



ADAPTIVE SPORTS IN THE NEUROSCIENCES

- the benefit of sports after functional impairment

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*With special presentation by Rev. Julius Lee and
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DISCLOSURES

- No relevant financial disclosures with any companies that would influence this content
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PATIENT STORY

60yoM with AIS C SCI mobilizing with mWC p/t VAMC w/ CC decreased access to community, recreational activity.

- This may be your patient with...
 - chronic ASCVD s/p neurologic injury, or
 - chronic T2DM suffers an amputation, or
 - heart transplant s/p cardiac rehab
- Outcomes, treatments, longitudinal care?
- HRQOL
 - Cardiovascular health
 - Gait speed
 - Balance
 - Independent mobility
 - Community engagement
- How do you broach this topic?



BENEFITS OF PHYSICAL RECREATION

Participation is decreased with disability^{3,4}

- Overall health, Socialization/Social life, Quality of life⁵
- Trends may continue even after investigational interventions end^{1,6}
- Everything from pain⁶ to stroke (physical performance¹, walking speed²), other neurological disorders¹¹, Amputation, SCI, and TBI



PHYSICAL ACTIVITY VS ADAPTIVE SPORTS/PARALYMPICS

- Benefits of PA generally respected
- PA ≠ AS
- Can we define?
 - Typically in groups
 - Organized
 - Coaching
- How to parse out benefits of sport?
- “SER”



ATHLETE CLASSIFICATION

- Current IPC classification system: 10 Eligible Impairments often sorted to three distinct groups:
 - a) Physical/biomechanical impairments
 - b) Visual impairment
 - c) Intellectual impairment
- Sport Class for equitable competition
 - Re-classification if impairment is progressive



MEASUREMENT TOOLS

- Broadly: Gait speed, balance, strength, cognition, psychological health
- Common Clinical Testing
 - Mobility
 - Short Physical Performance Battery, TUG, 6MWT, Berg Balance Scale, Single Leg Stance Test
 - ADLs/iADLs
 - Barthel Index, Katz Index, Lawton Scale
 - Mental Health, QOL
 - Geriatric Depression Scale, PHQ2/9, Short-Form Health Survey (12 or 36-item), SF-36, Caregiver Strain Index
- Disease-specific markers
- Ultimate goal: HRQOL



... VERSUS
OUTCOMES

QOL measures

Community engagement //
de-marginalization

Functional independence

Morbidity

Mortality



OPTIONS IN ADAPTIVE SPORTS



- Region dependent
- Indoor and outdoor
- Seated/recumbent versus standing
- Basketball, soccer, goalball, sailing, kayaking, volleyball, tennis, softball, dancing, bowling, bocce, indoor rock climbing, football, rugby, archery, swimming, bicycling, T&F, winter sports...



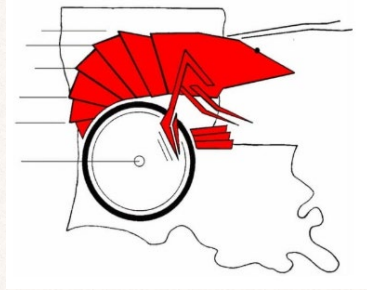
UNIQUE COMPLEXITY

- Sports-related equipment cost
- Medical needs
 - Screening
 - Medical risk¹⁵
 - MSK injury^{12, 13}
 - Context, Sport, Region
- Large teams: coaches, community organizers, volunteers, caregivers, medical staff, therapists
 - Plus care from psychology, nutrition, social work, personal training
- Pop density



ORGANIZATIONS

- Age
- Geography
- Impairment



New Orleans Rowing Club



CITATIONS AND SALUTATIONS

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