

Assistive Technology for Sports & Recreation



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Objectives

Upon completion of the session, participants will . . .

- 1) Be able to list 5 AT professional skills or areas of knowledge that can be applied to sports & recreation.
- 2) Understand at least 6 AT options available.
- 3) Identify 3 possible funding sources for equipment.
- 4) List 3 resources for additional information.



Concept #1

Apply Fundamentals of AT Interventions to Sports & Recreation

- HAAT Model
 - Human
 - Activity
 - AT
 - Context



Diagram from *Assistive Technology Principles & Practice*
Cook & Hassey, 2003, Chapter 2

- Hierarchy of AT



Photos from
US Paralympics

www.assistedcyclingtours.org



Bicycle Trips for People with Developmental
and/or Physical Disabilities and Their Families

Concept #2

Complete comprehensive interdisciplinary evaluation, assessment & treatment plan

EVALUATION

- Interview
- Medical background
- Physical assessment
- Social profile
- Functional evaluation
- Environmental profile
- Client goals



Clinician Evaluation



Got RANGE?



Functional Evaluation



Assessment & Treatment Plan

- Based on evaluation
- STG & LTGs identified
- Individualized treatment plan
- Outcome measures



Seattle to Portland Bike Ride – 200 miles in 2 days
Staff and Veterans – VA Puget Sound

Concept #3

Provide opportunity to explore potential sports & recreation activities

- Multiple and varied options available
 - Understand sport specific requirements
 - Diagnosis & prognosis
 - Functional capabilities
 - Interests & preferences (theirs, not yours)
 - Equipment requirements

Throwing Chairs





Handcycling





Power Soccer



Boccia



Table Tennis



Visual Impairment



Photos from US Paralympics

Concept #3 continued

Provide opportunity to experience varied sports & recreation activities

- Avoid imposing limits . . .
 - Based on own preferences/interests
 - Based on own knowledge deficits
 - Based on client age, physique, intellect, etc.

Recreation & Sports

Never too old . . .



Nor too young

Sport Specific Equipment

Include athlete classification for team & competitive sports

- Varies for each sport
 - Tests based on sport specific demands
 - Class descriptions specific to each sport
- Clinical bench testing
- Functional evaluation during activity

Classification

- Comprehensive evaluation
- Observation
- "levels the playing field"
- Impacts technology recommendations



Observe During Performance



Concept #4

Provide AT clinical expertise for sports & recreation participation

Seating Interventions

- Comfort
- Postural Stability
- Performance
- Skin protection
- Musculoskeletal injury prevention
- Must be addressed specific to the technology

Do NOT try this at home . . .



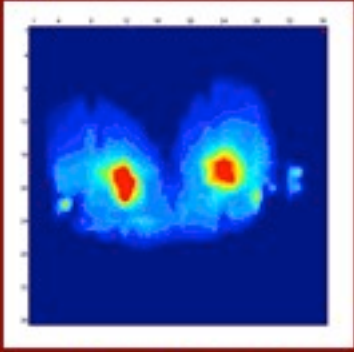
Why Seating for Sports?

Sitting Surface

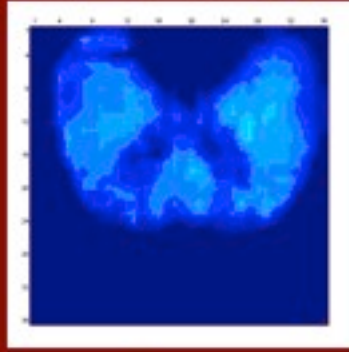


Trunk & Extremities

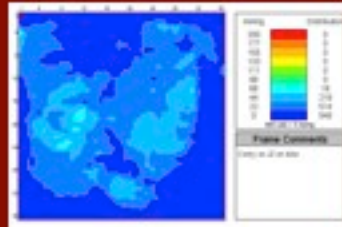
Handcycle Custom Seat



Standard foam cushion



Prototype



Seating for Sports





Technologies for Hand Function



Support for Hand Function



Concept #5

Provide comprehensive education & training

Associated Mobility Skills

- Transfers
- Sport specific techniques and skills
- Equipment management
- Training techniques / cross training

Handcycle Transfer



Equipment Management



Travel



Comprehensive Education

Medical/Physical/Physiological

- Skin protection
- Joint preservation
- Energy conservation
- Physiologic response
- Medications



Example: SCI Specific Issues

- Exercise response altered
- Autonomic response
 - HR, BP, temperature
- Skin protection
- Bone density
- Bladder/bowel management
- Body stabilization/supports
- Pain
- Medications

