

Training and Conditioning for Swimmers with Disabilities

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Outline

- Training for fitness
- Training the neuromuscular system
- Mental training
- Sportsmanship
- Season planning

At the end of the presentation, we invite you to share your expertise

Training for Fitness:

Cardiorespiratory Fitness



Improve fitness by increasing

- **Intensity** (↑ speed/effort, ↑ distance per repetition, ↓ rest)
- **Duration** (↑ number of sets, ↑ distance/practice, ↑ duration of practice)
- **Frequency** (↑ practices/week, ↑ weeks/year)

Training for Fitness:

Cardiorespiratory Fitness

- Vary training as needed

- Sprint
- Middle distance
- Distance
- Open water

Focus on duration rather than distance when training different energy systems



Training for Fitness:

Cardiorespiratory Fitness

- Discussion



Natalie DuToit at 2008 FINA World Championships

Training for Fitness:

Muscular Strength/Endurance

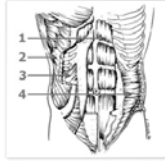
- In-the-water training
 - Paddles, fins, stretch cords, etc.
- Dry-land training
 - Body weight exercises
 - Resistance equipment
- Be creative and collaborate with the swimmer to solve challenges



Training for Fitness:

Muscular Strength/Endurance

- Give attention to core strength and stability – the muscles that attach to spinal column or hip bones
- Core strength/stability helps
 - Maintain streamline
 - Transfer force from one body part to another
 - Initiate body roll
 - Wheelchair transfers
 - Minimize lordosis and numb legs for those with spinal stenosis



Core muscles also include the erector spinae and multifidus

Training for Fitness:

Muscular Strength/Endurance

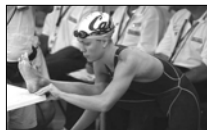
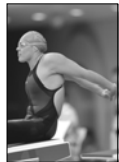


- Discussion

Training for Fitness:

Flexibility/Joint Range of Motion

- Flexibility/ROM helps the swimmer to place limbs in optimal positions to:
 - Maximize force production
 - Minimize drag
 - Maximize distance per stroke
 - Prevent injury



Training for Fitness:

Flexibility/Joint Range of Motion



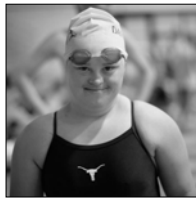
This athlete has contractures of the shoulders, elbows, hips, and knees

- Causes of ROM limitations
 - Habitual inactivity
 - Contractures (tight muscles, tendons, ligaments, or skin)
 - Skeletal abnormalities
- Solutions
 - Flexibility/ROM exercises help caused by habitual inactivity, but usually not contractures or skeletal abnormalities
 - Botox and other drugs provide some relief for contractures but usually are on the WADA controlled substance list

Training for Fitness:

Flexibility/Range of Motion

- Swimmers with Down syndrome often have exceptional flexibility
- Discussion



Training for Fitness:

Body Composition



- Under-nourished swimmers will not have the energy to perform well
- Over-fat swimmers will experience undesirable drag when swimming
- Discussion

Training for Fitness:

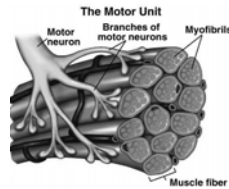
Overtraining and Overuse Injuries

- Overtraining = the volume and intensity of training exceeds recovery capacity
- Overuse injuries = tissue damage due to repetitive use
- Swimmers who use mobility equipment
 - Consider work associated with use of wheelchairs, etc., in addition to swim training
 - Overuse injuries impact activities of daily living
 - Difficult recovery because total rest is impractical



Training the Neuromuscular System

- Repetition of correct technique
- Swimmers should understand need for repetition
- Swimmers should be taught to self-assess their performances
 - Look for ...
 - It should feel like ...
 - Listen for ...



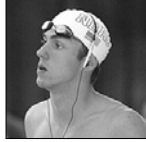
Training the Neuromuscular System

- Specificity of training
- Practice at different speeds, in different pools, and using different training methods
- Discussion



Mental Training

- Skills
 - Attentional control
 - Goal setting
 - Imagery
 - Positive self-talk
 - Relaxation

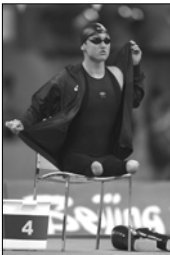


Mental Training

- Swimmers with cognitive disabilities may struggle with focus/attention
- Swimmers may need help with goal setting because of limited experience in achievement domains and simply not knowing about possibilities such as the Paralympic Games
- Imagery can be visual, auditory, kinesthetic, etc.
- Positive self-talk can combat doubt and lack of confidence
- Relaxation can be especially helpful to swimmers with high muscle tone

Mental Training

- Discussion



Teach Good Sportsmanship

- Teach
 - Expectations
 - Team rules
 - Codes of conduct



- Provide positive reinforcement for compliance or significant progress

Expect Good Sportsmanship

- Be a role model (of what?)
- Teach swimmers to be role models



Expect Good Sportsmanship



Expect Good Sportsmanship

■ Discussion



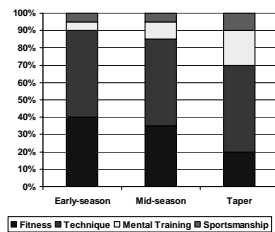
Season Planning

1. Determine components of training, e.g., fitness, technique, mental training, sportsmanship
2. Establish SMART goals for each component



Season Planning

3. Allocate % time to each component for each phase of the season
4. Write practices that correspond to the season plan
5. Implement your philosophy of coaching and incorporate best practices



Workout Planning

- Warm-up
 - Easy activity to ↑ HR, BP, and muscle temperature
- Workout
 - Technique instruction
 - Training and conditioning
 - Mental training
 - Sportsmanship
- Cool-down
 - Easy activity to ↓ HR, BP, and muscle temperature

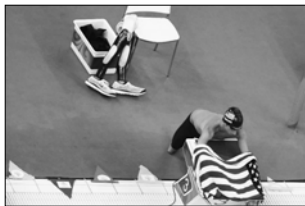
Be consistent with your SMART goals and the % time allocations in your season plan

Disability Accommodations

- Definitions
 - Accessibility – can get in door and use service
 - Accommodations – services are user-friendly
- Examples of accommodations
 - Modified expectations (e.g., max HR limitations for swimmers with Down syndrome and quadriplegia)
 - Modified equipment
 - Alternate communication/teaching methods
- Hint – collaborate with the swimmer and parents to determine potential adaptations and solutions

Season/Workout Planning + Disability Accommodations

- Discussion

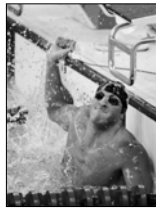


Conclusion



- Most suggestions for training and conditioning work for ALL swimmers
- Differences are common-sense disability accommodations
- Know what is possible for swimmers with disabilities, and then help them set and attain challenging goals

Thank You!



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