

State of the Science Symposium
September 21, 2012

Dial Em' In:
Adaptive Sports & Recreation Technologies



Defining
EXCELLENCE
in the 21st Century

A Victory for Disability Awareness



The “Blade Runner”

Adaptive Sports & Recreation Technologies

Introduction

Kendra Betz, MSPT, ATP

Prosthetics Clinical Coordinator

VA Central Office, Washington DC

Kendra.Betz@va.gov

(303) 639-7020 → Denver

Prosthetic &
Sensory Aids
Service

Maximizing Veteran Independence



Adaptive Sports & Recreation Technologies

Objectives

By the end of this session, participants will be able to:

- Identify the adaptive sports equipment needed to participate in adaptive sport and recreation activities.
- Summarize the latest trends in rehabilitative adaptive sports equipment.
- Assess an individual's unique equipment needs to procure the optimal sports equipment based on the individual's disability, level of participation, and goals.
- Identify resources for pursuing rehabilitative adaptive sports equipment.

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Overview Adaptive Equipment



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Cycling



VETERANS HEALTH ADMINISTRATION

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Alpine Skiing



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Video Demonstrations

- Sled hockey
- Cycling
- Wheelchair Racing
- Skiing



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Handcycle Trends



2002



2012

VETERANS HEALTH ADMINISTRATION

Recreation vs. Competition



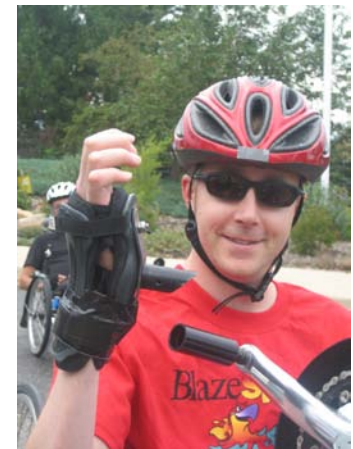
Adaptive Sports & Recreation Technologies

What is Assistive Technology Anyway?

Assistive Technology is any item, piece of equipment or product system whether acquired commercially off the shelf, modified, or customized that is used to increase or improve functional capabilities of individuals with disabilities.

(Assistive Technology Act, 1998, PL 105-394, S.2432)

- Supports function in a varied of environments
 - (home, work, school, community,)
- Engage in meaningful activities
 - (ADLs, play, learn, communicate, work, travel...)
- Achieve independence at maximum level possible



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How do we figure this out?

- HAAT Model

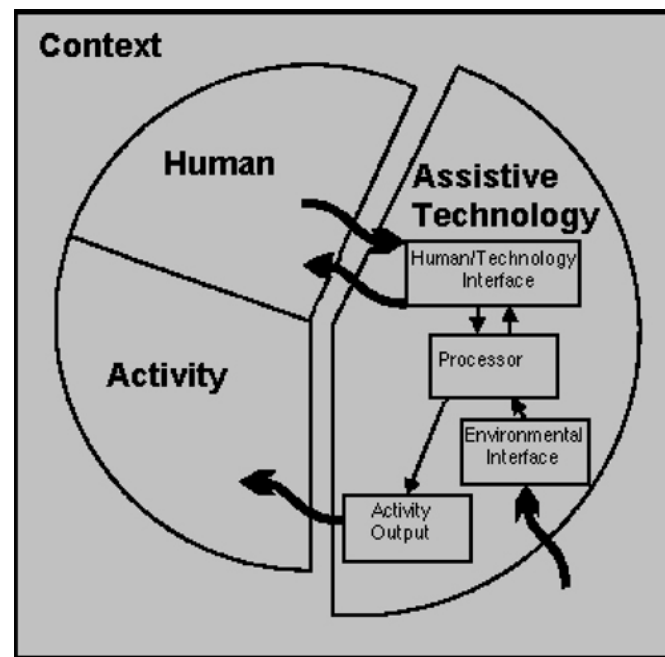
- Human
- Activity
- Assistive technology
- Context

- Functional task analysis

- i.e. the SPORT

- Hierarchy of AT

- No tech → low tech → high tech
- Commercially available → custom medical devices



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HAAT Model Applied to Adaptive Sports

Relative to identified impairments and options . . .

- What is the typical “standard” (if any) equipment utilized for the activity?
- Within context of identified impairments, can the client use the standard equipment safely and effectively?
- If not, can the standard equipment be modified for safe and effective use?
- If not, what technology options are available to support participation in the activity?
- Which interventions or combination of interventions best support independence and participation?

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Hierarchy of AT Applied to Adaptive Sports



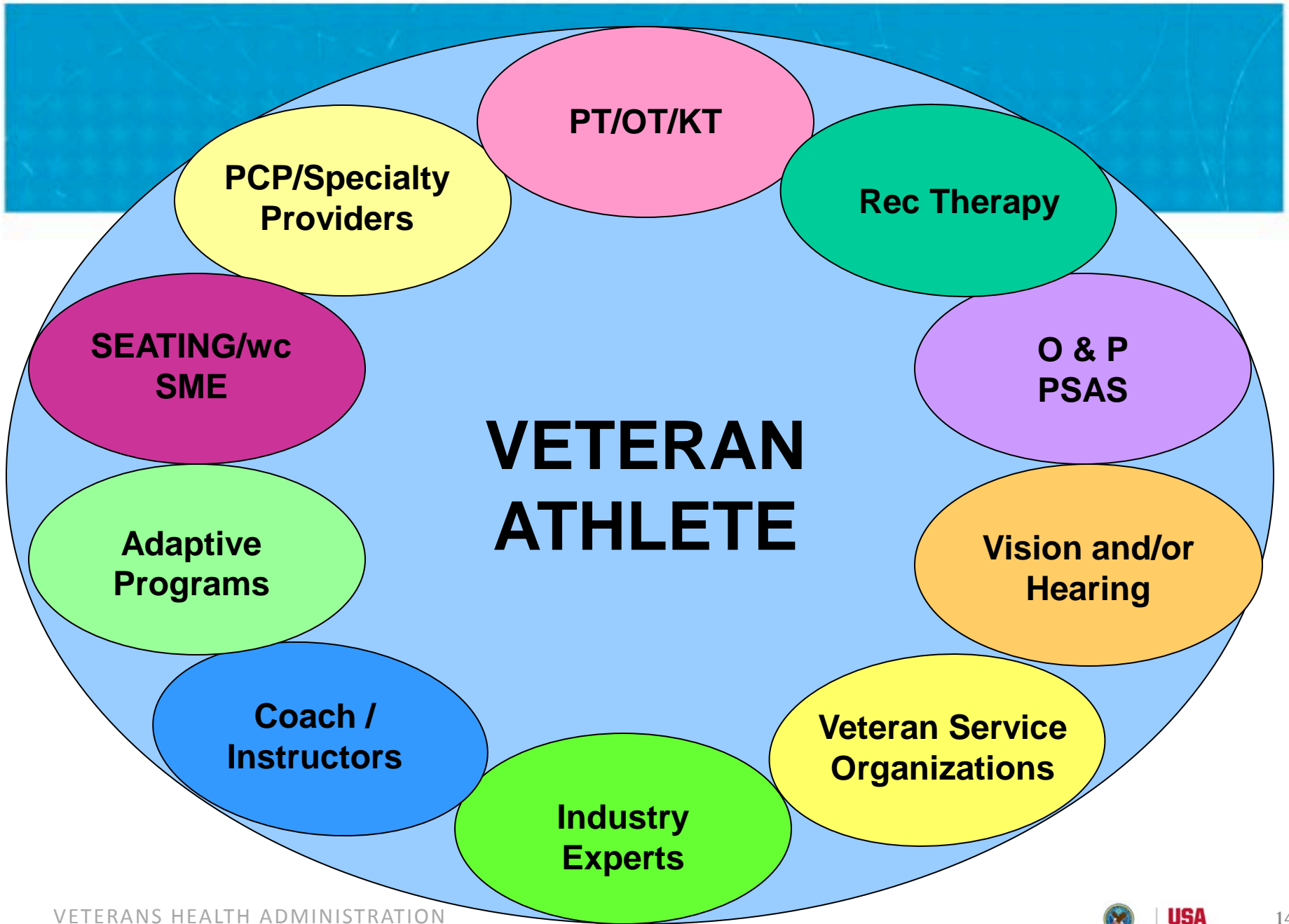
Swimming
No Tech



3-Track Skiing
Low Tech



Off Road Cycling
High Tech



Adaptive Sports & Recreation Technologies

Seating for Sports

Provide clinical expertise for athlete support . . .

- Comfort
- Postural stability
- Skin Protection
- Injury Prevention
- Performance



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GOT RANGE?



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Seating for Sports



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Seating for Sports



Positioned for stability, mobility, action, performance



Positioned for stability

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Prosthetic Limbs & Sports



PROSTHETISIS OR NOT?

Depends on . . .

- Nature of amputation(s)
- Health of residual limb(s)
- Co-morbidities
- Athlete's age
- Time with amputation
- Functional abilities/skills
- Sport specific requirements
- Participation goals
- Personal preferences

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Prosthetic Limbs & Sports



“It’s Just Like Riding a Bike . . .”



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The Power of “AND” . . .

- 1) Handcycling
- 2) track
- 3) swimming,
- 4) skiing
- 5) tennis
- 6) basketball . . .



C-leg, AFO & custom wheelchair



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Additional Resources

- **Challenged Athletes Foundation**
 - Operation Rebound for non-adaptive equipment & athlete support
- **Military Support Organizations**
 - Such as Team Semper Fi Fund for injured Marines
- **Veterans Service Organizations**
 - i.e. PVA, Wounded Warriors, BVA, DAV, VFW, etc.
- **Disability Specific Support Programs**
 - i.e. Christopher Reeves Foundation, MS Society, ALS Foundation
- **Other regional/national Non-Profit Support Programs**
 - Such as Operation Comfort, Kate Kimberly Foundation

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Key “*Take –Aways*” . . .

- Work as a team
- Evaluate the athlete
- Analyze the sport specific activity
- Identify participation challenges
- Consider/trial available solutions
- Provide athlete education & training
- ***GET OUT THERE!***

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GET OUT THERE!



on to case reviews →

TRATION



U.S. Department of Veterans Affairs

To love what you do and feel that it matters,
how could anything be more fun?

~ Catherine Graham

Thank You!

Kendra Betz, MSPT, ATP
Rehabilitation & Prosthetics Service
VA Central Office

Kendra.Betz@va.gov

(303) 639-7020



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