball	X												
Golf			X	X		X						X	
Handball			X	X	X			X					
Weightlifting		X											
Hockey						X		X					
Ice Hockey	X			X									
Jiu-Jitsu											X		
Judo	X		X	X		X	X				X		
Kayaking								X					
Karate				X							X		
Kart											X		
Kung Fu											X		
Lawn Bowls		X						X					
Mixed Martial Arts											X		
Mountain bike				X									
Netball		X											
Orienteering				X									

Legend:

Paralympic ..... Disciplines of the Current Paralympic Program
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DISCIPLINES P - S

	Paralympic	PG	Special	Deaf	APAE	II	DS	WC	VI	Amp	Multi	CI	SS
Pentathlon		X									X		
Polybat												X	
Powerlifting	X		X						X				X
Rhythmic Gymnastics			X		X								
Rowing	X					X							
Rugby	X			X									
Sailing		X	X			X		X					
Showdow									X				
Shooting	X			X									X
Slalon								X				X	
Skate								X			X		
Skeleton											X		
Snoker		X						X					
Snowboard	X		X	X									
Softball			X										
Speed Skating			X					X					
Street Racing													
Surf											X		
Swimming	X		X	X			X						X
Synchronized Swimming											X		

Legend:

Paralympic ..... Disciplines of the Current Paralympic Program
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DISCIPLINES T - Z

	Paralympic	PG	Special	Deaf	APAE	II	DS	WC	VI	Amp	Multi	CI	SS
Table Tennis	X		X	X	X								X
Taekwondo	X			X		X			X				
Takkyu Volley									X				
Tennis	X		X	X			X		X				
Torball									X				
Triathlon	X		X										
Volleyball	X		X	X					X				X
Wrestling Greco-Roman		X		X									
Wrestling Freestyle				X									

Legend:

Paralympic ..... Disciplines of the Current Paralympic Program
PG ..... Disciplines that are no longer in the Paralympic Program
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Multi..... Disciplines for multiple Areas of Disability
CI ..... Disciplines for individuals with Coordination impairment
SS .....Disciplines for individuals with Short Stature

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89 LISTED SPORTS

Sports, when practiced by people with disabilities, sometimes have unique characteristics that transform them into a larger group of Parasports disciplines.

201 DISCIPLINES IN PARASPORT

We can give some examples that illustrate this diversity well and could not be presented in the division of disciplines by disability groups or sports organization!

An example is wheelchair football, there are two variations: one played in motorized chairs for athletes with severe disabilities (Powersoccer) and another played in sports chairs without motorized propulsion.
The etiology may be the same, but the degree of motor impairment varies significantly.

In **amputee football**, there exists a variant where players use crutches and there is another where athletes compete while seated on the court. This impacts not only the way players move but also their relationship with the playing space.

In these four examples, the concept of scoring a goal remains the same, yet the **patterns of movement and spatial occupation vary.**

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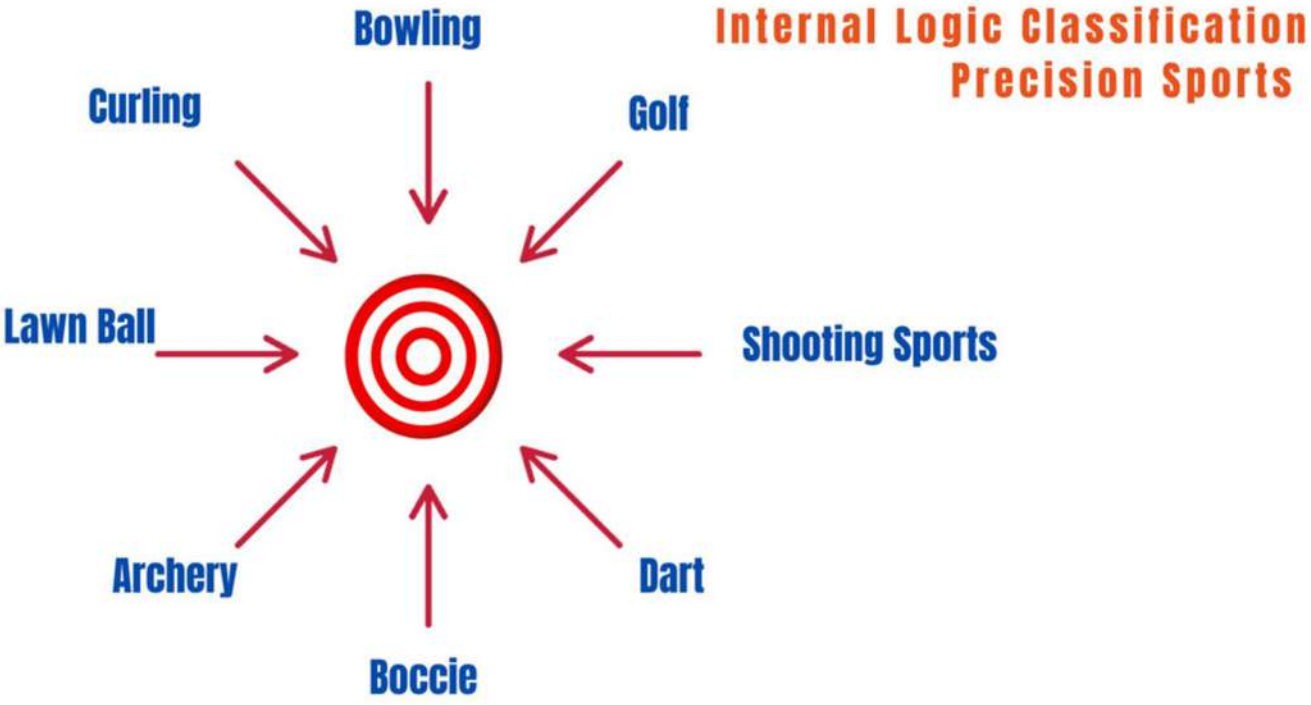
Sports can also be organized according to the internal logic principles of each sport. Here, grouping those that have similar objectives, such as **precision** (e.g., target sports), **mark** (e.g., athletics), **combat** (e.g., judo), **invasion** (e.g., team sports), **net** (e.g., badminton), and **technical-combinatory** (e.g., artistic gymnastics or equestrian).

The following figure illustrates the Parasport disciplines characterized primarily by their internal logic of **precision.**



However, considering the characteristics of disabilities, it leads us to question whether it would be possible to have a unique process for athletes with disabilities, regardless of their functionality.

We can illustrate this with the example of individuals with severe physical disabilities, such as in **Boccia**  or **Bowling** for people with blindness. 

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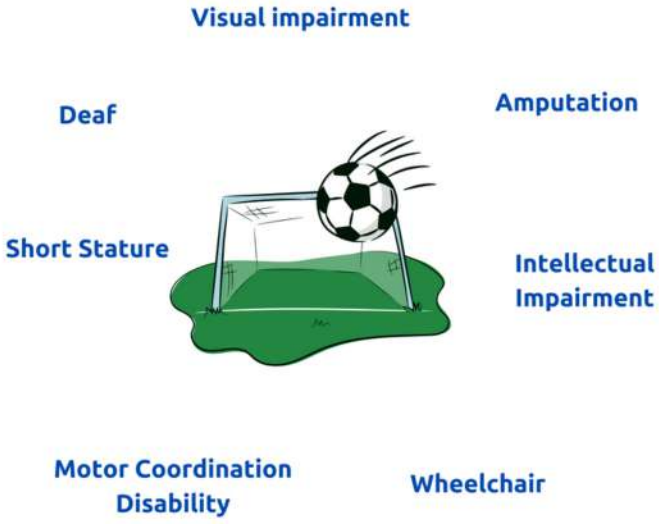
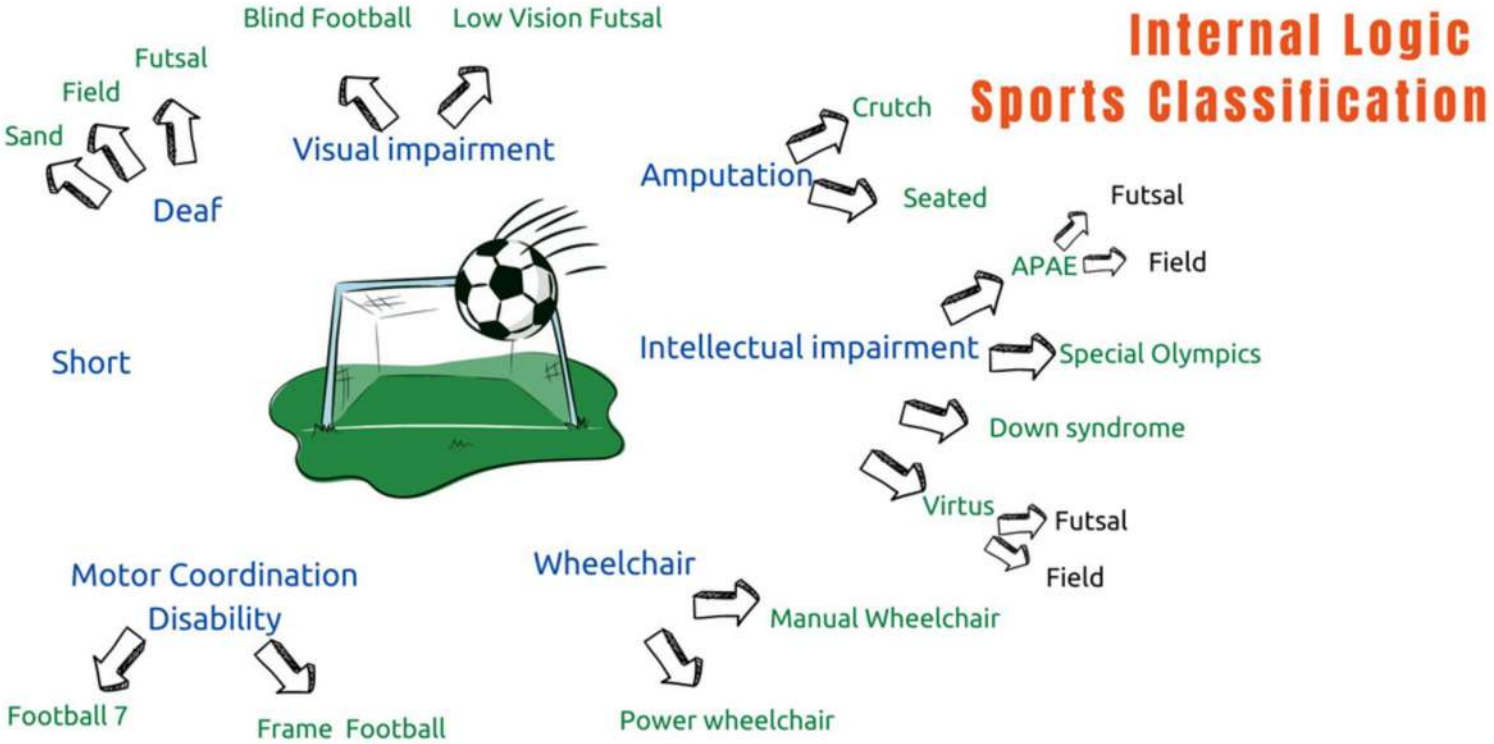
The complexity of Parasports is evident, even when focusing on a single **invasion** sport, such as **football**, which has variations in the playing space (field, court, and sand). In addition to these possibilities, participants can be categorized by etiology; thus, we would have **seven** main groups.



Then, when analyzing how people with different disabilities play sport it becomes apparent that specific equipment is need. Examples could include wheelchairs, crutches, and walkers, while other equipment needs may focus on orientation, such as the bell ball used by athletes with blindness.



Thus, understanding this logic allows for **adapting** and **bringing together** people with different disabilities or needs. It also involves using appropriate pedagogical resources to efficiently integrate the different groups.

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WINNICK, J. P., & PORRETTA, D. L. (Eds.). **Adapted Physical Education and Sport** (6th ed.). Champaign: Human Kinetics Publishers: 2016.

FURTHER RESOURCES

INTERNATIONAL PARALYMPIC COMMITTEE	WWW.PARALYMPIC.ORG
COMITÊ PARALÍMPICO BRASILEIRO	WWW.CPB.ORG.BR
SPECIAL OLYMPICS	WWW.SPECIALOLYMPICS.ORG
SPECIAL OLYMPICS BRASIL	WWW.SPECIALOLYMPICS.ORG.BR
DEAFLYMPICS	WWW.DEAFLYMPICS.COM
DEAF BRAZILIAN SPORTS CONFEDERATION	WWW.CBDS.ORG.BR
DWARF SPORT INT. FED.	WWW. INTERNATIONALDWARFSPORTSFEDERATION.COM
SPORTS UNION FOR ATHLETES WITH DOWN SYNDROME	WWW.SU-DS.ORG
APAES FEDERATION	WWW.APAEBRASIL.ORG.BR
NATIONAL ASSOCIATION OF SPORTS FOR THE DISABLED	WWW.ANDE.ORG.BR
WORLD ABILITYSPORT	WWW.WASF.COM/SPORTS
INTERNATIONAL BLIND SPORT CONFEDERATION	WWW.IBSASPORT.ORG
BRAZILIAN VI SPORT CON FEDERATION	WWW.CBDV.ORG.BR
FÉDÉRATION INTERNATIONALE POWERCHAIR FOOTBALL ASSOCIATION	WWW.FIPFA.ORG/
BRAZILIAN WHEELCHAIR SOCCER ASSOCIATION WHEELCHAIR	WWW.ABFC.ORG.BR/
PARA FOOTBALL	WWW.PARAFOOTBALL.COM/

UNDERSTANDING THE CLASSIFICATION IN PARASPORT

Authors: Winckler, Ciro; Lima-Trigo, Elke; Melo, Geiziane L.; Cidade, Ruth E.; Willig, Renata .

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What is the role of Classification in Parasports?

Classification in Parasports has two essential roles. The first is identifying who is eligible to participate in competitive Parasports (eligibility) and ensuring that the eligible athlete can access this practice. The second is ensuring that the eligible athlete can compete in a specific group of athletes with similar conditions and an equitable situation. Each Parasport has its peculiarities in this process, and throughout this chapter, we will present the main guidelines and concepts for each.

We also need to understand that classification generates numerous discussions, and here we highlight two extremes. On the one hand, we have a positive impact when the athlete is included in Parasports, allowing them to showcase their skills and potential. On the other hand, we have what we consider to be a negative consequence, where athletes with a type of disability who, under the competitive system with its specific rules and norms, are not eligible.

From a **pedagogical** perspective, the coach/teacher must understand that regardless of the outcome of the Classification process, the support of the should be ensured to result in continued participation albeit perhaps in a non competitive environment or in a different activity.

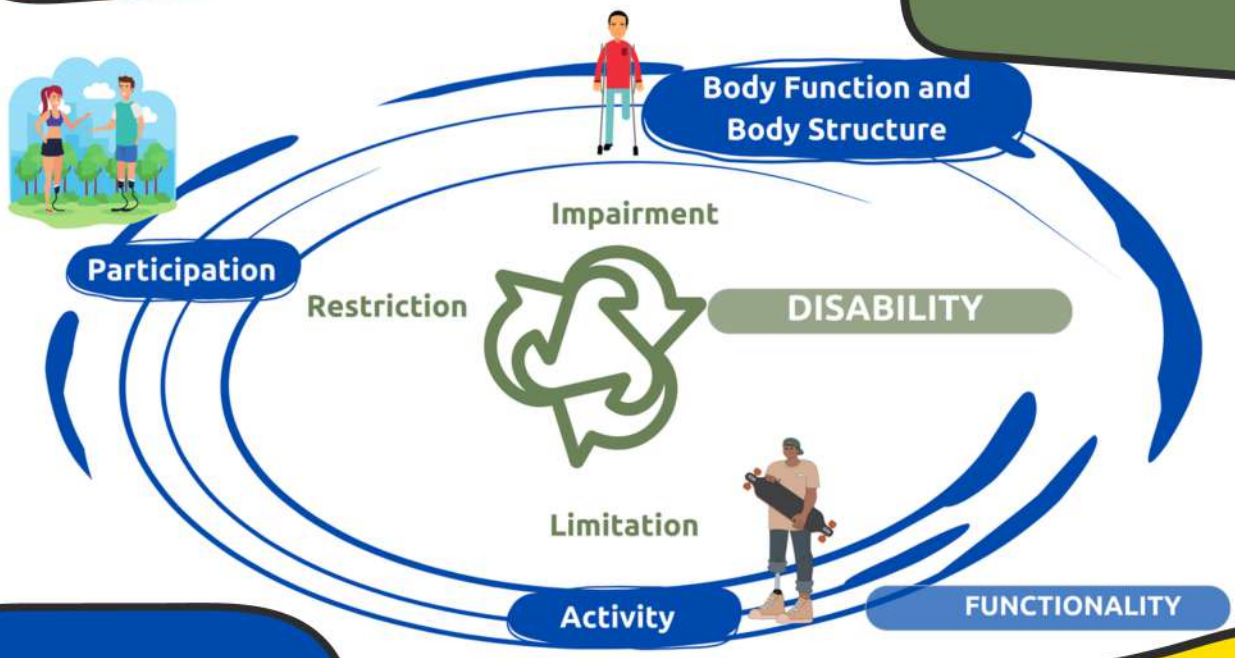
CONCEPTUALIZING DISABILITY

Participation restriction

Challenges that an individual may encounter when engaged in real-life situations.

Impairment

Loss or abnormality of a part of the body (structure) or bodily function (physiological or mental).



Activity limitation

Difficulty an individual may encounter in performing activities.

Disability

It denotes the negative aspects of the interaction between individuals (health) and their contextual individual factors (Environmental and Personal).

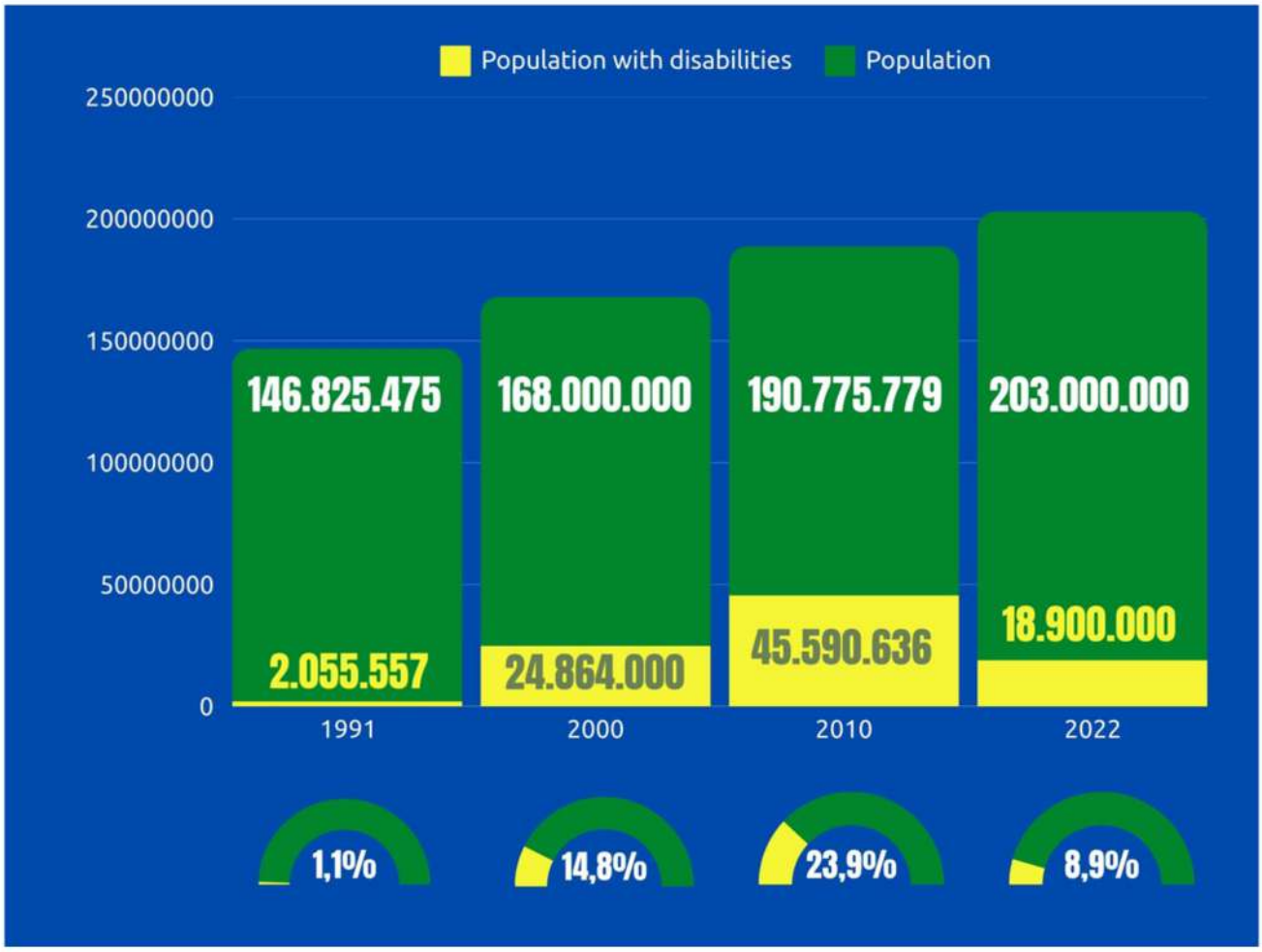
The understanding of these pillars enables comprehension of the **Parasports classification models**, as well as the application of classification tools in everyday pedagogical practice.

Want to know more

Souza, J.P.C. & Miranda, M.M. Classificação esportiva como ferramenta pedagógica. In: Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023.

BRAZILIAN CENSUS AND PEOPLE WITH DISABILITIES

Transitioning from Parasport to a broader context, it is essential to comprehend the concept of disability. There are ways to look at this more closely and the Brazilian Population Census is one of the means to help us better understand the population we serve.



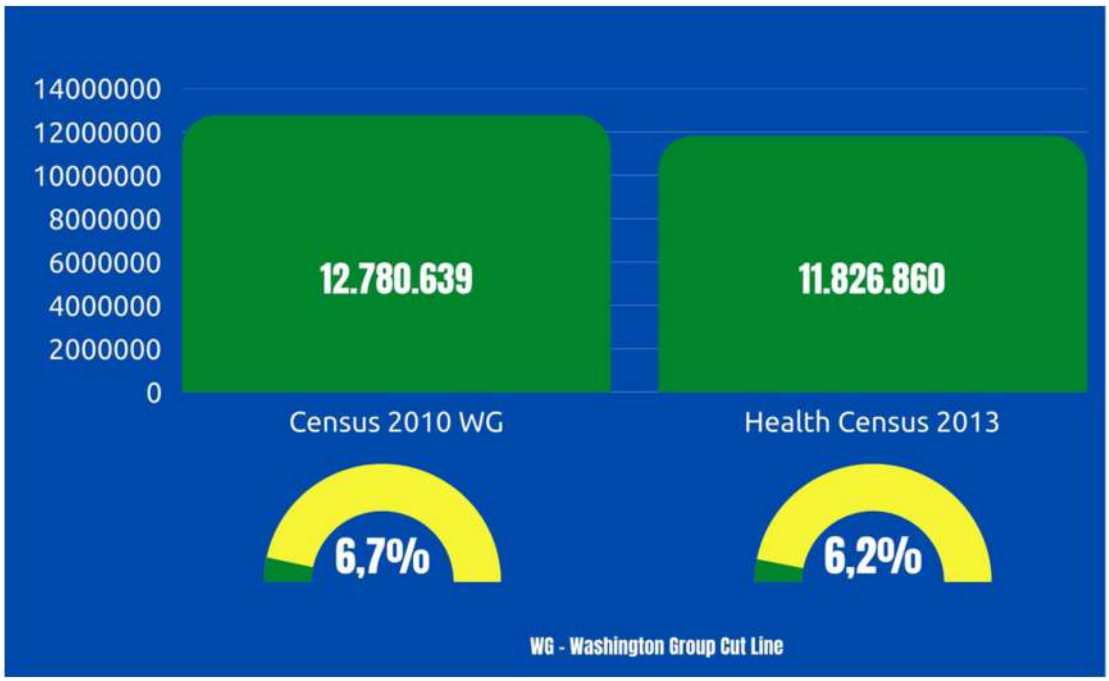
The 1991 Census used biomedical concepts (amputation, blindness, deafness, spinal cord injury, among others). The 2000 Census, meanwhile, aimed to understand both biomedical aspects and people's perceptions of their interactions with the environment, while the 2010 Census focused on people's perceptions of their interactions with the environment (IBGE, 2013). The 2022 Census then adopted the criteria of the 'Washington Group' and counted only severe disabilities.

Want to know more

www.ibge.gov.br

MAPPING DEMANDS

Specialized services (educational, health, social, among others) should be directed towards those individuals with severe disabilities, considering the cutoff parameter established by the 'Washington Group'. Using this context, a cutoff line was developed and applied to the 2010 Census to understand the population of those with disabilities and the total was quite similar to that of the 2012 National Health Survey, (Botelho; Porciúncula, 2018).



In competitive Parasport, meanwhile, a significant portion of the population with disabilities will be excluded because of classification and opportunity.

That being said, from the perspective of public policy, parasports should provide environments and scenarios that address the diversity of the population and whether or not they are eligible for Parasport. From the specific perspective of teachers, coaches, and managers, they must also provide practices that ensure individuals' access to sport, regardless of whether they meet the eligibility criteria of Parasport modalities.

All people with disabilities must have guaranteed access to sports!

Want to know more

https://www.washingtongroup-disability.com

CLASSIFICATION CONCEPTS

Biomedical Parameters

Those that are based on biomedical parameters to define if the athlete is eligible and/or their competition group.

e.g. Parasports for the deaf is based on audiometric tests.

e.g. Parasports for people with visual impairment are divided into classes based on visual functions.

Bio-sport Parameters

Disciplines that are based on mixed parameters (biomedical, psychological, and technical/functional/sportive assessment) to determine whether the athlete is eligible and/or their competition group.

e.g. In the Special Olympics, to establish participation, the athlete must undergo specialized monitoring and complete specific skill tests in the discipline.

e.g. Paralympic Athletics and Swimming, in which the athlete with a physical disability must present their medical report, undergo muscle function tests, and participate in field tests (performing the sport specific movements).

An individual who is ineligible for a specific Parasport can be eligible for another sport due to the differences in functional parameters considered in the technical/functional/sporting assessment or even the biomedical concepts applied.

e.g. A person with a hand amputation may be ineligible for Paralympic athletics if the wrist joint is intact; however, this condition may qualify the individual for swimming or sitting volleyball.

PARASPORTS CLASSIFICATION MODELS

Eligibility: **People with intellectual impairment** require a medical report certifying intellectual impairment or developmental disorder. Athletes must be at least 8 years old to train and compete.

Evaluation: **Evaluation of skills in the discipline of competition.**

Competition Groups: **Groups of at least 3 and at most 8 athletes, organized by gender, age group, and similar skill level, with an approximate variation of 15%.**

Eligibility: **Hearing loss of at least 55 dB in the better ear.**

Evaluation: **Audiometry.**

Competition Groups: **Single class.**

Eligibility: Formal diagnosis of **Autism Spectrum Disorder** based on ICD-11 or DSM-5, issued by a qualified professional.

Evaluation: **Deficits must cause significant functional impairment across multiple contexts (social, educational, family). Evaluation should include observations, interviews, and professional documentation.**

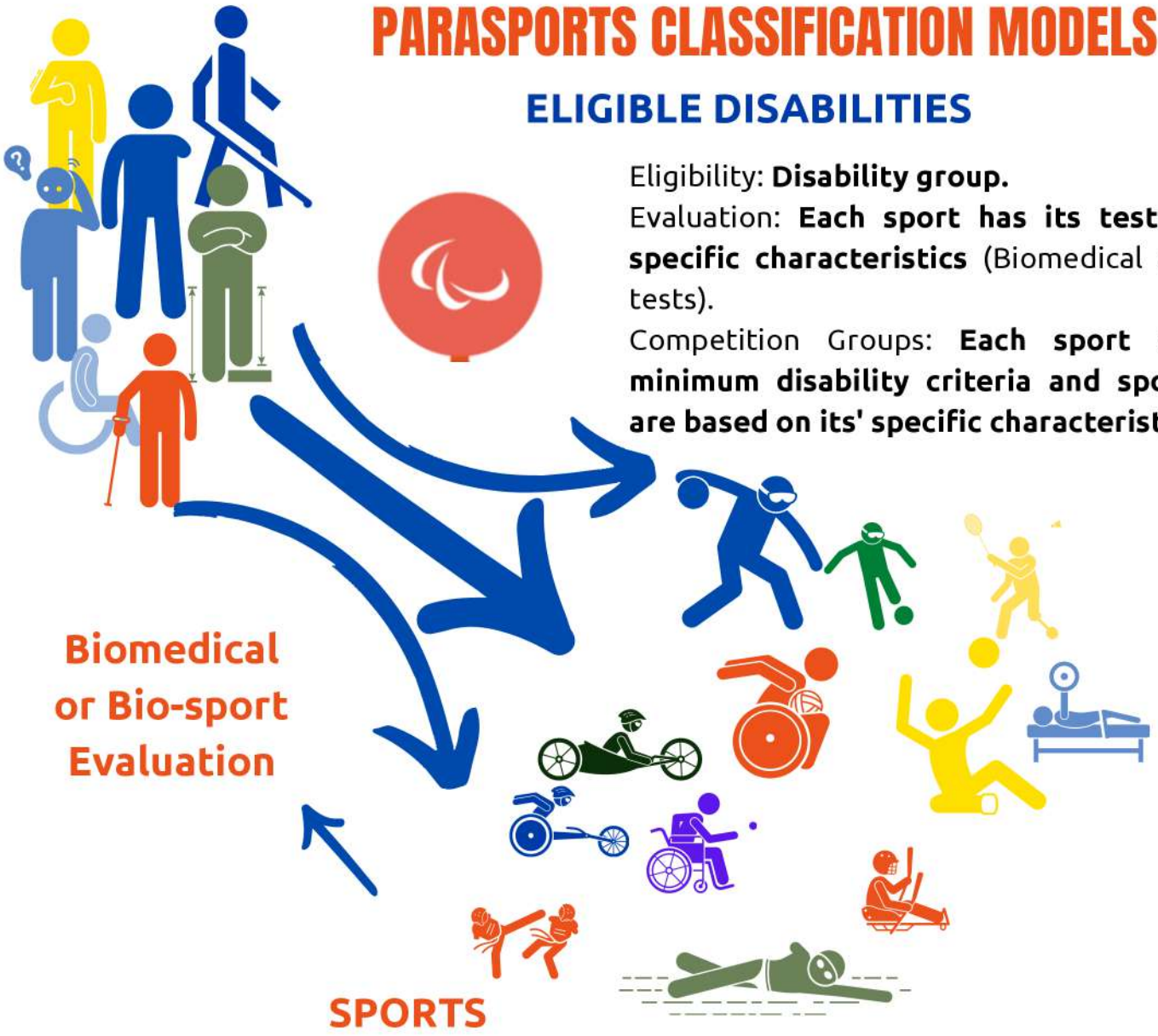
Competition Groups: **SIngle Class.**

Want to know more
specialolympics.org
https://www.deaflympics.com

PARASPORTS CLASSIFICATION MODELS

ELIGIBLE DISABILITIES

Eligibility: **Disability group.**
Evaluation: **Each sport has its tests based on specific characteristics** (Biomedical or Bio-sport tests).
Competition Groups: **Each sport defines its minimum disability criteria and sports classes are based on its' specific characteristics.**



HISTORY OF CLASSIFICATION

Sport Classification in the Paralympic Movement went through three historical phases in its development:

- **Medical Classification** – Based on the athlete's disability.

Period: 1960–1980.

- **Functional Classification** – Based on the athlete's functionality in their sport specificity.

Period: 1990–2000.

- **Evidence-Based Classification** – The construction of eligibility, functionality, and tests must be based on science.

Period: 2010–2020.

Tweedy, Beckman; Connick, 2014.

ELIGIBLE DISABILITIES IN THE PARALYMPIC MOVEMENT

DISCIPLINES

Multiple impairments

e.g. Athletics and Swimming includes individuals with physical, visual, and intellectual impairment.

e.g. Rowing and cycling includes individuals with physical and visual impairment.

e.g. Table tennis includes individuals with physical and intellectual impairment.

Impairment Group

e.g. Badminton and canoeing recognize athletes with physical impairment as eligible.

e.g. Goalball and Blind Football recognize athletes with vision impairment as eligible.

Want to know more
paralympic.org

CLASSIFICATION AND ITS IMPACT ON TEAM PARASPORTS

Single class

Competition held with athletes from a single class.

e.g. Blind football and goalkeeper without impairment.

e.g. disciplines for the deaf.

Combined

A competition held with athletes from multiple classes competing together.

e.g. Goalball, where athletes from classes B1 (blind), B2, and B3 (low vision) compete together while all blindfolded.

Scoring on Court

The team must combine athletes from different classifications to ensure that the group's total score does not exceed a specific point total. Those with more mobility are given a higher classification score.

e.g. Wheelchair basketball: the total class points of the athletes on the court can reach up to 14 points (1).

e.g. Wheelchair rugby: The total class points of the athletes on the court can reach up to 8 points (2).

e.g. Wheelchair handball (HCR4): The total class points of the athletes on the court can reach up to 12 points (3).

Number of Athletes

Competition in which the quantity of specific classes on the court or field is defined.

e.g. Volleyball permits a maximum of 2 athletes classified as VS2 (minimum disability) on the team, with only 1 allowed on the court at a time (4).

e.g. CP Football requires the team to have at least one FT1 athlete (most severe disability) on the field at all times and allows a maximum of one FT3 athlete (minimal disability) on the field (5).

e.g. Power soccer: of the 4 athletes on the court, only 2 can be from class PF2 (6).

Integrated

Disciplines that integrate athletes with and without disabilities according to their level of sports skill.

e.g. Basketball 3 (Special Olympics) integrates athletes with and without intellectual impairment according to their skills in the game (7).

Want to know more

Winckler, C. Pedagogia do Paradesporto. Santos: Paradesporto Brasil + Acessível, 2023.

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TWEEDY, S. M., BECKMAN, E. M., & CONNICK, M. J. Paralympic Classification: Conceptual Basis, Current Methods, and Research Update. **Pm&R**, 6(8), S11–S17, 2014. https://doi.org/10.1016/j.pmrj.2014.04.013

Fontes da Classificação nas Modalidades Coletivas

(1) - MARQUES, R.D. & ALVES, M.A. Basquete em Cadeira de Rodas. MELLO, T.M & Winckler, C. **Esporte Paralímpico**. São Paulo: Editora Atheneu, 2012.
(2) - https://rugbiabrc.org.br/
(3) - Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023
(4) - Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023
(5) - Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023
(6) - https://fipfa.org/classification/
(7) - http://media.specialolympics.org/soi/files/resources/PORTUGUESE/Coaches/UnifiedSports_PR.doc

ATHLETE CARE IN PARASPORTS

Authors: Winckler, Ciro; Lima-Trigo, Elke; Melo, Geiziane L.; Cidade, Ruth E.; Willig, Renata Matheus.

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ASPECTS TO CONSIDER IN EACH DISABILITY

CONGENITAL
OR
ACQUIRED

Onset period and impact on human development

PROGRESSIVE,
REGRESSIVE
OR
STABLE

Manifestation of disability over time or lifespan

TEMPORARY
OR
PERMANENT

Duration of the disability

LEVEL OF IMPAIRMENT

The same disability can have varying impact on function

PRIMARY AND SECONDARY CONDITIONS

A disability can be associated with other impairments

e.g. A visual impairment can lead to sedentary behavior because of barriers to participation, which in turn can result in heart problems.

e.g. Down syndrome can lead to cardiac problems.

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LEGEND

DISABILITY IMPACT

ACTIVITY LIMITATIONS

The most relevant conditions that limit the practice of physical activity

IMPAIRMENT

Conditions associated with functions related to physical activity affected by the disability

PEDAGOGICAL DIMENSIONS

Relevant aspects to be developed in classes or training sessions

THE INFORMATION WILL BE PRESENTED SUMMARIZED

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VISUAL IMPAIRMENT

BLINDNESS
LOW VISION

- ↓ Spacial Orientation
- ↑ Sedentarism
- ↓ Gross Motor Skill
- ↑ Fatigue

- ↓ Balance
- ↓ Coordination
- ↓ Incidental Learning*

- Balance
- Coordination
- Spatial Orientation
- Aerobic Capacity
- Anaerobic Capacity

Want to know more

Winckler, C.; Miranda, A. J. The Athlete with Visual Impairment. **Aspetar Sports Medicine Journal**, [S. l.], v. 7, n. 17, p. 138–141, 2018.

* Process based on spontaneous learning, in the case of the blind person, in the deprivation of visual information in this process.

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DEAFNESS

DEAFNESS

HEARING LOST

MILD

MODERATE

SEVERE

Similar Motor development

Subjective concepts

Neural Deafness Balance

Game strategies

Communication strategies

Balance

Want to know more

Winckler, C. Physical, Sensory, and Intellectual Impairments. In: Walter R. Thompson. (Org.). **ACSM's Clinical Exercise Physiology**. 1ed. Atlanta: Wolter Klubers, 2019, v. 1, p. 531-577.

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SPINAL CORD INJURY

PARAPLEGIA
TETRA/QUADRIPLEGIA

Physical fitness
e.g. Strength, cardiovascular endurance

Physical functionality
e.g. Trunk stability

Autonomy

Motor Control

Physiological functions

Mobility

Wheelchair maneuvering and mobility

Pressure sore prevention

Knowledge of hygiene and health

Blood pressure control

Want to know more

Winckler, C. Physical, Sensory, and Intellectual Impairments. In: Walter R. Thompson. (Org.). **ACSM's Clinical Exercise Physiology**. 1ed. Atlanta: Wolter Klubers, 2019, v. 1, p. 531-577.

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LIMB DEFICIENCY

UPPER LIMB

LOWER LIMB

ABSENCE

(AMPUTATION OR DYSMELIA)

LIMB LENGTH

DIFFERENCE

Muscle Strength

Engagement in physical activity

Risk of comorbidity

Balance

Gait

Manipulation

Strength Balance Movement

Body Image

Use of orthotics and prosthetics

Want to know more

Winckler, C. Physical, Sensory, and Intellectual Impairments. In: Walter R. Thompson. (Org.). **ACSM's Clinical Exercise Physiology**. 1ed.Atlanta: Wolter Klubers, 2019, v. 1, p. 531-577.

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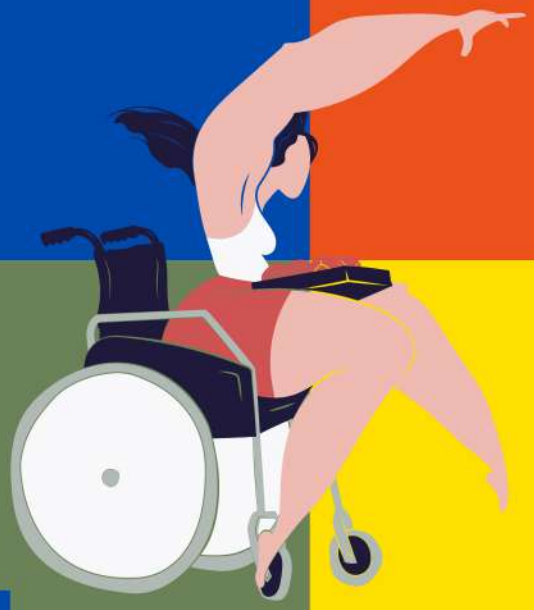
COORDINATION IMPAIRMENT

HYPERTONIA
ATHETOSIS
ATAXIA

Motor development

Energy expenditure of movement

Motor abilities



Balance

Coordination

Joint and Muscle Mobility

Stretching
Balance

Muscular balance

Gross and fine motor skills

Want to know more

Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023.

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SHORT STATURE

SHORT STATURE

Similar Muscle function

Cardiovascular capacity

Anthropometry

Vision and hearing

Prevalence of pain

Mental health care

Implement adaptations

Want to know more

Jacinto, M.; et al. Physical Activity, Exercise, and Sports in Individuals with Skeletal Dysplasia: What Is Known about Their Benefits? Sustainability 2022,14,4487. https://doi.org/10.3390/su14084487.

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INTELLECTUAL IMPAIRMENT

NON-SYNDROMIC INTELLECTUAL IMPAIRMENT

- Problem-solving
- Planning skill
- Abstract thinking
- Responses of physical fitness
- Sedentary behavior
- Obesity

- Cognitive function

- Attention
- Motivation
- Physical Performance
- Quantity of Information

Want to know more

Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023.

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INTELLECTUAL IMPAIRMENT

SYNDROMIC INTELLECTUAL IMPAIRMENT

Problem-solving

Planning ability

Abstract thinking

Physiological responses to physical exercise

Associated conditions
e.g. Ligamentous laxity

Cognitive function

Physiological functions

Attention

Motivation

Physical performance

Specific care
e.g. heavy loads or stretching

Want to know more

Winckler, C. **Pedagogia do Paradesporto**. Santos: Paradesporto Brasil + Acessível, 2023.

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AUTISM SPECTRUM DISORDER

AUTISM SPECTRUM DISORDER

Motor Skill

Physical activity

Social Communication

Focused interest

Repetitive behavior

Communication

Social interaction

Systematized activity

Associated conditions

e.g. Hyperfocus

e.g. Hypersensitivity or Hyposensitivity

Want to know more

Ramos, J. M. Alterações Encefálicas no Transtorno do Espectro do Autismo: Aproximações da Neuroplasticidade e a Atividade Física. **Revista da Associação Brasileira de Atividade Motora Adaptada**, v. 24, n. 1., 2023.

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HAUNJ, J.; DU, C.; LIU, J.; TAN, G. Meta-Analysis on Intervention Effects of Physical Activities on Children and Adolescents with Autism. International **Journal of Environmental Research and Public Health.** 17(6), 1950, 2020. https://doi.org/10.3390/ijerph17061950

JACINTO, M.; et al. **Physical Activity, Exercise, and Sports in Individuals with Skeletal Dysplasia: What Is Known about Their Benefits? Sustainability.**14,4487, 2022. https://doi.org/10.3390/su14084487

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STRATEGIES FOR AN ASSESSMENT IN THE PARASPORT

Authors: Winckler, Ciro; Melo, Geiziane L.; Lima-Trigo, Elke; Cidade, Ruth E.; Willig, Renata Matheus.

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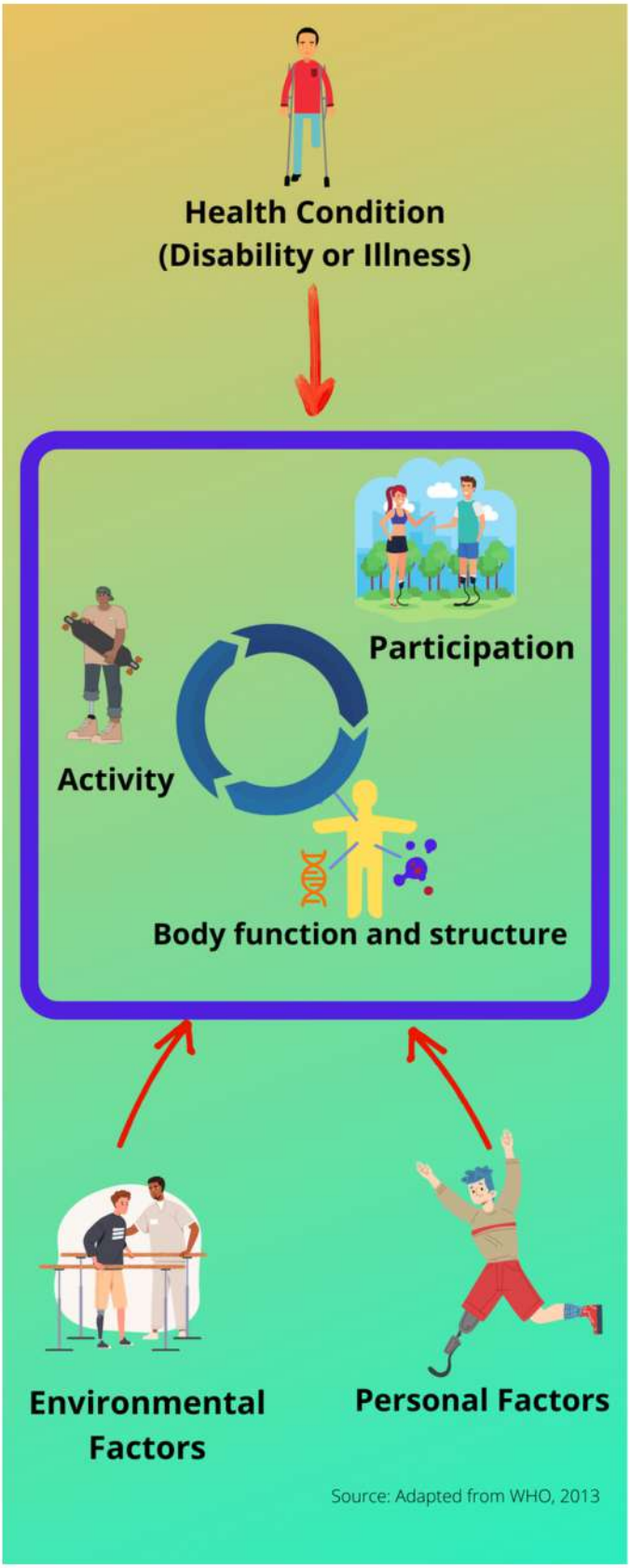
HOW TO KNOW MY STUDENT/ATHLETE



The initial contact with our student or athlete who has a disability should focus on getting to know the initial contact with our student or athlete who has a disability should focus on getting to know the person with whom we will be working.

The Assessment is an instrument questionnaire that can be used for this purpose, as it helps to systematize information about the individual based on their memories. However, throughout this manual, we will present proposals to access information more efficiently, ensuring better intervention. To guide the type of questions we can formulate, we will use as a foundation the biopsychosocial model (WHO, 2001).

This proposal aims to understand the individual holistically, considering the interaction between body structures and functions with the subject's activities and participation, integrating personal and environmental factors, and addressing their health conditions.

Following this logic, we will divide our proposed content for an assessment questionnaire to get to know the individual based on their perceptions of health, interaction with the environment, and bodily functions, with the scenario being Parasport (participation and activity).

Questions will not be presented, but the areas that should be considered and included in the questionnaire for the activity in which the student/athlete will be involved will addressed.

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PERSONAL FACTORS

BASIC INFORMATION ABOUT STUDENT/ATHLETE

- Name
- Gender
- Date of Birth
- Place of Birth
- Education
- Personal Emergency Contacts
- Housing
- Transportation
- Occupation
- Language(s)
- Color/Race
- Family Composition

Education

Educational attainment
e.g. Middle school, high school, college.

Model
e.g. Specialized education, inclusion, support center, among others.
e.g. Can read.

Origin

Local
e.g. City of birth and country.

Migratory Status

Family Composition

Relatives
e.g. Father, mother, offspring, legal guardian, accountable individual, among others.

Cohabits with a partner
e.g. Spouse, boyfriend, or other.

Housing

Type
e.g. House, apartment, room, tent, lodging, among others.

Local
e.g. City, rural area.

Adaptation
e.g. Ramp, elevator, bathroom.

Work

Type of work
e.g. Not employed, internship, paid work temporary work, retired.

Amount received
e.g. Gain value or range.

Transport

Type of Transportation
e.g. Car, motorcycle, bicycle, public transportation, specialized transport, or other.

Ethnicity

Color/Race
e.g. White, Black, Brown, Yellow, Indigenous.

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PERSONAL FACTORS

The formulation of questions in the assessment questionnaire for the initial interaction with the student/athlete should aim to gather basic information that guides the intervention and improves the reception. Aspects such as perceptions, fears, and emotions can be mapped directly or indirectly through tools with open or closed questions.

Goal for Participation

Parasport

e.g. Education, performance, health, or leisure.

Personal

e.g. Ownership of materials or financial implications of the practice (equipment or activity).

Perception

Perceptions in relationships

e.g Overprotection, abandonment, comfot.

Health

Activity specificity

e.g. PAR-Q Physical Activity Readiness Questionnaire.

e.g. Life Satisfaction Questionnaire.

e.g. Mood States.

Impairment

Body function

Body structure

e.g. Leg, arm, foot, hand, eyeball, spinal cord, among others.

Cause

e.g. Trauma, illness, deformity.

Time of origen

e.g. Congenital or acquired (age or stage).

Prior Experience

Sport

e.g. Parasport, inclusive sport, traditional sport.

Program

e.g. Structured, specialized, inclusive, or other model.

Social interaction

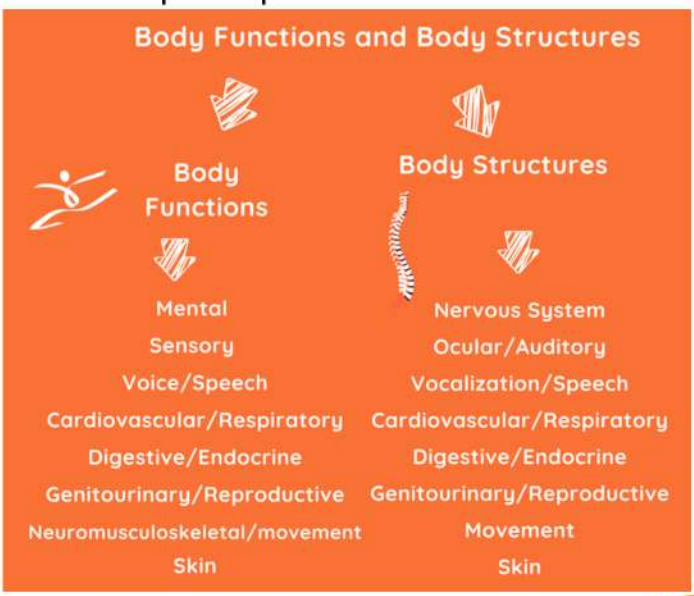
Activities

e.g. Social, religious, leisure, among others.

Diseases

Secondary diseases

e.g. Skin, cardiovascular, digestive or metabolic functions, among others that could impact participation.



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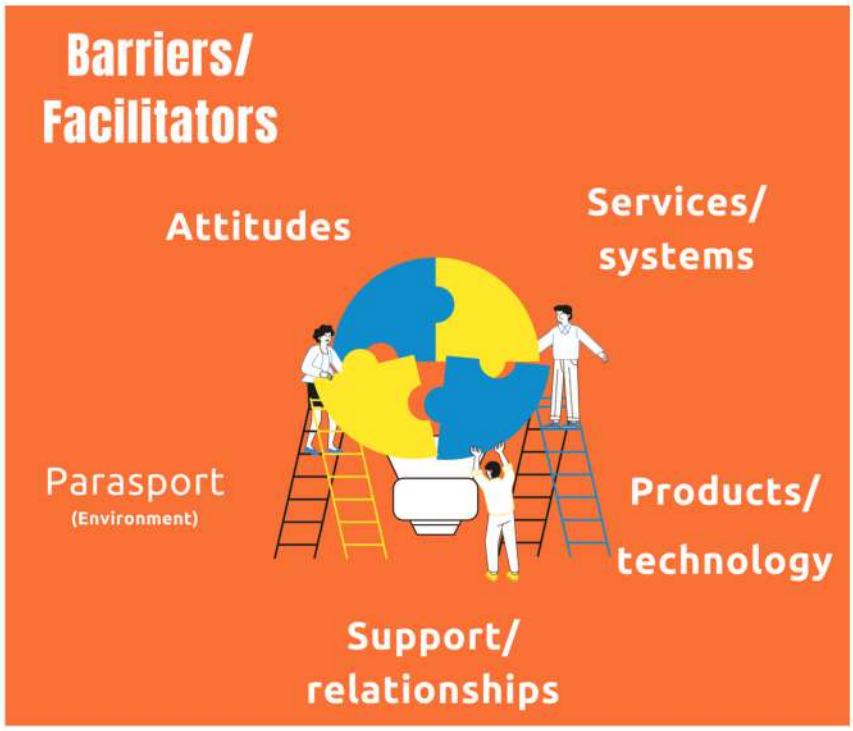


ENVIRONMENTAL FACTORS

Identifying the **barriers and facilitators** encountered by the student/athlete is a fundamental aspect of preparation and contextualization the assessment questionnaire. In this regard, it would be interesting to map the student/athlete's perceptions of their relationships with Parasport or physical activity prior to engaging with the new project.

Attitude

Communication

e.g. Sign Language, verbal, written, finger spelling, alphabet boards, pictorial symbols, computer with synthesized voice.

Prior Experience

Sport

e.g. Parasport, inclusive sport, traditional sport.

Program

e.g Structured, specialized, inclusive, or alternative model.

Supports

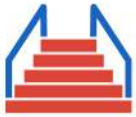
Family/Friends

e.g. Father, mother, guardian, tutor, sibling, relative, grandparent.

Institution

e.g. Hospital, NGO, public service, specialized institution.

Services



Access to training environments

e.g. Obstacles to accessing the facilities you visit, and transportation to it.

Products

Adaptation

e.g. Need for material adaptation.

Access to resources

e.g. Ownership of materials or financial implications to practice (equipment or activity).

Medications

Prescription

e.g. Medical, educational, social assistance, among others.

Healthcare professionals partnerships

Health

e.g. Medical authorization, medical documentation, among others.

e.g. Oversight by an occupational therapist, physiotherapist, or others.

e.g. Prescription of orthotic devices or prosthetic limbs.

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ACTIVITY AND PARTICIPATION

Learning

Educational Attainment

e.g. No education, Incomplete Elementary, Complete Elementary, Incomplete High School, Complete High School, Incomplete College, Complete College, Postgraduate.

Literacy

e.g. Yes or no.

e.g. Braille, ink with enlarged letters or not.

Pedagogical Requirements

e.g. Time demand, learning pace, concentration, contrast, limitation in the amount of information, or other adjustments.

Impact of Assistive Technology

e.g. Glasses, magnifying glass, binoculars.

Mobility

Autonomy

e.g. Autonomy is the capacity for daily mobility in a wheelchair, or through orientation and mobility strategies for individuals with visual impairment.

e.g. Capacity for independent travel to the activity location.

Mobility Equipment

e.g. Orthosis, prosthesis, walker, crutch, skateboard, among others.

Communication

Uses technology resources

e.g. Uses or does not use a computer, tablet, or mobile phone.

e.g. Uses hearing aids, voice synthesizers, or written communication.

Self-Care and Domestic Life

Body care

e.g. Use and independence in bathroom usage.

e.g. Fulfillment and independence in nourishment.

e.g. Achievement and independence in personal hygiene.

Questions and Demands

Understanding

e.g. Can comprehend and respond to questions such as the questionnaire.

e.g. Can convey information and messages from the program to family members.

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SPINAL CORD INJURY

Identify the following entry conditions for individuals with spinal cord injury (SCI).

General Demands

Autonomy

e.g. Perception of the individual and family members.
e.g. Whether the individual uses a catheter independently or with the assistance of others.
e.g. Autonomy in nourishment.
e.g. Autonomy in mobility.

Education

e.g. Lack of awareness about their SCI condition.
e.g. Illiteracy and inadequate education of the student/athlete.

Community

e.g. Perception of community inclusion.
e.g. Perception of accessibility and mobility within the community.

Accessibility

e.g. Lack of access to sports centers, clubs, and other spaces due to restricted mobility OR inaccessible faclities
.

Self-care

First Aid

e.g. Level of injury, motor, sensory, and autonomic impact.
e.g. History of pressure ulcers and skin lesions.
e.g. History of urinary tract infection.

Hygiene

e.g. Use of catheter, urinary and intestinal catheter, menstrual hygiene, and bathing.

Transfer Capacity

e.g. Everyday wheelchair to athletic wheelchair, bed to chair.

Want to know more

www.asia-spinalinjury.org

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SPINAL CORD INJURY

Barriers in Parasport

Products and Technologies

Wheelchairs

e.g. Condition of access to everyday wheelchairs or equipment.

e.g. Wheelchair cleaning habits.

e.g. Limited or inadequate equipment maintenance.

e.g. Lack of access to sports wheelchairs.

Financial income

e.g. Income and its impact on healthcare for individuals with SCI, as well as difficulty accessing rehabilitation and sports centers.

e.g. Income and its impact on purchasing necessary sports equipment, such as gloves, sleeves, and straps.

Metabolic and Endocrine Functions

Psychological aspects

e.g. Psychological aspects such as boredom, feelings of uselessness, negative attitudes from family, friends, and neighbors.

Physiological alterations

e.g. Chronic pain issues, autonomic dysreflexia, pressure sores, among others.

Climate

e.g. Excessive heat or cold.

Facilitators in Parasports

Regarding facilitators, the attitudinal aspect involves starting participation in Parasport with a focus on sports and leisure. This will provide fun, health, and competition, along with social support that will enable athletes to remain in the sport. More specifc examples include:

1. Family is a crucial support in the continuous rehabilitation of an individual with SCI.
2. Encouragement in accessibility and inclusion.
3. Monitoring of the multidisciplinary healthcare team.
4. Participation in sports programs aimed at leisure or high-performance Parasport.

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INTELLECTUAL IMPAIRMENT

Regarding social and environmental barriers and the low level of physical activity and sports participation for individuals with intellectual impairment (II), it is important to identify in the assessment questionnaire.

Environmental Influences

Familial context

Parental oversight

Caregiver time allocation

e.g. Work, other children.

Safety concerns

e.g. Violence.

Finances

e.g. High cost of neurocognitive therapies.

Supervision requirements

e.g. Family members and caregivers accompany in daily living activities.

Services

Parasport programs in rural areas and small municipalities.

Financial incentives from the private sector.

Specialized professionals.

University extension projects with high demand.

Courses in adapted physical activity and Parasport.

Attitudes, stereotypes, and exclusive behaviors.

e.g. Ableism.

Physical Skills

Reduction of fine and gross motor skills

e.g. Handling small objects and jumping.

Coordination difficulties

e.g. Climbing and descending stairs.

Motor and cognitive delay

e.g. Difficulty in walking.

Behavioral Skills

Lack of pleasure

Lack of interest

Frustration

e.g. Anxiety and symptoms of depression.

Lack of adaptation

e.g. Non-adapted sports programs.

Want to know more

Melo GLR, et al. Resistance training and Down Syndrome: A narrative review on considerations for exercise prescription and safety. **Frontiers in physiology**. 13:948439, 2022. doi: 10.3389/fphys.2022.948439

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CHARACTERISTICS OF PEOPLE WITH DOWN SYNDROME

Muscle hypotonia and ligament laxity
Congenital heart disease
Premature aging
Communication
Metabolic syndrome
Cognitive ability
Reduced balance
Reduced muscle strength and mass
Flat feet

FACILITATORS

Positive roles the family can play

Being proactive in seeking opportunities
e.g. Participating in university extension projects.
Providing motor experiences from an early age
e.g. Engaging in various sports disciplines.
Enjoying sports and staying active
e.g. Family members who engage in physical exercise.
Providing access to facilities that have Parasport
Encouraging sports participation

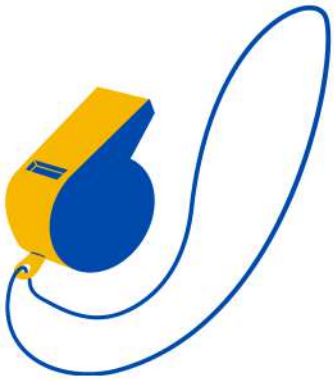
Social interaction with peers

Peer encouragement
e.g. Inclusive classrooms or specific groups.
Enabling participation
e.g. Classes or training sessions with other people with disabilities.

Other Factors

Determination to succeed

Ability to understand rules
Developing physical skills and coordination
e.g. Running, jumping, leaping.
Developing verbal and cognitive skills
e.g. Cognitive flexibility.
Participation in competitions
e.g. Parasport festivals and Special Olympics.
Personal achievements
e.g. Becoming an athlete in swimming, athletics, or table tennis.



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VISUAL IMPAIRMENT

Athletes with visual impairment (VI) report that the main barriers are their disability itself, dependence on others to participate, and lack of (qualified) supervision. Additional factors include:

Personal factors

Autonomy in mobility

e.g. Use of a guide, guide dog, or long cane.

Discomfort in the presence of others

e.g. Shyness or embarrassment.

Being too busy with other activities

e.g. Work.

Environmental factors

Transportation

e.g. Lack of accessibility in public transportation.

Equipment and facilities for engaging in activities in your local area

e.g. Gyms, athletic fields, or others.

Parasports

Previous opportunity to experience Parasport limited

Parasport disciplines they know of

e.g. Football 5-a-side, Goalball, Swimming, and Judo.

Facility access

e.g. Accessibility, space organization, or others.

Insufficiently qualified supervision

e.g. Lack of professional qualification in prior practices.

Materials not (sufficiently) adjusted

e.g. Bell ball.

Lack of sports programs in low-income regions

Support from others to exercise

e.g. People who can be guides or bicycle pilots.

Perception of disability in physical activity programs

e.g. Inclusion in sports initiation programs.

Not enough athletes with disabilities

e.g. Lack of promotion of Parasports participation.

Knowledge about Parasport environments that meet their personal goals

e.g. Sport, recreation, or rehabilitation.

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VISUAL IMPAIRMENT

Facilitators are crucial for initiating and sustaining participation in Parasports for individuals with VI

Personal factors

Physical goals

Increasing muscular strength
Controlling body weight
Enhancing cardiorespiratory fitness
Improving energy expenditure

Psychosocial

Personal goals

Fun/relaxation
Improved social relationships
Self-confidence
Independence
e.g. **Mobility.**
Learning new skills
e.g. **Autonomy.**
Competition
e.g. **Participation in the Paralympic Games.**
Accepting disability
e.g. **Interaction with peers.**

Environmental factors

Medical advice from a rehabilitation professional
Support from family, partner, or children
Support from friends and colleagues
e.g. **Financial support and mobility for initiating Parasport.**
Assistive devices
e.g. **Guide dog, computer or phone.**

Want to know more

www.paradesporto.unifesp.br

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PLANNING THE PEDAGOGICAL INTERVENTION IN PARASPORTS

Authors: Cidade, Ruth E.; Melo, Geiziane L.; Lima-Trigo, Elke; Willig, Renata Matheus; Winckler, Ciro.

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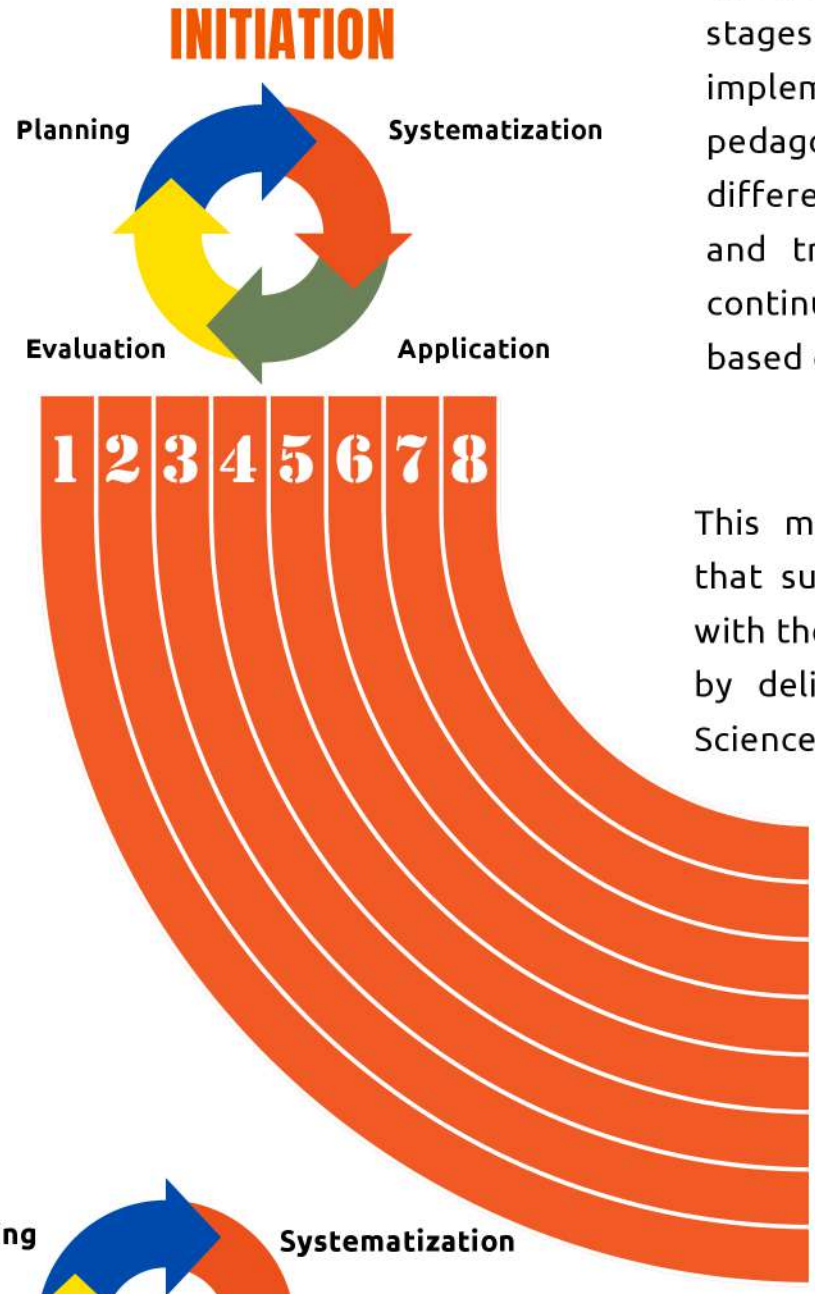
ON YOUR MARKS....

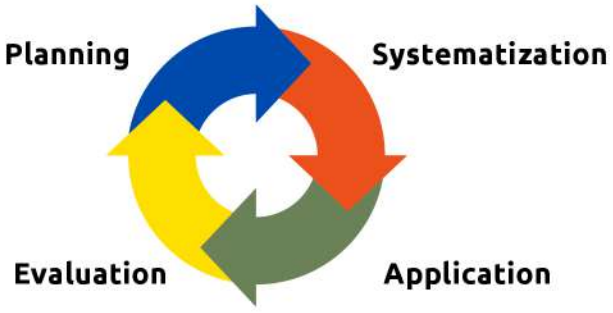
Sport pedagogy is where you bring together your knowledge from all other sub-disciplines of sport sciences.

Armour, 2013

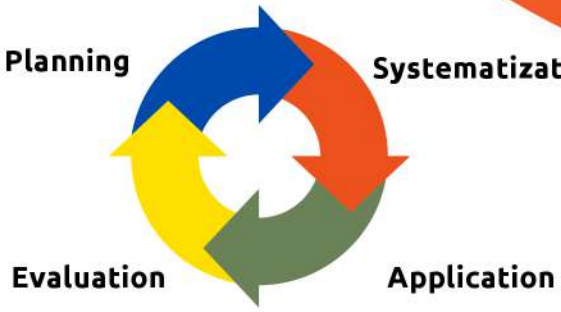
The pedagogy of Parasport focuses on the stages of planning, systematization, implementation, and evaluation of pedagogical procedures across the different phases of initiation, specialization, and training. These stages should be a continuous process that allows adjustments based on continuous evaluations.

This manual aims to provide instructions that support the 4 phases of this process with the hope of assisting the teacher/coach by delivering information from Parasport Science.





TRAINING



SPECIALIZATION

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ON YOUR MARKS....

Getting to know the individual through the assessment questionnaire

e.g. Stable or progressive disability, temporary or permanent, age of onset.

Identifying the structures and functions affected

e.g. Self-reported through assessment questionnaire.

e.g. Physical or motor function tests.

Understanding the different aspects of human development

e.g. Biological, cognitive, motor, linguistic, social interaction, and emotional-affective.

Access the manual here

Observe the student/athlete in the training environment

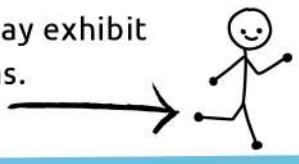
Systematic observation throughout the classes can be an excellent pedagogical tool.

Tips:

Always have a notebook on hand for notes.

Systematize aspects that should be observed during the classes.

e.g. A blind child may exhibit mannerisms.



It's essential to have a clear understanding of your student/athlete and your own in Parasport

e.g. Rehabilitation, Leisure, Education, and/or Performance.

WHO IS MY ATHLETE?

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READY...

Adaptation of objectives and content, adjusting them when necessary, based on needs

e.g. Prioritize specific content and objectives, setting minimum standards and introducing new ones when needed.

Application of an appropriate methodology for the understanding of the student/athlete

e.g. Use strategies and resources that spark interest and motivation.

e.g. Use concrete examples, encouraging expression and creativity.

Adaptation of materials and their organization in the class

e.g.Time, space, and materials.

e.g. Access ramps for people with mobility limitations or lighting and contrast for people with low vision.

Activity time

e.g. Identify how long the student/athlete can remain focused on the activities, so it can be adjusted to the possibilities.

e.g. Students/athletes with spasticity can become fatigued and present increased muscle tone or coordination limitations.

Motivation

e.g. Adjust the proposed activities to the interests and needs of the student/athlete.

Communication

e.g. Adjust the communication to the level of understanding of the students/athletes.

Tip — Be careful with the amount of information given in each instruction! When too much information is provided, the student/athlete will not be able to understand some of it.

Adaptation in planning, activities, and evaluation

e.g. Adjust the activity to the functional characteristics of the student/athlete and age group.

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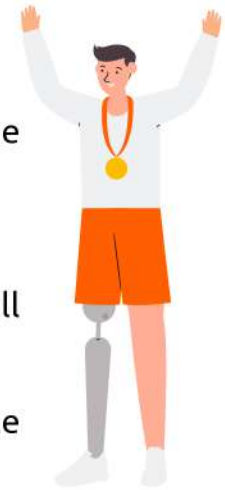
START...

Class

Important — Situate the practice within the daily experiences of the student/athlete.

Attention — Diversify classes/practices, environments and resources to prevent the onset of a monotonous routine.

Tip — Cooperative games are an excellent choice.



Promote competitions, festivals, and recreational activities

e.g. Adjust the rules and structures of the competition to the goals of the group and the program.

Organize the class dynamic

e.g. Avoid long lines organizing the space and the materials so that all students/athletes are moving for the maximum time possible during the class.

e.g. Provide opportunities to think, decide, act independently, and promote autonomy.

Tip - Do not underestimate. Accept different forms of movement execution.

Rules

e.g. Observe and define the rules and agreements with the group, avoiding distractions and indiscipline.

e.g. Develop progressive rules according to the group's mastery of the sport — fewer rules in the initial stages, and increasing them as the group advances in the discipline.

e.g. Rules can always be combined and recombined, invented and reinvented.

Important - Make adaptations by sharing opinions.

Challenges

Tip — Promote and adjust challenges, encouraging and helping to overcome difficulties.

Evaluation

e.g. Control physical fitness related to health and motor performance associated with the Parasport discipline.

Want to know more

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THE ROUTE...

Methodological Organization

1 - Provide space for didactic strategies that allow experimentation and diversification of movements, considering the strategic-tactical demands of the discipline;

2 - Align recurrent competition problem-situations with the daily training routine;

3 - Enable opportunities for different actions and decision-making for various situations in Parasport practice;

4 - Observation and analysis of the discipline aligned with other training and competition situations;

5 - Resolution and adjustments of motor, cognitive, and affective aspects;

6 - Enable innovative decision-making.

Gallati et al., 2015

Attention to planning

Tactical-technical dimension

e.g. Offensive/defensive aspects consistent with collective, individual, or team Parasports, respecting the sports classification or unified system;

e.g. Basic motor skills, general skills, and associated specialized foundations assistive technologies such as wheelchairs or prostheses;

e.g. Equip the student/athlete with tactical awareness, decision-making, skill execution, and performance strategies;

e.g. Coordinative capacities, fundamental skills, and Parasport technical skills;

e.g. Multiple competencies required in Parasport practice.

Tip — Focus on psychological aspects such as self-esteem and leadership;

Tip — Reflect on basic principles and values, present from the beginning of Parasport initiation, for the career such as cooperation, respect, fair play, friendship, and pursuit of excellence.

Want to know more

Galatti, L. R. et al. Pedagogia do esporte: contextos, evolução e perspectivas para o esporte paralímpico na formação de jovens. **Corpoconsciência**, p. 38-44, 2015.

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THE ROUTE...

Pedagogical care for athletes with physical impairment

General Demands

Attention — Depending on the activity, the student/athlete may need more individual space considering the use of wheelchairs or crutches.

Important — The planning and execution of activities should allow the student/athlete to enjoy them to the fullest, considering their abilities.

Tip — Ask the student/athlete to suggest tools, rule modifications, and adaptations.

Wheelchair-handling

Tip — The wheelchair should be suitable for the person's size and the characteristics of their disability. The student/athlete may have the skill, but improper equipment will hinder their performance, consequently putting them at a disadvantage.

Care — The person should sit correctly to make the most of the wheelchair's functionality. Improper posture compromises the effectiveness of movement.

Understanding the wheelchair and its design is crucial

For beginners, teach basic mobility skills, including braking and turning, and should focusing on the following basics:

1. Hand and finger positioning on the push rim;
2. Wheelchair propulsion — the positioning of the trunk at the start and end of the movement;
3. Forward and backward movement — observing trunk positioning, cyclic arm movements, and hand positioning;
4. Slow and quick braking;
5. Change of direction;
6. Stopped and moving turns.

Cidade; Vara, 2021

Want to know more

Oliveira, A. A. B.; Perim, G. L. **Fundamentos Pedagógicos do Programa Segundo Tempo: da reflexão à prática**. Maringá: Eduem, 2009.

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THE ROUTE...

Pedagogical care for athletes with visual impairment

General Demands

Attention — The student may be blind or have low vision.

Important — The planning and execution of activities should allow the student to enjoy them to the fullest, considering their limitations and possibilities.

Tip — Consider the student's level of orientation and mobility, as well as their residual vision.

Pedagogical tips

Tip — Provide information about the classroom or training environment and its obstacles. For group activities, avoid environments with excessive sound stimuli.

e.g. Increase the size of objects and use contrasting colors for athletes/students with low vision.

Use specific environmental cues

e.g. Use walls, characteristic odors, texture of the floor and walls, and the sun's position will help the person with visual impairment in their navigation and the development of a mental map of the environment.

Information

1. Provide detailed verbal explanations, and when necessary, and after asking permission the coach/teacher can assist with the movement through touch;
2. Verbally explain the activities to be executed with a clear voice, facilitating the understanding of the student/athlete;
3. Demonstrate an exercise through tactile assistance, allowing the student/athlete to touch and be touched;

e.g. The student/athlete can touch or manipulate another person performing the movement.

Cidade; Vara, 2021

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THE ROUTE...

Pedagogical care for Deaf athletes

General Demands

Attention — The student may be deaf or have residual hearing.

Important — If there is a risk of collisions (bodily or with materials), it is recommended that hearing aids be removed.

Tip — Position yourself so that your face is visible to the student/athlete, making it easier for them to understand through lip reading and gestures.

Pedagogical tips

Tip — Use demonstrations and/or visual resources whenever possible.

e.g. Encourage the use of sign language by peers.

e.g. Adopt resources for complete communication such as drawings, writing, and other mechanisms to fill language gaps.

e.g. During activities between deaf and hearing individuals, adopt the dynamic of tutor partners.

Important — Activities with complex strategies need attention when building subjective concepts, such as zone defense.

Activity adaptations

Tips:

- Divide the task into parts so that the student can complete it fully at a later time.
- Apply activities based on problem-solving and, at specific moments, based on guided styles.
- Encourage participation, collaboration, and socialization of students through rule adaptations, constant pairing exchanges, and exercises large group.

Cidade; Vara, 2021

Want to know more

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THE ROUTE...

Pedagogical care for athletes with intellectual impairment

General Demands

Attention — The student may have cognitive deficits associated with a syndromic condition, impacting physical abilities.

Important — Provide an appropriate amount of information at a time.

Tip — Give clear instructions about the task to be performed.

Pedagogical tips

Instructions should have the following characteristics:

- Use concrete examples that are part of the reality of an athlete with intellectual impairment.
- Provide tips to improve attention to relevant information.
- Avoid long verbal instructions, giving clear and brief directions.
- Use demonstrations.

Activity frameworks

- Establish structure and routine in the class/training.
- The activities should be carefully selected according to the general development level of the students/athletes, considering the principle of individualization.
- When necessary, make adaptations in games, especially regarding time and rules.
- Repetition is a key element for fixation, without losing sight of the enjoyment of performing the activity.

Cidade; Freitas, 2009

Important — When the activity presents some complexity, one option is to present it in smaller parts.

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CIDADE, R.E.; VARA, M.F.F. **Educação Física Adaptada.** Curitiba: Editora Intersaberes, 2021.

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WHEELCHAIR IN PARASPORT

Authors: Almeida, Raphael Moreira; Melo, Geiziane L.; Lima-Trigo, Elke; Cidade, Ruth E.; Willig, Renata Matheus; Winckler, Ciro.

PARADESPORTO
BRASIL + ACESSÍVEL

BASIC INFORMATION AND HISTORY OF WHEELCHAIRS IN THE WORD

Wheelchairs are chairs equipped with wheels that allow people with reduced mobility **to move**. They can be **manual** or **motorized**, and can be operated by the users themselves or by another person. In **Brazil**, all individuals with reduced mobility, as confirmed by a medical report, have the **right** to request and receive a wheelchair free of charge through the **Unified Health System - SUS.**

Throughout this chapter, we will use the term **Wheelchair User (WCU)**, as not all individuals rely on a wheelchair as their **sole means of mobility** in daily life. It is common for some to use it only in specific situations, while for others, the wheelchair is their only means of mobility.

The **earliest records** of devices resembling a wheelchair date back to around the **5th century BC** in **China and Egypt**, where it is believed that wheelbarrow like carts were used to transport individuals with reduced mobility. In China, during the same period, there were also pieces of furniture mounted on wheels.

In **Ancient Greece** (**4th century BC**), representations of wheelchairs are found in artifacts such as vases. The Greek god Hephaestus is illustrated sitting in a wheelchair.

During the **12th century**, **wheelbarrows** were believed to be used to transport people with reduced mobility across **Europe**.

In **1595**, there are records indicating that **King Philip II** of Spain used a wheelchair similar to modern ones (though not self-propelled) during the last years of his life due to issues related to gout disease.

In **1655**, the German watchmaker **Stephan Farfler**, who was paraplegic, invented a wheelchair in **tricycle style**.

Want to know more

blog.sciencemuseum.org.uk/history-of-the-wheelchair/ www.medplushealth.ca/blog/the-history-of-wheelchairs-and-their-development/
www.thoughtco.com/history-of-the-wheelchair-1992670

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BASIC INFORMATION AND HISTORY OF WHEELCHAIRS IN THE WORD

During the **18th century**, the city of **Bath** (ENG) was a spa town that attracted many people with reduced mobility. To accommodate these visitors, **increasingly improved mobility solutions were devised**, such as "**Bath chair**", invented by John Dawson in 1783. In the same century, wheelchairs began to appear in medical catalogs as accessories for people with mobility difficulties.

During the **19th century**, many technological advancements were made, as evidenced by the **high number of patents** from that period. These advancements aimed to provide greater **comfort**, **independence**, and **maneuverability**.

In **1901**, a wheelchair with a seat, footrest, and four wheels was developed, closer to our current design.

The first motorized wheelchair was manufactured in London (UK) in 1916 but was not commercially successful.

In **1933**, **Harry Jennings** invented the **foldable seat manual wheelchair** at the request of Herbert Everest, who had become paraplegic. This innovation provided mobility options, as the wheelchair could be transported in vehicles such as cars.

In **1950**, Canadian inventor **George Klein** created the **first motorized wheelchair** to improve mobility for World War II veterans.

In **1956**, Everest & Jennings, the company responsible for the first folding wheelchair, became the first to **mass-produce motorized wheelchairs.**

In the **1980s and 1990s**, significant **technological advancements** were made, including developing **sports wheelchairs.**

Want to know more

blog.sciencemuseum.org.uk/history-of-the-wheelchair/
www.medplushealth.ca/blog/the-history-of-wheelchairs-and-their-development/
www.thoughtco.com/history-of-the-wheelchair-1992670

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TIMELINE WORLDWIDE

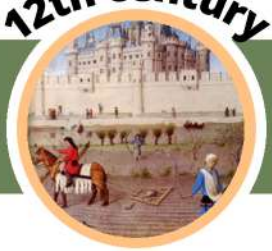
5th century BC

In China and Egypt, it is believed that people with disabilities were transported in types of wheelbarrows

4th century BC

In Greece, there are representations of the use of wheelchairs, with the god Hephaestus illustrated using one

12th century



It is believed that wheelbarrows and elementary versions of wheelchairs were used throughout Europe

1595

King Philip II of Spain used a wheelchair in his later years

1655

Stephan Farfler, a paraplegic German watchmaker, designs a self-propelled tricycle model

18th century

In the city of Bath (USA), developments were made in wheelchairs, enabling the mobility of tourists with disabilities

18th century

Wheelchairs begin to be offered in medical catalogs for people with mobility difficulties

19th century

The evolution made in wheelchairs aimed to promote more comfort, independence, and maneuverability

1901

A wheelchair with a design similar to the current ones was designed, featuring a seat, footrest, and four wheels

1916

The first motorized wheelchair was manufactured in London (UK), but it was not commercially successful

1933

Harry Jennings designed the manual foldable seat wheelchair, allowing for greater mobility

1950

George Klen, a Canadian inventor, designed the first motorized wheelchair

1956

The first motorized wheelchair produced on a large scale

80s/90s

Increase in technological development (sports wheelchairs)

Currently

Wheelchair with advanced technologies

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DISCIPLINES IN WHEELCHAIR

If you've ever watched a Parasport competition, you've probably seen an athlete competing in a wheelchair. However, before listing the sports in which athletes compete we need to understand a few important points.

There are **some sports** where, although the athlete uses a wheelchair for all their daily activities, they **do not use it for competition**. A good example is **Swimming**, which, for obvious reasons, **does not have wheelchair competitions,** even though many athletes are wheelchair users.

On the other hand, there are **disciplines** where, **although athletes do not need a wheelchair for their daily activities**, they **must use it to compete**, such as athletes in Wheelchair Basketball and Wheelchair Badminton.

In basketball, for example, athletes compete exclusively in wheelchairs, just like in Wheelchair Rugby and Fencing. In other disciplines, such as Athletics, Badminton, and Table Tennis, some classes use wheelchairs, and others do not.

Another point regarding wheelchairs in Parasport is the **use of motorized wheelchairs**. They are allowed in some disciplines, such as Tennis, Table Tennis, and Boccia.

There are also **disciplines** in which **sports wheelchairs have specific requirements**, such as in **Athletics** and **Basketball**. In others, like Boccia and **Table Tennis**, **everyday wheelchairs can be used**.

There are also sports in which performance depends on **manual propulsion of the wheels**, such as **Athletics**, **Basketball**, and **Rugby**, and others without propulsion, like **Boccia** and **Wheelchair Fencing**.

There are still disciplines where the **mobility equipment is adapted**, such as **Alpine** and **Nordic Skiing**, where there are no wheels, and many others where the **standard wheelchair remains unaltered.**

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CHARACTERISTICS OF PARASPORTS DISCIPLINES THAT USE WHEELCHAIRS

Discipline	Paralympic	Propulsion	Adaptation in the chair	Exclusive in WC	Motorized WC	Specific requirement in WC
Athletics	X	X				X
Badminton	X	X				X
Basketball	X	X		X		X
3x3 Basketball		X		X		X
Bobsled			X	X		X
Boccia	X			X	X	
Cycling*	X		X			X
Cricket		X				

Legend

Paralympic = Included in the program of the Paralympic Games (summer or winter).
Propulsion = Maneuvering the chair by using the hands for movement.
Adaptation in the chair = Adapted versions of wheelchairs, with assistive devices or replacement of wheels with skis/surfboards for movement on snow/ice.
Exclusive in WC = disciplines in which disputes are exclusively in wheelchairs.
Motorized WC = disciplines that allow the use of motorized wheelchairs.
Specific requirement in WC = disciplines featuring wheelchairs beyond the standard model.
* The handbike is the apparatus utilized by WCU athletes during competitions.

Want to know more

Tweedy, S.; Diaper, N. Introduction to wheelchair sport. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 3-28, 2010.
Winckler, Ciro. **Paradesporto: modalidades e seus conceitos**. Santos, UNIFESP, 2023.

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CHARACTERISTICS OF PARASPORTS DISCIPLINES THAT USE WHEELCHAIRS

Discipline	Paralympic	Propulsion	Adaptation in the chair	Exclusive in WC	Motorized WC	Specific requirement in WC
Crossfit		X			X	
Curling	X			X		
Sport Dance		X		X		
Dart					X	
Fencing	X			X		
Alpine Skiing	X		X			X
Cross-country skiing	X		X			X

Legend

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CHARACTERISTICS OF PARASPORTS DISCIPLINES THAT USE WHEELCHAIRS

Discipline	Paralympic	Propulsion	Adaptation in the chair	Exclusive in WC	Motorized WC	Specific requirement in WC
Handball		X		X		
Hockey		X		X	X	
Ice hockey	X	X	X	X		X
Football			X		X	
Lawn Bowls					X	
Rugby	X	X		X		X
Slalon		X		X	X	

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CHARACTERISTICS OF PARASPORTS DISCIPLINES THAT USE WHEELCHAIRS

Discipline	Paralympic	Propulsion	Adaptation in the chair	Exclusive in WC	Motorized WC	Specific requirement in WC
Snoker		X			X	
Skate		X				
Archery	X					
Shooting	X					
Tennis	X	X		X	X	X
Table Tennis	X	X			X	
Triathlon	X	X				X

Legend

Paralympic = Included in the program of the Paralympic Games (summer or winter).
Propulsion = Maneuvering the chair by using the hands for movement.
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Winckler, Ciro. **Paradesporto: modalidades e seus conceitos**. Santos, UNIFESP, 2023.

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CHARACTERISTICS OF PARASPORTS DISCIPLINES THAT USE WHEELCHAIRS

29

Parasports disciplines with classes and competitions in which athletes **use wheelchairs and their adaptations.**

16

Disciplines for wheelchair users are included in the programs of both the Summer and Winter Paralympic Games.

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BASIC COMPONENTS OF A SPORTIVE WHEELCHAIR

The everyday wheelchair, utilized in various disciplines, consist of the following **basic components**:

- Frame;
- Rear wheels and tires;
- Front wheels (casters);
- Hand rim;
- Fork or front wheel support;
- Backrest;
- Brake;
- Footrest.

In addition to these, which are basic components of all wheelchairs, there may be **other components** depending on the **specific needs and/or comfort/safety of the user**, such as cushions, **seat belts**, **straps**, **armrests**, among others.

Regarding **sports wheelchairs**, in addition to the basic components, **other components may be required** depending on the discipline, such as:

- Thigh protectors;
- Anti-tip wheels;
- Impact protection.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 29-46, 2010.

Medolda, F. O.; Sprigle, S. Avaliação da Inércia Rotacional de Cadeira de Rodas Manual: implicações para o design ergonômico. **Blucher Design Proceedings**, v. 1, n. 4, p. 2498-2509, 2014.

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CHARACTERISTICS OF SPORT WHEELCHAIR COMPONENTS

Frame — This is the part of the wheelchair that defines its shape and dimensions. It can be made of various metals and has different designs and components. Choosing these will determine the wheelchair's weight and durability. Athletes prefer ultralight frames, as they reduce the energy expenditure in propulsion. The primary materials used for frames are titanium, aluminum, and steel.

Backrest — Rigid backrests offer better support but less mobility. For highly active individuals, carbon fiber backrests provide lightness and good support. In sports wheelchairs, padded backrests are more commonly used as they allow greater freedom of movement for the trunk.

Cushion — This is an essential component for comfort, safety, and better positioning, as the pressure of body weight on the skin for long periods can cause pressure sores, and cushions play a crucial role in reducing these effects. There are several types of cushions, such as foam, gel, air capsules, and memory foam. Athletes need special attention to this item, as they spend hours training and may experience more issues with pressure sores.

Rims, Wheels, and Tires — Lightweight wheels are recommended for athletes as they reduce the overall weight of the chair. The size of the rims is regulated by the official rules of the disciplines, with diameters of 61 cm and 65 cm being the most common. The tires must always be properly inflated to reduce deformation and improve energy efficiency during movement.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 29-46, 2010.

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CHARACTERISTICS OF SPORTIVE WHEELCHAIR COMPONENTS

Hand Rims — The hand rims are typically made of metal and can be adjusted to be closer or farther from the wheel. They may also contain other components, such as plastic, to improve propulsion efficiency and reduce injuries.

Front Wheels — These are also called casters and are usually made of solid polyurethane with a diameter of 5 cm. Wheels smaller than this can make the chair more responsive but less stable. The stiffer the wheel, the better the efficiency in movement.

Anti-tip wheels — These are small wheels, usually two, located at the back of the chair to reduce the risk of tipping backward. Each discipline has its specific rules regarding the number of anti-tip wheels allowed.

Belts, straps, and thigh protectors — In wheelchair sports that involve high speeds and direction changes, belts and straps are important for stabilizing the lower limbs and trunk, for example.

The thigh protector, a plastic lateral component, helps with pelvic stability.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers.** Human Kinetics p. 29-46, 2010.

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GOALS AND ADJUSTMENTS OF SPORTIVE WHEELCHAIRS

This section will detail some of the characteristics and specific needs of sports wheelchairs for some Parasport disciplines: Basketball, Rugby, Tennis, Cycling (Handbike), and Athletics.

Regarding court based sports (Basketball, Rugby, and Tennis), the goals when configuring sports wheelchairs are:

- Increase accessibility to the hand rims;
- Enhance sitting stability;
- Make the chair more responsive and faster;
- Make the chair more maneuverable without compromising stability.

Common modifications to sports wheelchairs are:

- **Camber:** This is the angle of the wheel in relation to the vertical axis of the frame. Increasing the angle provides better access to the hand rims and enhances mobility; however, resistance also increases. disciplines with a lot of movement, such as Basketball, Rugby, and Tennis, use chairs with positive camber angles. Changes to this angle will also require adjustments in sitting height and angle.
- **Height (seated):** The height of the seat is important in wheelchair configuration and may vary depending on the sport, the athlete's role (such as their position), and the athlete's function. It can be increased by adjusting the position of the front wheels, using a thicker seat, and using larger wheels. However, a higher seat height reduces the stability of the user.
- **Sitting angle:** Adjustments can be made to the seat angle, with the most common being raising the front part of the seat, which provides greater pelvic stability and better access to the hand rims. However, this adjustment decreases the height of the user and the chair's responsiveness, despite the increased stability.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers.** Human Kinetics, p. 29-46, 2010.

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GOALS AND ADJUSTMENTS OF SPORTIVE WHEELCHAIRS

- **Horizontal rear wheel axle position:** Adjusting the wheels further forward on the horizontal axis can increase the propulsion angle but decrease its frequency. The center of gravity of the user moves backward, which allows for greater responsiveness of the chair. However, this adjustment reduces stability and increases the risk of tipping backward, especially in athletes with lower limb impairments.

- **Knee hyperflexion position:** This position occurs when the knee angle exceeds 90°, with the feet moving backward. It is made possible by adjusting the sitting angle, as mentioned in the previous items. This position increases turning speed but can cause high muscle tension, affect sitting stability, and influence trunk movements.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes**, coaches, and teachers. Human Kinetics p. 29-46, 2010.

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SPORTIVE WHEELCHAIRS

BASKETBALL

- The **height of the seat** can vary based on the player's position, with those playing the position of center generally utilizing higher seats. On the other hand, guards, who need to move faster, sacrifice a higher seat for better mobility.

- The **maximum permitted height** is 53 cm from the floor.

- The **backrest of chairs** is typically low, facilitating a more excellent range of motion for the upper limbs and trunk.

- Exposed spokes on the wheels can allow opponents to strike them in an attempt to interrupt the game. Plastic spoke protectors that cover the rear wheel spokes not only prevent damage to the wheel but also serves a safety function by protecting the players' hands and fingers from getting caught in them.

- Some chairs may have front protections to prevent the risk of frontal falls and foot injuries due to impact.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers.** Human Kinetics p. 29-46, 2010.

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SPORTIVE WHEELCHAIRS

RUGBY

- The rugby chair must be very stable, as it is mostly practiced by tetraplegics / quadriplegics.
- The wheel camber angle is 15° to allow better stability.
- Aluminum frames are preferred because they are very lightweight.
- Metal structures at the bottom protect the wheel spokes and the lower parts of the frame from impacts. Additionally, they lower the center of gravity and provide better stability.
- The seat angle should be set at 20° to increase pelvic stability.

- Belts and straps are used to stabilize the lower limbs and the trunk.
- The position of the knees is stabilized and adjusted to keep the ball between the thighs.
- Knee pads are allowed to protect the lower limbs.

- Gloves and elbow protections are also allowed, as friction and contact injuries are common in the upper limbs.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers.** Human Kinetics p. 29-46, 2010.

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SPECIFIC NEEDS OF SPORTIVE WHEELCHAIRS

TENNIS

- The only rule change from wheelchair tennis to olympic tennis is allowing two bounces versus one before hitting the ball. Wheelchair tennis is thus a very fast sport, and for an athlete to cover the entire court, the wheelchair needs to be fast and responsive.

- The wheels have positive camber to allow greater agility in movement.

- In this discipline, lower backrests are preferred to increase the mobility of the upper limbs and trunk.

- Some athletes use only one front wheel instead of two to increase responsiveness during turns. However, this reduces stability.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 29-46, 2010.

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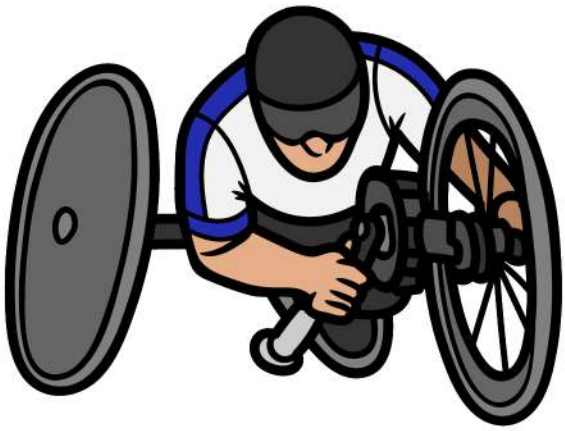
SPECIFIC NEEDS

CYCLING - HANDCYCLE

- A handbike is not a wheelchair, but an adapted bicycle. Its structure is mechanically more efficient than wheelchairs, as it allows for continuous arm work and better force transfer through the sprocket system.

- Three types of athletic positions that need to be considered are: straight, reclined, and bent at the knee.



- **Straight:** Only for recreation. It is slower because the position increases air resistance and reduces mechanical efficiency. The risk of falling is higher as the center of gravity is elevated. It is excellent for learning the synchronized propulsion rhythm necessary for the sport.

- **Reclined:** The athletes position is with their backs in a reclined position and their legs extended forward. The seated position is lower than in the straight type, and the seat is just a few centimeters off the ground. The cranks are placed close to the trunk, improving ergonomics.

- **Knee:** In this type, the legs rest on a seat in front of the body, and the position is very similar to that used in wheelchair racing in Athletics. The position allows the athlete to use the torso strength to assist in propulsion.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 29-46, 2010.

SPECIFIC NEEDS OF SPORTIVE WHEELCHAIRS

ATHLETICS AND TRIATHLON - WC RACE

- The wheelchairs have 3 wheels, with the front one having a smaller diameter.
- They also have a handlebar for steering and a brake.
- Propulsion rims have a diameter between 35 to 48 cm. Although more force is required for propulsion, higher speeds can be achieved.
- The rims can be coated with rubber, plastic, or foam to increase grip with the gloves.
- Athletes lean their bodies fully forward to improve the mechanical efficiency of propulsion and increase speed.

- The rear wheels typically have a camber of 2 to 15 degrees (preferably 11 to 14) to allow the athlete to reach the lower part of the rims without hitting the upper part of the wheel.
- Carbon fiber disc wheels can be used because they are lightweight, rigid, and have lower rotational inertia.
- To increase mechanical efficiency, the structures are rigid and constructed with lightweight materials, with components usually welded together.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers. Human Kinetics.** p. 29-46, 2010.

https://www.cpb.org.br/noticia/detalhe/3066/conheca-os-tipos-de-cadeiras-de-rodas-utilizadas-no-esporte-paralimpico

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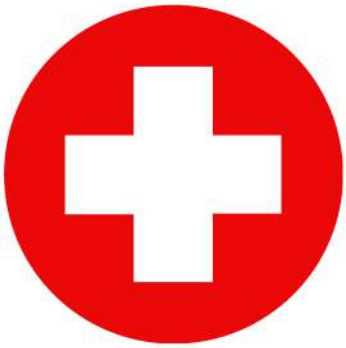
HEALTH CARE AND INJURY PREVENTION FOR WC ATHLETES



WCU athletes need to pay attention to certain health care aspects, general for all WCUs, and injury prevention, that will be specific to their sport practice. Some of these points are:

- **Skin examination:** It is extremely important to regularly check the skin in high-pressure areas, such as the buttocks, back, and legs, to prevent pressure ulcers and sores. In athletes, who spend hours training, the risks are even higher. It is necessary to change positions frequently and use proper padding.
- **Posture maintenance:** Maintaining good posture is essential to avoid spine problems and back pain. Lumbar supports and adjustments in chair tilt and height may be necessary.
- **Hygiene:** It is important to regularly clean the skin, especially in areas that come into contact with the wheelchair. It is also essential to prevent areas from lacking ventilation, which can lead to moisture accumulation and increase the risk of infections.
- **Protection:** In some sports where there is a risk of falls or frequent contact, some protective equipment is allowed, such as helmets, gloves, elbow pads, belts, and straps.
- Maintaining an appropriate body weight is important as increased body weight raises the strength and energy expenditure required for manual propulsion of the wheelchair, which increases the risk of injury, especially in sports where propulsion is essential. However, variations in body structure impact wheelchair adjustments.

Want to know more

Hsin-yi Liu et al. Sport Chair Set-Up and Selection. In Goosey-Tolfrey, V. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 29-46, 2010.
https://npiap.com/page/PreventionPoints
https://www.christopherreeve.org/todays-care/living-with-paralysis/lifestyle/wheelchairs/

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MEDOLA, F. O.; SPRIGLE, S. **Avaliação da Inércia Rotacional de Cadeira de Rodas Manual: implicações para o design ergonômico**. Blucher Design Proceedings, v. 1, n. 4, p. 2498-2509, 2014.

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The History of Wheelchairs and Their Development. Avaliable em: <https://www.medplushealth.ca/blog/the-history-of-wheelchairs-and-their-development/>. Acesso em: 28 Jun 2023.

TWEEDY, S.; DIAPER, N. Introduction to wheelchair sport. In GOOSEY-TOLFREY, Vicky. **Wheelchair sport: a complete guide for athletes, coaches, and teachers**. Human Kinetics p. 3-28, 2010.

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Imagens: Wikicomons.org

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UNDERSTANDING THE SPECIAL OLYMPICS

Authors: Melo, Geiziane L.; Lima-Trigo, Elke; Cidade, Ruth E.; Willig, Renata Matheus; Winckler, Ciro.

PARADESPORTO
BRASIL + ACESSÍVEL

TIMELINE WORLDWIDE

1946

Joseph P. Kennedy Jr. Foundation - JPK Junior

1947

Eunice Kennedy is appointed curator of the JPK Jr. Foundation

1948 - 1956

The JPK Jr. Foundation advocates for research on the causes of intellectual impairment

1957

Eunice Kennedy Shriver assumes Directorship of the JPK Jr. Foundation

1960

The beginning of the global movement

1962

First Camp Shriver

1968

Special Olympics

The first edition of an international competition of the Special Olympics

1971

The U.S. Olympic Committee gives official approval to the Special Olympics

1977

First Special Olympics International Winter Games

1980

Special Olympics programs have expanded to over 50 countries

1990

First International World Games conducted outside of United States

2000

The first Global Athlete Congress

2009

Death of Eunice Kennedy

2010

Unified Sports Program

2021

6,388,914 Athletes (5.4 million) and Partners

Want to know more

https://www.specialolympics.org

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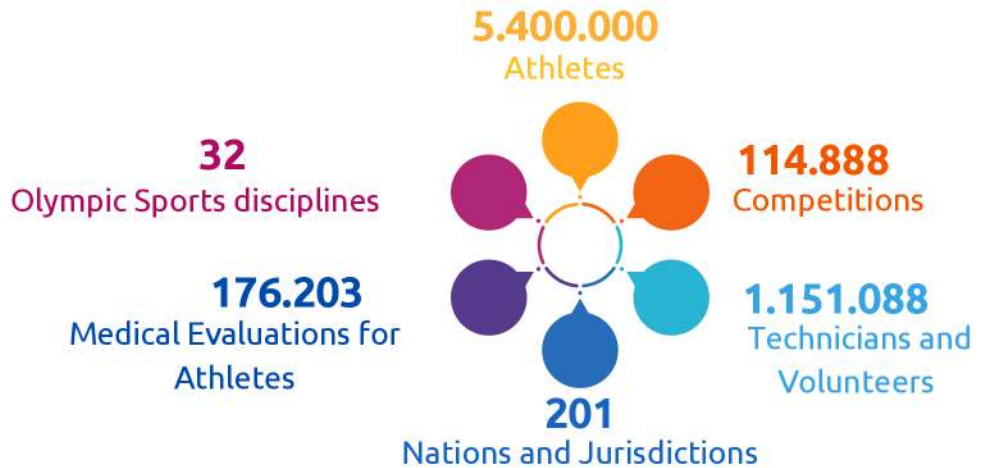
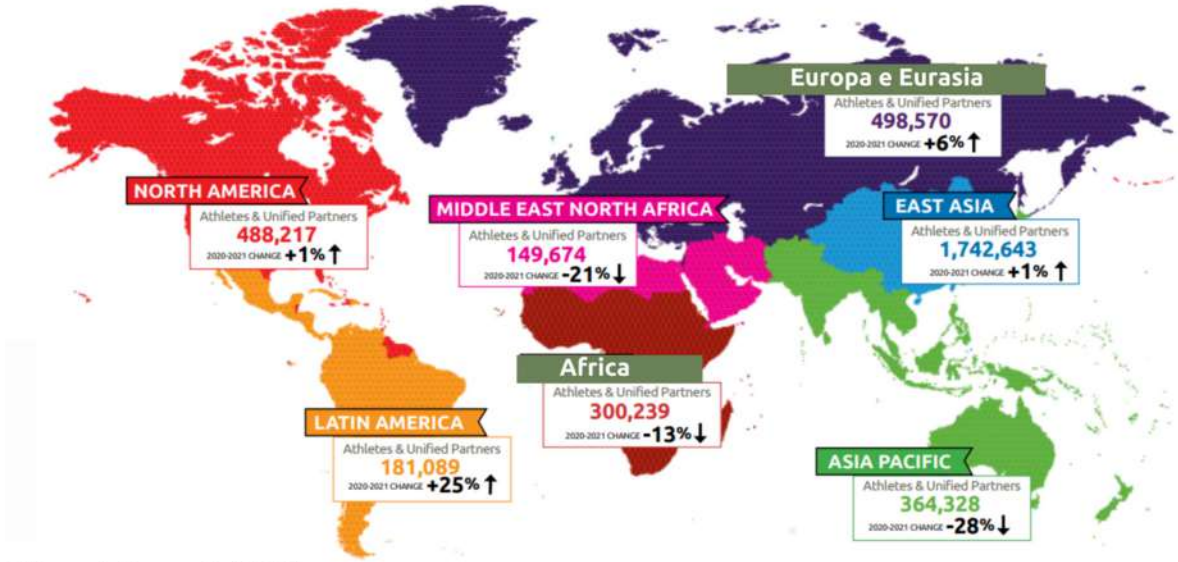
ABOUT THE SPECIAL OLYMPICS

Special Olympics is the largest global sports organization dedicated to individuals with intellectual impairment (II).

It uses the power of sport as a catalyst for change for individuals with II, aiming to create a more inclusive world. These changes come from a global movement that offers programs in health, leadership, and education. The figure below shows data from Special Olympics in 2023.





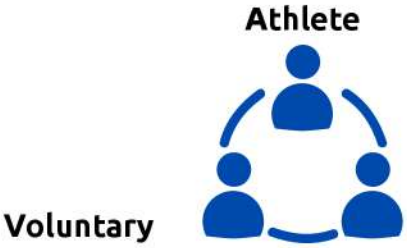
SO, Global Reach Report, 2021

Goals of Special Olympics

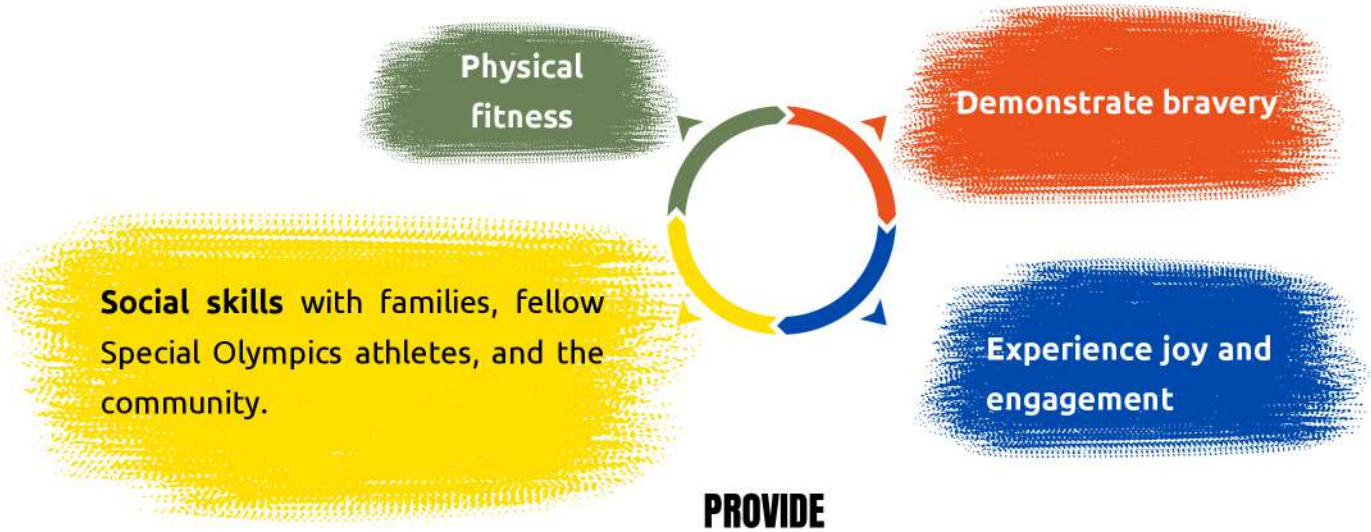
Facilitate engagement	Facilitate the interaction between people with and without disabilities and actively involve people with II in the organization of the Games.
Enhance awareness	Show the world as it should be and shape an inclusive society.
Establish acknowledgment	Advocate for broad and equal social recognition and the right to self-determination.

VISION AND MISSION

Special Olympics is a global movement that creates a new world of inclusion and community, where every person is accepted and welcomed, regardless of ability or disability.



The mission of Special Olympics is to provide every year training and competition opportunities in a variety of Olympic type sports for children and adults with II, giving them continuous opportunities to develop the following aspects:



PROVIDE

Inclusion

Shaping an inclusive society through the power of sports.

Equality

People with ID will have equal access to sport, education, culture, and healthcare.

Empowerment

Athletes find joy, confidence, and fulfillment — on the playing field and in life!

"Let me win
but if I cannot win,
let me be brave in the attempt"

Want to know more

https://www.specialolympics.org

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4 PILLARS OF SPECIAL OLYMPICS

SPORT

Use sport as a driving force to shift the notion of disabilities to abilities, stigma to acceptance, and isolation to involvement.

EDUCATION

Unified Schools Program — Encourage athletic, social, and educational interaction between students with and without intellectual impairment, aiming for friendship, acceptance, and real behavior change.

HEALTH

Health Programs — Provide health information to individuals with intellectual impairment and their families, along with at least a basic level of medical assistance.

UNIFIED LEADERSHIP

Athlete Leaders Program — Shape future generations that embrace tolerance and acceptance for all people in all communities.

SPECIAL OLYMPICS ACTIVITY PROGRAMS

YOUNG ATHLETES

Motor activity and play programs for children with and without intellectual impairment, aged 2 to 7 years.

MOTOR ACTIVITY TRAINING

Designed for athletes with intellectual impairment who cannot participate in official Special Olympics competitions due to their functional abilities.

NON-COMPETITIVE SPORTS OPPORTUNITY

Activity stations are open to people with and without disabilities to provide activities for any skill level.

Want to know more

https://www.specialolympics.org

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SPECIAL OLYMPICS RULES

Eligibility

Individuals with intellectual impairment aged 8 and older can participate in individual and team sports. Competitive divisions are formed with athletes of similar skill levels.

4 Sports Programs

Special Olympics athletes participate in the sports disciplines of their choice, but always within their level of motor ability.

The athletes are divided into groups of at least 3 and at most 8 competitors or teams, respecting age, sex, and skill level.

Age Division

Individual sport:

- Ages 8 to 11;
- Ages 12 to 15;
- Ages 16 to 21;
- Ages 22 to 29;
- Ages 30 and above;
- Additional groups may be created if there are enough competitors over the age of 30.

Team sports:

- Ages 8 to 15;
- Ages 16 to 21;
- Ages 22 and above;
- Additional groups may be created if there are enough competitors over the age of 22.

Skill Levels

It is a **skill-level division** for the formation of competition groups, where the performance variation between the highest and lowest results must range from 15% to 35%. This percentage varies depending on the number of athletes in each discipline or event.

Skill levels are **assessed before each competition**. For example, in athletics, the race time is evaluated. Athletes will compete with others who have similar times, with no more than a 15% difference. In collective disciplines, **specific tests** are used to assess skill levels and compare athletes with each other.

Each athlete has a chance to win, as they **compete** in divisions with athletes of **similar skill levels**, while respecting age groups and sex.

Want to know more

https://resources.specialolympics.org/governance/special-olympics-general-rules

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PROGRAM - UNIFIED SPORT

A program that combines Special Olympics (SO) athletes and athletes without intellectual impairment (partners) in sports teams for training and competition. The age and skill level of the SO athletes and partners, as well as the rankings, are defined based on the sport's rules.

UNIFIED SCHOOLS:

Schools that provide unified sports opportunities at least twice a year.

UNIFIED CHAMPION SCHOOLS®:

A program for schools, from preschool to university, that promote meaningful social inclusion using three interconnected components: Unified Sports®; inclusive youth leadership; and school-wide engagement.

10,154 Sports Competitions in 2021

593,149 Unified Partners (without II)

535,223 SO Athletes (with II)

Promote engagement and social inclusion through sport

Promote confidence and self-esteem among Special Olympics athletes:

- Increased perceptions of sport-specific skills;
- Improved self-esteem and self-confidence;
- Enhanced social skills;
- Increased social relationships;
- Improved health perceptions.

Promote positive attitudes, beliefs, and understanding among Unified Partners:

- Better understanding of individuals with II;
- Increased socialization and friendships;
- Positive beliefs about inclusion;
- Providing the first opportunity for interaction with peers with II.

Want to know more

Special Olympics. **Global Reach Report**. 2021

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SPECIAL OLYMPICS IN BRAZIL

1991 — Implementation of Special Olympics in Brazil

1991 — First Participation in the Summer World Games

1993 — First Participation in the Winter World Games

The Special Olympics in Brazil in 2023 presents the following numbers:

44.000 Athletes' training
19.907 Athletes competing
2.614 Partner athletes
10.000 Volunteers
180 Health Professionals
3.537 Coaches
10 Sports
+100 Events
10 States

SPORT DISCIPLINES


Badminton


Table Tennis


Cycling


Tennis


Open water swimming


Swimming


Athletics


Basketball


Handball


Beach Volleyball


Rhythmic gymnastics


Judo


Boccia


Football

Want to know more

https://specialolympics.org.br/website/wp-content/uploads/relatorios-oeb-relatorio-anual-2021-1.pdf

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PROGRAM - ATHLETE HEALTH

The Athlete Health program of SO takes place at all major competitions to increase access to quality healthcare and effective prevention programs to improve the health of athletes with II.

Individuals with II have more significant health issues than the general population

Higher obesity rates. The global obesity rate for adults was 33.9% for adults with intellectual impairment (II), compared to 12% in the general population.

2X **Higher rates of premature death.** Individuals with II are twice as likely to die before the age of 50 compared to the general population.

Globally, on average, in a team of 10 Special Olympics athletes:

4 have untreated dental decay
1 needs an urgent referral to a dentist

4 need glasses
2 have some form of eye disease (e.g., glaucoma)

5 have significant flexibility issues
4 have balance problems, putting them at risk of injury

3 detected hearing issues

2 have low bone density, although they appear healthy

6 are overweight/obese and at risk of chronic diseases

People with II are less physically active and, therefore, at a higher risk of chronic diseases

2X Adults with II are twice as likely to have **low levels of physical activity** compared to adults without disabilities.

8% of adolescents with II **engage in 30 minutes of physical activity** three times a week.

Want to know more

Special Olympics. **Health & Intellectual Disability**. 2021

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PROGRAM - ATHLETE HEALTH

Special Olympics creates strategies to reduce these health disparities through its health programming:

Partnerships with organizations to provide medical equipment;

Creating communities where quality healthcare is accessible throughout the year;

Changing healthcare systems;

Providing medical screenings: 1.4 million screenings are offered in 127 countries.

Health Barriers in Different Areas:

SOCIETY

- Poverty and economic inequalities;
- Discrimination and stigma;
- Lack of awareness about health disparities in specific disabilities;
- Lack of training for healthcare professionals;
- Lack of health education and health promotion;
- Policies that reduce or restrict access to healthcare services;
- Limited employment opportunities;
- Lack of health insurance.

HOME AND COMMUNITY

- Lack of healthy food choices for individuals living in restrictive environments;
- Caregiver control over healthcare, food choices, and access to physical activity;
- Lack of family resources (e.g., money and transportation);
- Lack of social support from family, friends, neighbors, and community members;
- Lack of coordination between service providers;
- Lack of access to community services (e.g., vaccines, health education, among others) due to forced segregation at home.

INDIVIDUAL

- Use of medications that affect appetite;
- Lack of necessary knowledge to make healthy decisions;
- Physical limitations that reduce the ability to exercise.

Want to know more

Special Olympics. **Health & Intellectual Disability**. 2021

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Special Olympics
FUNfitness

HOW TO CONDUCT A FUNCTIONAL EVALUATION?

FUNfitness addresses the continuous health requirements of Special Olympics athletes.

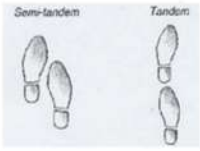
SO athletes have the following functional issues:

- **61% have flexibility problems**
- **68% have balance problems**
- **56% have strength problems**

FUNfitness provides athletes with the opportunity to be examined. The following tests are conducted:

Hamstring flexibility: supine knee extension (passive)

Sit-to-Stand Test



Tandem Stance – Eyes Open

Calf Flexibility: supine ankle dorsiflexion (passive)

Partial Sit-to-Stand Test

Single Leg Stance – Eyes Open

Anterior Hip Flexibility: (Modified) Thomas Test

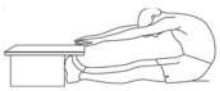
Hand Grip Strength Test

Single Leg Stance – Eyes Closed

Functional Shoulder Rotation: Modified Apley Test

Seated Flexion Test

Timed Up and Go (TUG) Test



Sit and Reach Test

Two-Minute Step Test

Want to know more

https://resources.specialolympics.org/health/funfitness?locale=en

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BUT..., WHAT IS INTELLECTUAL IMPAIRMENT?

Definition of Intellectual Impairment

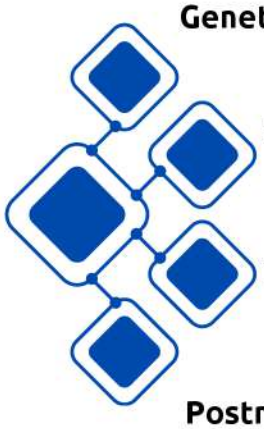
According to the American *Association on Intellectual and Developmental Disabilities* (AAIDD) in 2023, intellectual impairment is a disability characterized by significant limitations in:

Intellectual functioning → IQ test score below 70.

Adaptive behavior → Adaptive behavior: Comparison of daily living skills and functions for individuals of similar age and background (skills necessary to live, work, and play in the community).

The condition presents itself prior to the age of 22. → II can occur at any time before a person turns 22, even before birth.

The predominant causes of intellectual impairment include:



Genetics Genetic disorders, such as: Fragile X syndrome and Down syndrome.

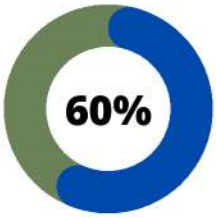
Prenatal Situations during pregnancy that can interfere with fetal brain development, such as alcohol or drug use, malnutrition, viral, bacterial, or parasitic infections, or preeclampsia.

Perinatal Trauma, fetal stroke, or hypoxic events (oxygen deprivation) during labor and delivery.

Postnatal Occuring after birth and can include head injuries, infections, toxins, neglect, and malnutrition.

There are approximately 1,000 different identified causes of II, and with more precise genetic testing, more are being discovered every day.

60% of the causes of intellectual impairment are impacted by syndromic conditions, and 40% by unknown causes.



Want to know more

https://www.specialolympics.org/about/intellectual-disabilities/what-is-intellectual-disability

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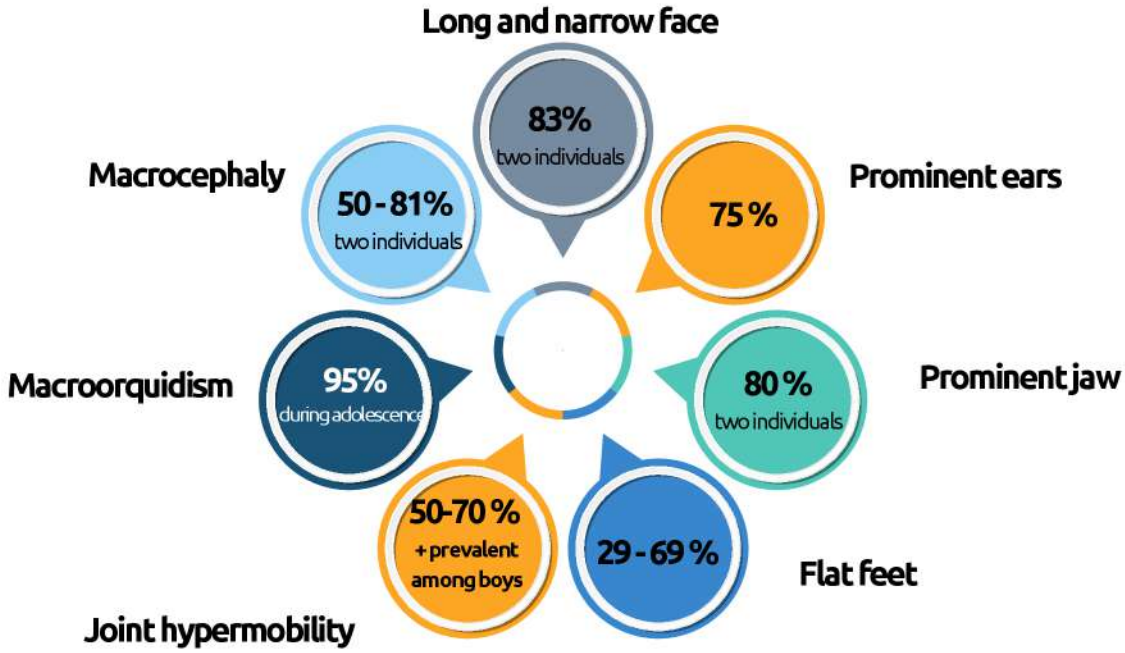
Fragile X Syndrome

Fragile X syndrome (FXS) is a genetic and hereditary condition, a complete mutation of the FMR1 gene, affecting one in every 2,000 men and one in every 4,000 women.



30% of girls affected by the complete mutation have II.

90% of boys affected by the complete mutation have II.

60% of boys are diagnosed with ASD.

90% of affected children exhibit developmental delay.

80% of individuals with FXS have anxiety disorders.

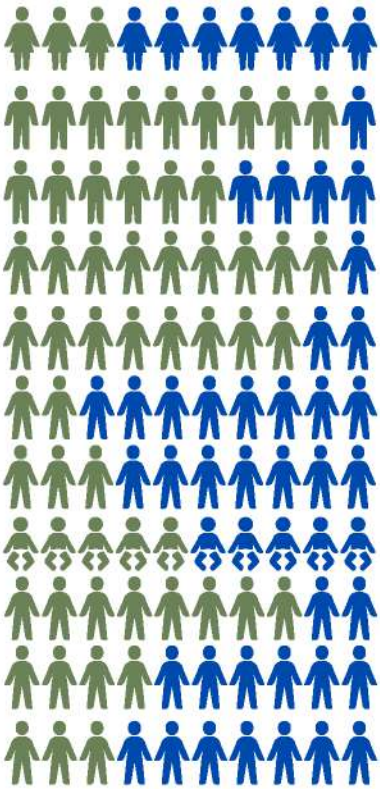
20% of patients with FXS have seizures.

30% have strabismus.

50% have ear infections in childhood.

80% have Attention Deficit Hyperactivity Disorder.

40% exhibit aggressiveness.



More than **30%** have issues with obesity, sleep disorders, and some gastrointestinal dysfunction, including gastroesophageal reflux.

Want to know more

Salcedo-Arellano, M. J.; Hagerman, R. J.; Martínez-Cerdeño, V. Fragile X syndrome: clinical presentation, pathology and treatment. **Gac Med Mex,** v. 156, n. 1, p. 60-66, 2020.

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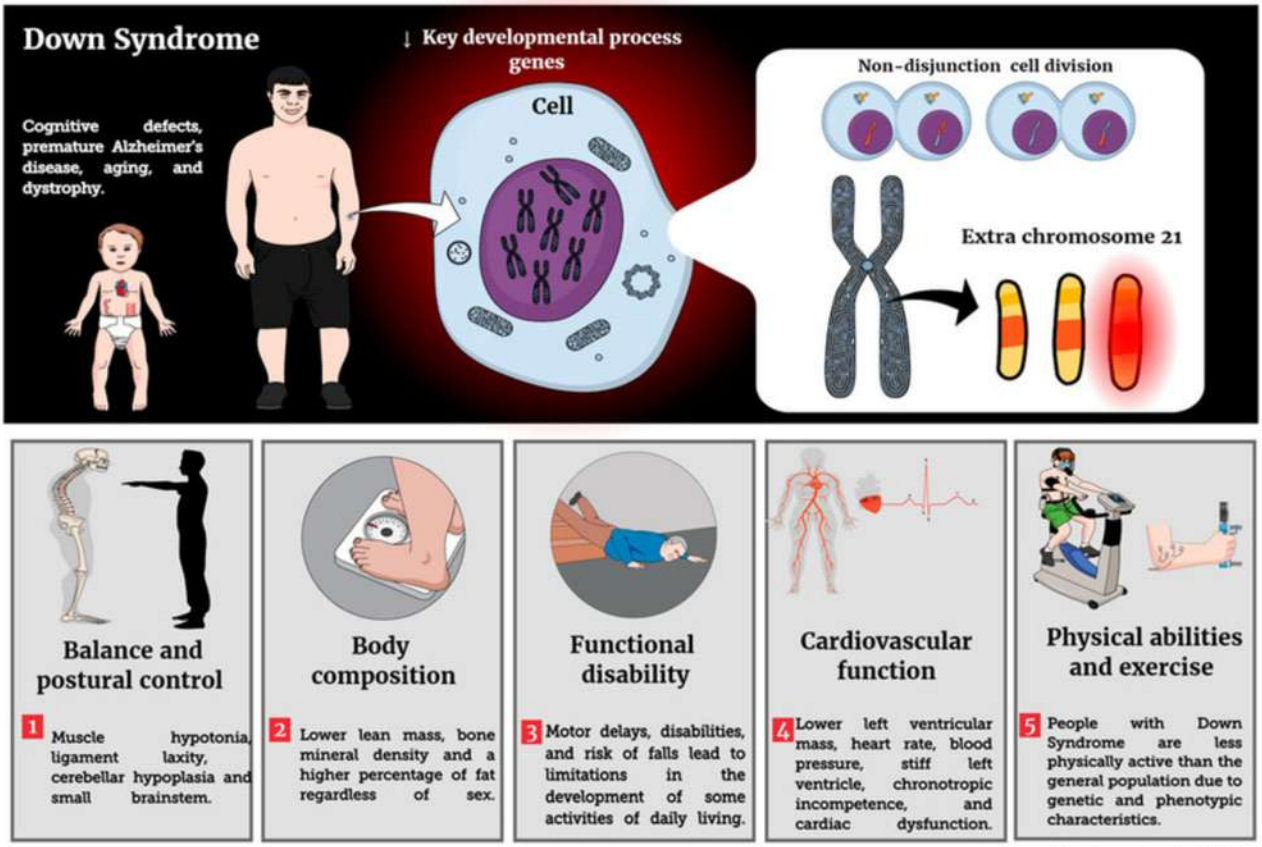
Down syndrome

Down syndrome (DS) is a chromosomal abnormality that occurs in the triplication, either total or partial, of chromosome 21, and II represents a key characteristic of the syndrome. The figure below summarizes the effects of DS on structural and functional decline (MELO et al., 2022).



Melo et al 2022

15%

instability, 15% of individuals with DS have misaligned cervical vertebrae C-1 and C-2, exposing themIn atlantoaxial to potential injuries if they engage in activities that **hyper-extend** or radically **flex** the neck or **upper spine cord**. Such Parasport training and competition activities are **not allowed without medical clearance**, including:


Butterfly stroke


Starting swimming with a dive


Judo


Pentathlon


Football


Artistic gymnastics


High jump


Bodyweight squat

Want to know more

Melo, G.L.R. et al. Resistance training and Down Syndrome: A narrative review on considerations for exercise prescription and safety. **Frontiers in physiology.** 13:948439, 2022. doi: 10.3389/fphys.2022.948439

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CONSIDERATIONS ON RESISTANCE TRAINING FOR INDIVIDUALS WITH DOWN SYNDROME

STEP 1: ASSESSMENT QUESTIONNAIRE

Understand the characteristics of Down syndrome.

- Muscle hypotonia and ligamentous laxity;
- Congenital heart disease;
- Premature aging;
- Reduced balance;
- Reduced strength and muscle mass;
- Flat feet;
- Atlantoaxial instability;
- Communication difficulties;
- Risk of metabolic syndrome;
- Risk of Alzheimer's disease.

Communication
Opportunity
Respect
Playfulness

STEP 2: TRAINING PRESCRIPTION

twice a week

DURATION ~ 40 MINUTES

8 MAXIMUM REPETITIONS

50-70% 8RM
(MODERATE INTENSITY)

BEGIN WITH THE EASY

2 - 3 SERIES

10 - 12 REPETITIONS

90s REST INTERVALS

TYPES OF EXERCISES

MAJOR AND MINOR MUSCLE GROUPS (UPPER AND LOWER LIMBS/BILATERAL)

\+ BALANCE AND CORE TRAINING

PROGRESSIVE OVERLOAD

Want to know

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UNDERSTANDING THE DEAFLYMPICS MOVEMENT

Authors: Santana Jr., Anderson; de Souza Pereira, Luiz Clelia; Fernandes, Karoline; Melo, Geiziane L.; Lima-Trigo, Elke; Cidade, Ruth E.; Willig, Renata Matheus; Winckler, Ciro.

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DEAFNESS

The World Health Organization estimates that there are 430 million people with some level of hearing loss worldwide.

		SILENT ENVIRONMENT
< 20dB	Normal hearing	No difficulty hearing sounds
20 a<35 dB	Mild Hearing Loss	No difficulty hearing conversation
35 a <50 dB	Moderate Hearing Loss	May have difficulty hearing a conversation
50 a <65 dB	Moderately Severe Hearing Loss	Cannot hear most conversations; may have difficulty hearing and understanding loud voices
65 a < 80 dB	Severe Hearing Loss	Extreme difficulty hearing loud voices
80 a <95 dB	Profound Hearing Loss	Cannot hear conversations or most environmental sounds
95 dB or higher	Complete Hearing Loss / Deafness	May not have a problem unless the sound is close to the ear. May have difficulty locating sounds

Adaptado WHO, 2021

According to the 2022 Demographic Census, approximately 2.51 million people in Brazil have severe hearing loss or deafness, representing 1.2% of the Brazilian population. These values are influenced by the considerable increase in prevalence after the age of 60.

IBGE, 2023

In Brazil, according to Decree 3.298/1999, a person is considered deaf when there is partial or total bilateral hearing loss of 41 dB or more.

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HEARING LOSS

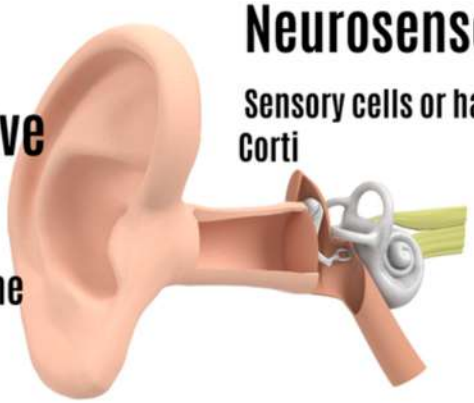
There are different causes that impact hearing loss. However, in Parasport, we must understand that causes of neurosensory origin, in addition to affecting hearing, can also lead to balance impairment due to affecting the individual's vestibular system.

Causes

Intrauterine infections
Hypoxia
Medicines
Meningitis
Otitis media
Hypertension
Abdominal obesity
Sensory deterioration
Among others

Conductive

Occurs in the outer and middle ear



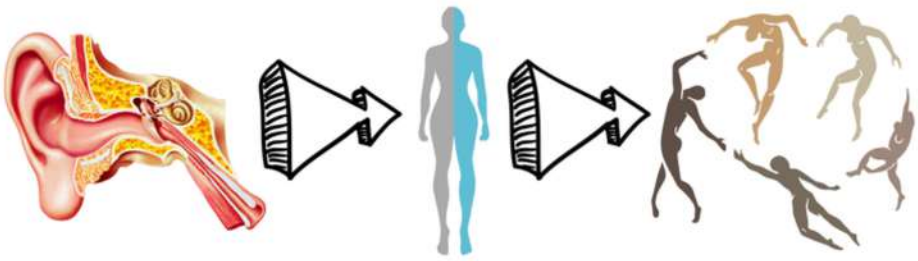
Neurosensory

Sensory cells or hair of Corti

Central neural deafness

Auditory pathway in the brain system, subcortical regions or temporal cortex.

Understanding this relationship between the origin of the impairment (congenital or acquired), the affected structure, and the level of hearing loss impacts the understanding of functionality, the definition of strategies for teaching Parasport, and the care for our student/athlete.



Biological **Functionality** **Pedagogical**

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TIMELINE OF DEAF PARASPORTS

1760

The first school for the using Sign Language founded by Charles-Michel de l'Épée (1)

1857

Foundation of the Institute for the Deaf-Mutes of Rio de Janeiro (2)

1870

Ohio School/USA organizes Baseball and Rugby competitions (3)

1880

Foundation of the first Deaf Football clubs in Scotland (4)

1910

First international football match for the deaf Scotland and England (5)

1924

International Committee of Sports for the Deaf - 1st Silent Games (6)

1930

The Student Union of INES organized sports competitions

1959

Deaf-Mute Rio de Janeiro Federation (8)

1965

Brazil's affiliation with the International Committee for Sports for the Deaf (9)

1979

Systematization of the Deaf Sports Movement in Brazil (10)

1984

Foundation of the Brazilian Confederation of Deaf Sports (11)

1993

First Brazilian Participation in the Deaflympics (12)

2009

1st Brazilian medal at the Deaflympics, Alexandre S. Fernandes (13)

2017

1st Gold Medal at the Deaflympics: Guilherme Maia

2022

Deaflympics Brazil

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STRUCTURE OF DEAF PARASPORTS

International Committee of Sports for the Deaf
ICSD

— Founded in 1924.
— Main event: Deaflympics (Summer: 24 editions, Winter: 18 editions).
— 177 affiliated countries.

Pan-American Organization of Sports for the Deaf
PANAMDES

— Founded in 1971.
— Main event: Pan American Games for the Deaf.

Brazilian Confederation for Deaf Sports
CBDS

— Founded in 1984 in the city of Santos/SP.
— Sports federations present in 20 states.
— 8 participations in Summer Deaflympics.
— 1 participation in Winter Deaflympics.

Want to know more

https://cbds.org.br/cbds

https://panamdes.com

https://www.deaflympics.com/icsd

*Ammons, D. K. **Deaf Sports & Deaflympics**. ICSD 2008

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DEAF ATHLETE CONCEPT

"Deaf sports are important in the lives of deaf individuals at the physical, social, and mental levels. It has been said that deaf athletes do not feel disabled in sports. They claim that sign language gives them more power, and they have no communication problems in deaf sports. They have also experienced empowerment in most sports, but integration may weaken individual empowerment due to inadequate social communication with hearing peers."

Siv Fosshaug, 2006

In Brazil, the term to describe this population is **deaf athlete**.

Franco, 2019

ELIGIBILITY

Eligibility: **A hearing loss of no less than 55 dB in the better ear.**

Assessment: **Audiometric Evaluation.**

Competition categories: **Single class.**

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SUMMER DISCIPLINES

Athletics

Badminton

Basketball

Bowling

Cycling

Football

Futsal

Golf

Handball

Judo

Karate

Olympic Wrestling - Freestyle and Greco-Roman

Mountain Biking

Swimming

Orienteering

Taekwondo

Tennis

Table Tennis

Shooting

Volleyball

Beach Volleyball

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WINTER DISCIPLINES

Curling

Alpine Skiing

Cross-Country Skiing

Hockey

Snowboard

DISCIPLINES

36

DEAFLYMPICS DISCIPLINES

27

DECISION-MAKING DISCIPLINES

Chess

OTHERS DISCIPLINES

Rugby

American Football

Cricket

Artistic Gymnastics

Football 7

Beach Soccer

Diving

Water polo

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RULE ADAPTATIONS

The rules of sports **are not modified**, but some sports have visual adaptations to assist the deaf athlete, and these are:

- Swimming and athletics: Start with the assistance of three colored lights placed next to the starting block or starting line.
- Futsal and football: Flagmen are used by all referees.

In other sports, the refereeing team is instructed to highlight all necessary movements to signal infractions or provide information.

CULTURAL CONCEPT OF DEAFNESS

"Deaf people are coming together not to isolate themselves, but to gather power and information for life in a society where sound and spoken language prevail."

Siv Fosshaug, 2006

"...we are first deaf and then athletes."
David Stewart, 1990

"A sign language interpreter is a prerequisite in most sports, but an interpreter cannot eliminate all communication barriers."

Siv Fosshaug, 2006

- **Communication** is the fundamental tool for the pedagogical construction of sports for deaf individuals. The use of Sign Language is a structure that should be employed in activities directed at deaf people and is **mandatory** in inclusive activities with both deaf and hearing individuals.
- The deaf student/athlete will only be fully included when they can interact with other members of the group in an integral manner.
- It is important to highlight the **deaf diversity**, meaning that there are deaf individuals who primarily use Libras, as well as oralized deaf individuals, implanted deaf individuals, deaf individuals who have not integrated into the deaf community, those with no references to either the deaf or hearing community, and even those who are deaf-blind.
- It is **NOT** a rule that a person who is deaf automatically knows Sign Language.

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TEACHING AND LEARNING

The instruction process for the deaf student/athlete is based on **tactile and visual information**, with the visual being predominant.

Therefore, the teacher/coach needs to manage the following aspects:

- Always position oneself in a way that all students can establish visual contact;
- Use communication resources based on Sign Language and implement other visual resources;
- Establish strategies to stop the activity when necessary;
- Establish progression of game rules, as well as progression in the complexity of the game (e.g., strategies and technical variations);
- Be careful not to disrespect the culture of deaf students.

Signal Language

VOICE

Amplification

Communication apps

Visual illustrations

Visual Instructions

Visual assets

Want to know more

www.paradesporto.unifesp.br

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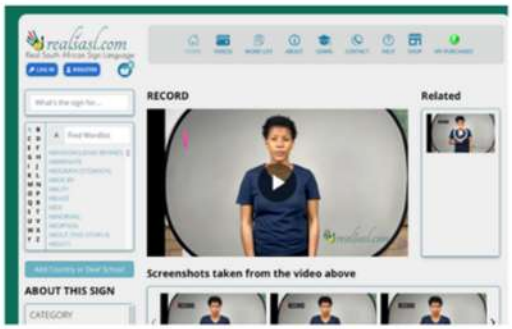
SIGNS LANGUAGE DICTIONARY

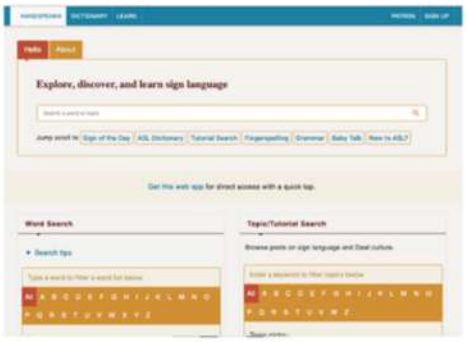


South African Sign Language

https://www.realsasl.com

British Sign Language

https://www.signbsl.com



American Sign Language

https://www.handspeak.com/word/

Australian Sign Language

https://auslan.org.au/dictionary/

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GLOSSARY OF PARASPORT

Authors: Winckler, Ciro; Melo, Geiziane L.; Lima-Trigo, Elke; Cidade, Ruth E.; Willig, Renata Matheus.

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ACCESSIBILITY

Refers to the conditions or characteristics of an environment, product, service, or information being easily usable or perceivable by all individuals, regardless of their physical, cognitive, or sensory abilities.

ADAPTED PHYSICAL ACTIVITY

Adapted Physical Activity (APA) refers to a field of study and practice focused on providing opportunities for physical activity to individuals with disabilities or special needs. This encompasses a variety of activities, including sports, recreation, dance, fitness, physical education, and rehabilitation. APA aims to adapt and modify physical activities based on the interests, abilities, and limitations of individuals with disabilities, promoting their participation and empowerment. It is implemented in settings such as schools, rehabilitation centers, and community programs to offer inclusive and adapted physical activity experiences for people of all ages and abilities.

Hutzler; Sherril, 2007

ATHLETE

Athletes with a disability are also sometimes referred to as para athletes. When the athlete is part of the Deaflympic movement, the term deaf athlete is used. Furthermore, athletes who have competed in a Summer or Winter Paralympic Games can be referred to as Paralympic athletes.

Winckler, 2023

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ABLEISM

Ableism is a form of discrimination that devalues and differentiates people with disabilities based on a societal model of perceived physical capacity. It assumes the existence of an ideal way of being and judges all characteristics that deviate from this model as inadequate. Ableism permeates various spheres of social life, including sports, and can deprive people with disabilities of opportunities to engage in physical or sporting activities.

Seron et al., 2021

ADAPTED SPORT

Adapted Sports refer to sports modified or created to meet the unique needs of people with disabilities or other specific characteristics. These include competitive athletic opportunities and recreational activities that promote a healthy lifestyle. Adapted sports can be practiced in unified, segregated, individualized, or parallel formats. The term is used because it emphasizes the adaptation of the sport rather than focusing on the disability, promotes participation in inclusive environments, encourages the creation of sporting opportunities, and supports excellence in sport across various participation environments.

Winnick; Porreta, 2016

ADAPTED PHYSICAL EDUCATION

Adapted Physical Education emphasizes the educational aspect, providing adapted physical education programs and support within the school environment. Its goal is to meet the unique needs of students with disabilities by modifying activities, equipment, and instructional strategies to ensure their safe and successful participation in physical education classes.

Hutzler; Sherril, 2007

PARASPORT

Parasport refers to the set of disciplines practiced by people with disabilities. This concept is understood not as something parallel but as something similar and occurs closely and jointly with other manifestations of sport.

Winckler et al., 2023

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HEARING IMPAIRMENT

A broad term encompasses a range of hearing losses, from mild to severe. People with hearing impairments may struggle to hear specific frequencies or understand speech in noisy environments. Deafness refers to severe or profound hearing loss in both ears. People who are deaf experience significant difficulty hearing sounds and may rely on alternative forms of communication, such as sign language or lip reading. They may hear only thunderous sounds or not hear anything at all.

WHO, 2021

PHYSICAL IMPAIRMENT

Physical impairment refers to a loss or abnormality in the structure or function of the body. This can include disabilities in bodily systems such as the musculoskeletal system, sensory organs, or other physiological functions. These disabilities can result from various causes, such as injuries, diseases, or congenital conditions.

Physical impairment may affect a person's ability to perform certain activities or fully participate in daily life. Examples of physical disabilities include the loss of a limb, paralysis, joint or growth limitations.

WHO, 2021

PLEGIA PARESIS

Plegia is the complete loss of muscular function or paralysis in a specific part of the body. It can occur as a result of nerve or muscle damage and affect one or more limbs or even the entire body.

Conversely, **Paresis** refers to a partial loss of muscle function or weakness in a specific part of the body. It is characterized by a reduced strength and control in the affected muscles, but some degree of movement is still possible.

These definitions can be associated with the affected body areas, such as hemi, para, or (quad) tetraplegia.

Maki et al., 2006

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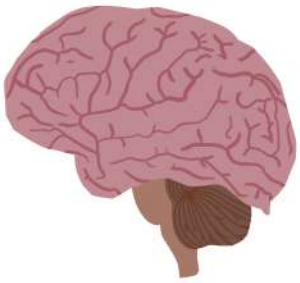
ATHETOSIS
SPASTICITY
ATAXIA



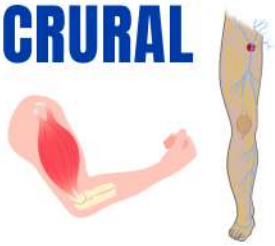
Athetosis: A condition resulting from damage to the basal ganglia in the brain, characterized by slow, abrupt, uncoordinated, and involuntary movements. People with athetosis often have fluctuating muscle tone.

Spasticity: A condition that occurs due to damage to the motor areas of the cerebral cortex. It is characterized by increased muscle tone, primarily in the flexor muscles and internal rotators.

Ataxia: A condition resulting from damage to the cerebellum, responsible for balance and muscle coordination. People with ataxia have difficulties with balance, coordination, and muscle control. They may exhibit a wide-based gait, struggle with basic motor skills, and display involuntary eye movements (nystagmus).

Pakula et al., 2009

BRACHIAL
CRURAL



Crural refers to the region of the legs or lower limbs, while brachial refers to the region of the arms or upper limbs. These terms are used to describe the reduction in muscle strength in these areas, such as hemiparesis crural (reduced strength in the legs) or brachial paraparesis (reduced strength in the arms).

Torres; Diccini, 2006

INTELLECTUAL IMPAIRMENT

Intellectual Impairment refers to a condition characterized by limitations in cognitive functioning and adaptive behavior. Individuals with intellectual impairment have impacts in areas such as communication, self-care, social skills, and problem-solving. This condition is usually diagnosed before the age of 18 and can vary in severity, ranging from mild to profound. It affects a person's ability to learn, reason, and manage daily life independently.

Sakalidis et al., 2021

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MULTIPLE IMPAIRMENTS

Multiple impairments refers to the presence of several disabilities or impairments in an individual. It is characterized by the co-occurrence of disabilities. It can be intellectual impairment associated with physical impairment, as well as the potential association with other conditions like additional sensory impairments and medical comorbidities. Individuals with multiple disabilities often have complex needs and require extensive support in various aspects of their daily life.

Johnels, Vehmas; Wilder, 2023

VISUAL IMPAIRMENT

Visual Impairment refers to a condition in which the visual system is affected by a problem in the eyes, resulting in a reduction in one or more visual functions. It is a broad term used to describe issues in the structure or function of the eyes due to a health condition. Visual impairment can range from mild to severe and may affect both distance vision and near vision. It can be subdivided into blindness and low vision.

WHO, 2019

DEAFBLINDNESS

Deafblindness refers to a condition in which an individual has severe impairments in both vision and hearing. The severity of the impairment can vary, ranging from mild impairment in one sense to severe impairment in both senses. Deafblindness can have different definitions in the scientific literature, with some being based on sensory impairment measures and others based on the resulting functioning.

Larsen; Damen, 2014

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DISABILITY IN OTHER HEALTH CONDITIONS

This refers to chronic or acute health problems that result in limitations of strength, vitality, or alertness and adversely affect a child's educational performance. Examples of included conditions are heart diseases, attention deficit hyperactivity disorder, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, and diabetes.
These conditions are not directly associated with Parasports but are relevant to Adapted Physical Education or Adapted Sports.

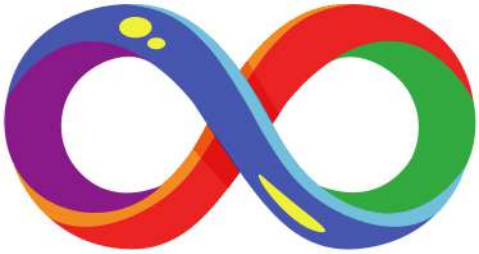
Winnick; Porreta, 2016

SPECIAL NEEDS

Special Needs refers to individuals who require additional support and accommodations due to physical, cognitive, emotional, or developmental challenges. These challenges may affect their ability to fully participate in educational, social, or other activities. Special needs can encompass a wide range of conditions, including, but not limited to, disabilities, learning differences, behavioral disorders, and other health conditions. The term emphasizes the need for personalized support and services to ensure equitable opportunities and inclusion for individuals with diverse abilities.

Hutzler; Sherril, 2007

AUTISM SPECTRUM DISORDER



Autism Spectrum Disorder (ASD) is a developmental disorder characterized by deficits in social communication and interaction, as well as the presence of restricted and repetitive patterns of behavior, interests, or activities. It is a condition that impacts the individual, affecting them in various ways, and can persist throughout their lives.

Durkin et al., 2014

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INCLUSION

Full inclusion refers to the complete and meaningful participation of people with disabilities in all aspects of society. It goes beyond basic access and accommodation, emphasizing creating environments that promote acceptance, belonging, and equal opportunity for people with disabilities. Full inclusion recognizes the importance of interdependence, mutuality, and flexibility, aiming to foster reciprocal relationships within the community. It involves a shift from a focus on independence to interdependence, where people with disabilities are valued and included as equal members of society.

Parmenter, 2014

SCHOOL INCLUSION

School Inclusion refers to the educational practice of educating students with disabilities in education settings alongside students without disabilities. It is based on the belief that separate education may not be equitable, and that students with disabilities should be educated with their peers to the maximum extent appropriate. Inclusion promotes a welcoming and supportive educational environment that values and respects individual differences, allowing all students to participate, regardless of gender, race, motor abilities, or challenging conditions (disabilities). It emphasizes the importance of support services and modifications to ensure successful implementation in general education environments.

Winnick; Porreta, 2016

EQUITY

Equity is the fair and legitimate treatment of all individuals, recognizing and addressing historical and contemporary disadvantages and disparities. It involves creating equal opportunities and reducing barriers to ensure that everyone has access and equal outcomes.

Wolbring; Lillywhite, 2021

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ASSISTIVE TECHNOLOGIES

Assistive technologies is the field of knowledge that encompasses products, resources, methodologies, strategies, practices, and services aimed at promoting the functionality and participation of people with disabilities, impairments, or reduced mobility. Its focus is to provide autonomy, independence, quality of life, and social inclusion.

Brasil, 2009

ENHANCED COMMUNICATION

This term is used to describe strategies and techniques that assist individuals with communication difficulties to express themselves more effectively. It involves the use of resources such as graphic symbols, alternative and augmentative communication systems, assistive technologies, and support strategies to promote understanding and language expression.

Brasil, 2009

MOBILITY AIDS

Mobility aids refer to resources, equipment, or devices that assist individuals with disabilities or reduced mobility in moving more independently. This can include wheelchairs, walkers, canes, motorized scooters, and other similar devices. The goal of mobility aids is to promote autonomy and quality of life for these individuals, enabling the overcoming of mobility barriers and greater social inclusion.

Brasil, 2009

LONG CANE

A long cane is a type of mobility aid used by people with visual impairments or low vision. It is characterized by being longer than conventional canes, providing additional support during movement. The long cane is typically made from lightweight materials such as aluminum and can be adjusted according to the user's height. Colors include: white for individuals who are blind, green for those with low vision, and red and white for individuals who are deafblind.

Brasil, 2009

Want to know more

Almeida, R. et al. Cadeira de Rodas no Paradesporto. Santos: Paradesporto Brasil+ acessível 2023.

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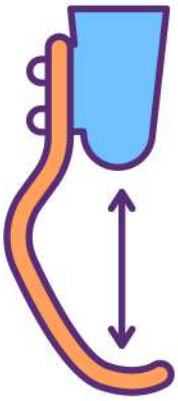
ORTHOSIS

An orthosis is a device used to support, correct, or protect a part of the body. It is designed to improve the function and alignment of the musculoskeletal system. Orthoses can be custom-made or prefabricated and are commonly used in orthopedic and rehabilitation settings. They are frequently used to treat conditions such as musculoskeletal injuries, deformities, or post-surgical recovery. Orthoses can be made from various materials, including thermoplastics, composites, and foams, and can be manufactured using rapid prototyping technologies like 3D printing.

Barrios-Muriel et al., 2020

PROSTHESIS



Prostheses are artificial devices designed to replace or enhance a missing or compromised part of the body. They are commonly used in the field of orthotics to provide support, correction, or protection, as well as to restore functionality in people with musculoskeletal injuries or dysfunctions. Prostheses can be custom-made to meet the specific needs and anatomical shape of the individual or the Parasport discipline, and can be manufactured using various rapid prototyping technologies. These technologies allow the production of high-quality prosthetic devices with customized fit, shorter manufacturing times, and greater comfort for the athlete.

Barrios-Muriel et al., 2020

PETRA

Petra or Running Frame, is a three-wheeled racing tricycle designed for individuals with coordination disabilities who have limited or no ability to walk without assistence. It consists of a seat and a chest plate for support, but without pedals, with propulsion provided by the contact of the feet on the ground.

Hjalmarson et al., 2020

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TRICYCLE

A tricycle is a three-wheeled vehicle used as an alternative to traditional bicycles. It consists of a seat for the rider, three wheels, a propulsion system, and a steering mechanism. Tricycles can be designed with different configurations, such as upright or recumbent tricycles, depending on the user's needs and preferences. They are intended for individuals who have balance or mobility difficulties, such as athletes with physical impairment or those with health issues that prevent them from riding a traditional bicycle.

Schneebeck, Mohr; Bannon, 2020

WEIGHTLIFTING GLOVES

Athletes with amputations, spasticity, spinal cord injuries, among other conditions, may need an adapted weightlifting glove (orthosis) that secures the weight or bar using Velcro, straps, rings, or hooks when they do not have complete grip function or when it is limited. The equipment should provide stability for pushing and pulling movements, allowing the athlete to develop muscle balance effectively.

BIO-PSYCHO-SOCIAL

The bio-psycho-social approach is a model that considers the interaction between biological, psychological, and social factors in understanding health and well-being. For physical education professionals, this means recognizing that health and physical performance are influenced by a combination of biological factors (such as health conditions and physical abilities), psychological factors (such as emotions and motivation), and social factors (such as the social environment and potential interactions). By adopting this approach, physical education professionals can develop interventions and programs that consider all these aspects, aiming to improve the health and physical performance of their students/athletes.

WHO, 2019

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PARASPORT SCENARIOS AND REGULATIONS IN BRAZIL

Who is included in this scenario: Students with physical, intellectual, or sensory disabilities, global developmental disorders, and exceptional abilities or giftedness.

Who is included in this scenario: Person with a disability due to physical, mental, intellectual, or sensory limitations.

Tool
International Classification of Functioning (ICF)

EDUCATIONAL

Law of Educational Guidelines and Foundations
Lei n.º 9.394/ 1996

HEALTH

National Health Policy
Ordinance No. 687 MS/2006

FEDERAL CONSTITUTION OF 1988

Principle of Equality of Rights

Who is included in this scenario: People with disabilities due to physical, mental, intellectual, or sensory limitations.

Brazilian Law on Inclusion

General Law of Sport

PERFORMANCE

General Sports Law
Law No. 14597/23

Classification System

LEISURE

Brazilian Law on Inclusion
Law No. 13146/15

General Sports Law
Law No. 14597/23

Who is included in this scenario: Specific Codes and Regulations of the disciplines.

Berenice Piana Law No. 12.764/2012

National Policy for the Protection of the Rights of Persons with Autism Spectrum Disorder.

A person with autism spectrum disorder is considered a person with a disability for all legal purposes.

Want to know more
Portal de Legislação da Câmara dos Deputados
https://www.camara.leg.br/legislacao_

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