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# THE HARTFORD SKI SPECTACULAR 2024 MENTOR SESSION - "OFF SEASON" TRAINING

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# OBJECTIVES

1. Importance & Benefits of Off-Season Training for Adaptive Athletes
2. Best Practices: Off-Season Training & Conditioning Opportunities via Move United Member Organization
3. Summer Cross-Training Competition Opportunities from the Move United Sanctioned Competition Network



# REALITY OF RISKS & VULNERABILITIES FOR ADAPTIVE ATHLETES

- DX & medications: know the physiology, risks & co-morbidities (spasticity, skin) to individualize the plan.
- Potential for overuse injuries in under *or* over trained athletes AND functional consequences greater- especially for wheelchair users.
- Health behaviors affect performance more: sleep, hydration, headache/pain/CRPS, nutrition, fatigue.
  - Be aware of Relative Energy Deficiency in Sport (RED-S) or LEA (low energy availability).
- Paralympic Research:
  - Higher risk of illness over injury (GI, UTI/neurogenic bladder, skin, lungs)
  - Fewer winter sports but more injuries than in summer (Concussion, Head Injury)

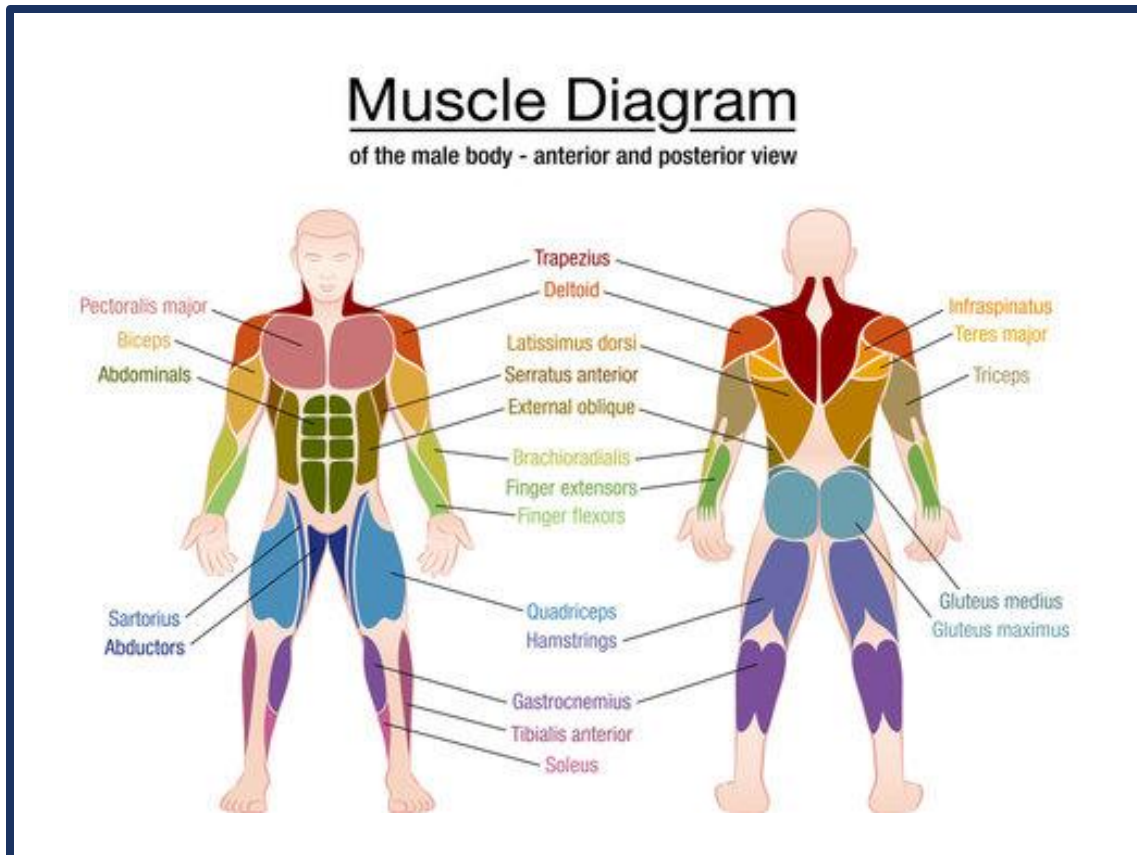
***Careful training essential in adaptive athletes !***

# WHAT'S YOUR PLAN?

## Commit to a Calendar!

- 1. Pre-Season** Aug/Sept (2 months)
  - Goals: re-building with respect to sport demands (endurance/stamina vs power).
- 2. Prep Phase** Oct/Nov (2 months)
  - Goals: developing sport & event specificity with increasing intensity, speed & stamina.
- 3. Ski Season** Dec-March (4months) Goals are *mostly* about performance with injury prevention mindset.
- 4. Post Season** April/May (1-2 months)
  - Goals: “Rest, Recover & Repair” *but* avoid full training reversal with lighter conditioning.
- 5. "Off Season"** May/June/July (2-3 months)
  - Goals: maintaining strong athletic physical & mental fitness.

# YEAR-ROUND TRAINING: BEST PRACTICES



## Strength/Conditioning + Sport Coaching + Health & Medical Insights

1. Flexibility
2. Cardiovascular endurance (aligned to sport needs)
3. Coordination, balance (sport specific needs)
4. Muscle strength
  - **Shoulder Health**
  - **Posterior Chain**
  - **DON'T FORGET THE CORE**

# SPOTTY DATA ON INJURIES & PREVENTION/PROTECTION

*Body parts “closest to snow that can move” take the stress.*

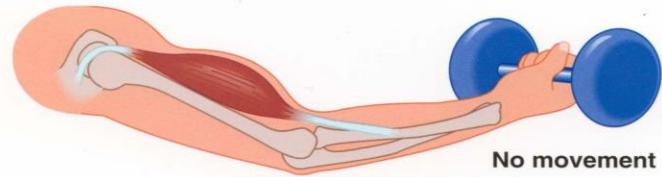
*Movement Analysis of stability & mobility of sport biomechanics is critical.*

- “Stress” & energy cost on the monoskiers' upper body was 3 times that of standing downhill skiers’.
- Trunk Rotational stress of “unwinding” t/o 3 turn phases (initiation, steering, completion) -which requires mobility over stable base (flexed hips, knees)- created Spinal and Ligament stress forces.
- Outriggers require high isometric upper body muscle use to move dynamically over snow.



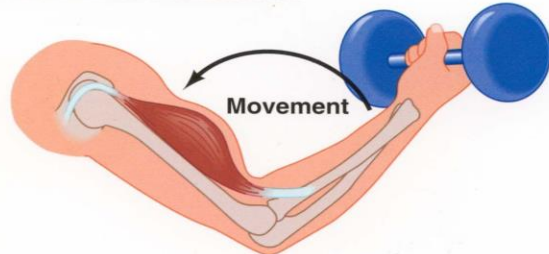
# TRAINING CONSIDERATIONS: MUSCLE CONTRACTIONS

**Isometric contraction**  
Muscle contracts  
but does not shorten



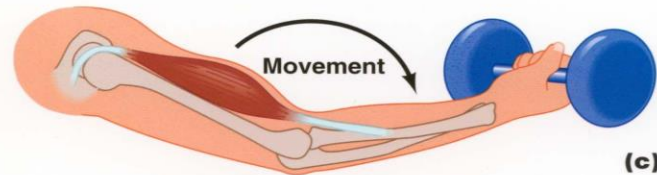
(a)

**Concentric contraction**



(b)

**Eccentric contraction**



(c)

**Isometric:** Muscle contracts but limb doesn't move-great after injury, for circulation, avoids/reduces pain, and = low stress strengthening.  
*Great for stability & endurance goals but usu isolated to 1-2 muscles/groups.*

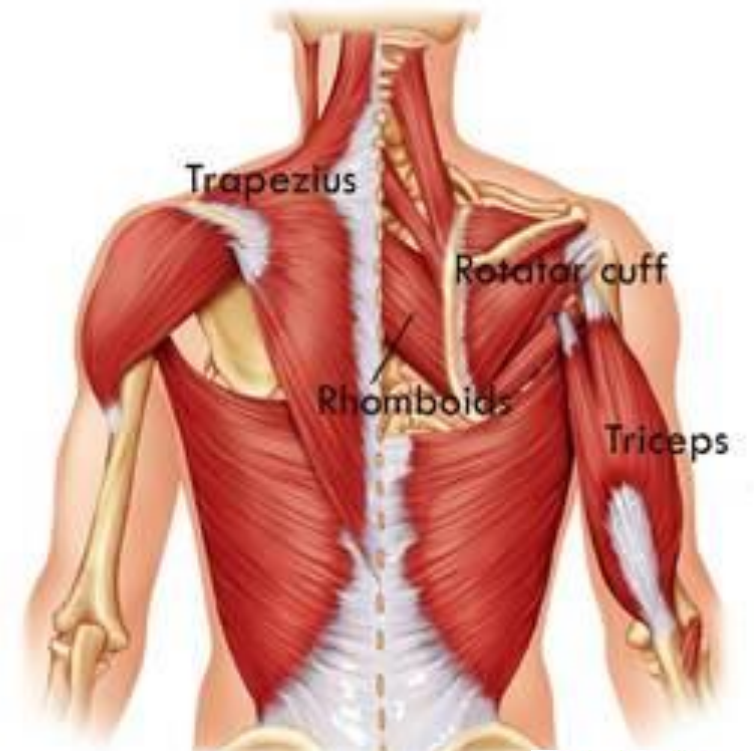
**Concentric:** Muscle shortens i.e. bicep muscle bending the elbow.  
MOST COMMON exercise programs & functional movements use this.  
*Great for power, speed & performance.*

**Eccentric:** Muscle lengthens to control limb/weight against gravity.  
*Great for resilient muscle tissue, flexibility, injury prevention, strength –especially with slower speeds.*

*Use all 3 types during sport to different degrees.*



# HIP & SHOULDER FOUNDATIONS PROVIDE CONTROL ON SNOW





# OUTRIGGER UE & LE TRAINING CONSIDERATIONS

## Stretch

- **Anterior wall & muscle chains-**
- Pecs/Shoulders,
- Forearms/Wrist
  
- Ant hips/quads
- Posterior knee/hamstrings
- Ankles/Achilles
- Trunk rotation

## Strengthen

- Core (modify planks)
- Back ms/Lats in prone
- Scapula/Blades
- Rotator Cuff stability
- Gluts & Quads & Achilles
  
- **Balanced muscle strength for best control.**
- **Closed chain & isometrics**
- **Plyometrics**

## Balance

- Mimic positional needs in sit or standing
- Diagonal planes
- Rotary planes to wind and unwind
  
- **Add instability (ball, disc, corner of bed) under feet or seat**

## Cardio

- Ski Erg
- HandCycle
- Arm Ergometer
- Rowing machines
- Swim & Aquatic classes
- W/C sports & racing

**Add Dual Tasks: eye/hand coordination, head turns, speed, variety**

# MENTAL MOTIVATORS

## Cool Tools

- Grab some monitors- accelerometers, metrics
- Trainers for cycles and wheelchair miles
- **RPE to self report trends**

## Athletic MindSet

- Shifting self identity to athletic mindset is critical for commitment:
- Connect with team mates who dream big and take risks.
- **Pick a mid-year challenge (June?) for a race or goal to keep competing.**

## Team Approach

- Monthly zoom check-ins
- Weekly peer workouts at home- Tband groups, etc)
- Newsletter sample workouts (target movements and muscles)
- **Fall countdowns to get ready!**

# TRAINING OPPORTUNITIES WITH COMPARABLE SPORT?

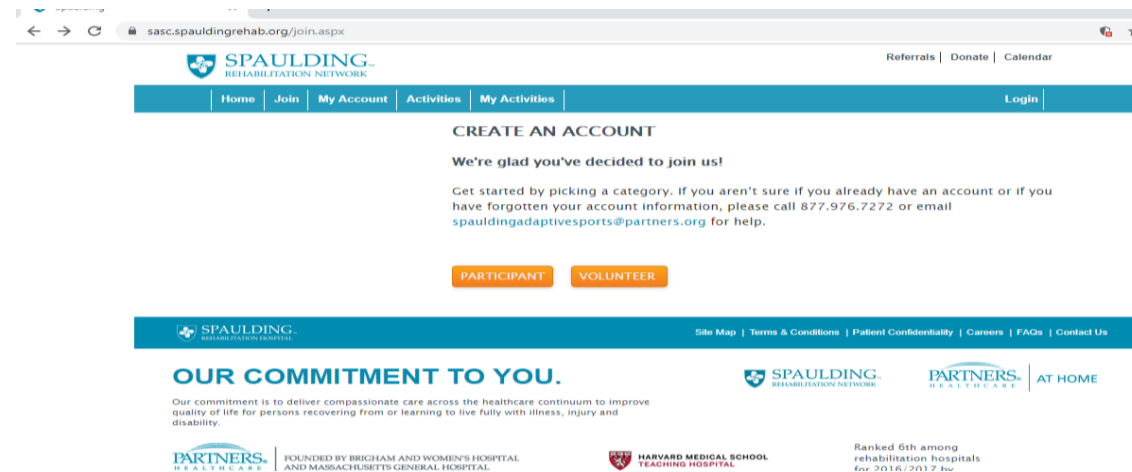
*ALL great for UEs, cardio, lats, back, core, triceps all posterior chain.....*

1. Hand/Cycling for shoulder health-distance, hills;  
SPIN with rollers/trainers and aMTB;
2. Adaptive Swim;
3. Sled Hockey - adds team competition;
4. Indoor Rowing with “ExPD” in Cambridge;
5. Virtual classes (Upper Body Pump or 1:1 training w/ ACSM cIFT (Inclusive Fitness Trainers))



# TRAINING OPPORTUNITIES WITH COMPARABLE SPORT?

*ALL great for UEs, cardio, lats, back, core, triceps all posterior chain.....*



# YEAR-ROUND VIRTUAL TRAINING

## Group Fitness Classes (\$5)

- Stand & Balance
- Core & Stretch
- Adaptive Boxing
- Resistance Bands
- 30-Minute Fitness
- Dance with Parkinson's

## 1:1 Inclusive Fitness Training "IFT" (\$25)



MENTOR <https://www.nchpad.org/nchpad-connect/>



Adaptive Sports Centers



# MOVE UNITED SANCTIONED COMPETITION NETWORK: CROSS-TRAIN & COMPETE!

## 2024 Move United Sanctioned Competition Season

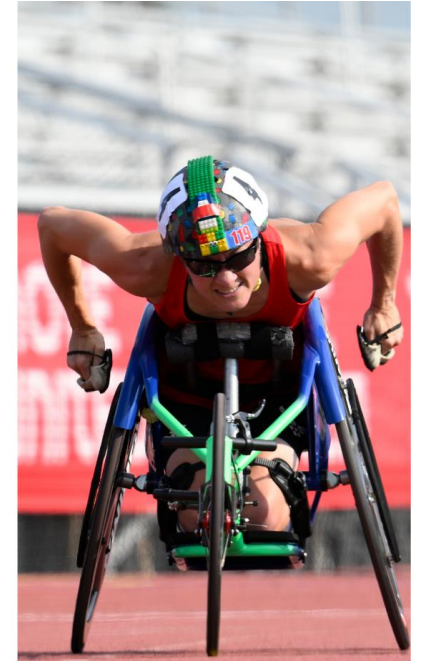
- 35 events
- 2311 total unique athletes served
- 24 states with events
- 333 Warfighters

## 2025 Move United Sanctioned Competition Season to Launch in January



Mass General Brigham  
Spaulding Rehabilitation

Adaptive Sports Centers



**MOVE  
UNITED**  
SANCTIONED  
COMPETITIONS  
2025





# MOVE UNITED SANCTIONED COMPETITION NETWORK: CROSS-TRAIN & COMPETE!

- 19 Unique Summer Sports:
  - Ambulatory Tennis, Archery, Blind Judo, Blind Soccer, Boccia, Cycling, Goalball, Para Powerlifting, Paratriathlon, Rowing, Shooting, Sitting Volleyball, Swimming, Table Tennis, Track & Field, Wheelchair Basketball, Wheelchair Fencing, Wheelchair Football, & Wheelchair Tennis
  - Many Events Feature Additional Sports via Clinics: Adaptive Boxing, Yoga, & Wheelchair Rugby are just a few!
- Move United Membership Network
  - 240 organizations
  - 45 states + District of Columbia
  - 125,000 youth & adult athletes reached



**Scan the QR code  
to find an event near you!**

- ★ Over 30 Move United Sanctioned Competitions throughout the nationwide member network featuring 19 unique summer sports.
- ★ All Competitions are qualifiers for The Hartford Nationals conducted by Move United (red star on Nationals location).
- ★ The Hartford Competition Series.



Move United Sanctioned Competitions 2025



Mass General Brigham  
**Spaulding Rehabilitation**  
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## QUESTIONS?

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