

**Deep Cardio MAX**

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Presented by  
Craig Stuart

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### Learning Objectives

Review the scientific principles of deep water training.

Understand the differences between gravity assisted/resisted exercise and gravity-neutral exercise.

Learn techniques for developing postural awareness, balance and coordination in the buoyant environment.

Explore deep water training options.

- Interval Training    Resistance Training
- Circuit Training    Non-linear Patterns

### Research & Benefits

Research supports that deep water exercise, when performed at the proper intensity and duration, will produce favourable health benefits and is a viable training option for maintaining health and improving physical fitness.

(AEA Aquatic Fitness Professional Manual)

### Research Review

- Interval Training - Fluctuating cycles of work and rest allow for greater volume of work in a shorter time.
- Circuit Training - Alternating muscle conditioning emphasis based on biomechanical balance achieves higher work load.
- Resistance Training - Builds & maintains muscle mass, boosts metabolism, improves bone and joint health.

### Intensity Variables 1

- Overload
  - Use equipment - buoyant and drag
  - Manipulate surface area
  - Increase force (muscular effort)
- Inertia
  - Stop and start travel
  - Engage core to resist tipping (streamlining)

### Intensity Variables 2

- Acceleration
  - Use explosive moves
  - Elevation - power pops & sculling
- Action / Reaction
  - Cue direction of force (muscular effort)
  - Use core to stabilize, responding to force and load of limbs moving against H2O resistance

### Muscular Effort

- Teaching INTENSITY in Class:
- LOW - Cue “soft & easy” (30-50%)
- MODERATE - Cue “move more water”- “push harder” - (50-70%)
- HIGH - Cue “use more power and force” - “make white water” (70-90%)
- Use surface area
- Include What, How & Why in your cueing

### Measuring Intensity

- Heart rate monitors
- Palpating heart rate
- Rate of Perceived Exertion (Borg Scale)
- Talk Test
  
- Teach and use it every day
- Engage students in feeling and understanding both effort & intensity

### Elements of Change

- Stationary vs Travel
- Change direction
- Change plane of movement
- Change lever length
- Change force / cadence
- Change surface area
- .... ALL are *transitions*

### Deep Water Skills

#### Sculling

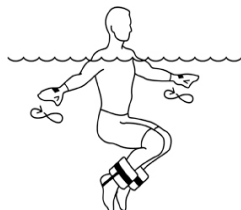
- for balance and control

#### Awareness

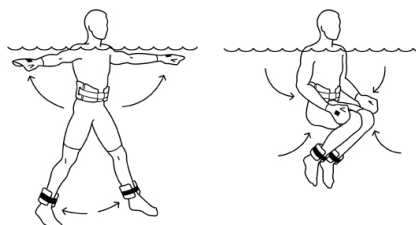
- role of the core stabilizers to maintain alignment and posture

### Sculling

Tuck & Hold



### TUCK JACKS



### Advanced Exercises 1

- RUN / Power Shoulder Press
- RUN / Rotator Cuff Sweep
- RUN / Steep Climb
- RUN / Single Power Shoulder Press

### RUN

Travel - FORWARD / Rotator Cuff Sweep

### Advanced Exercises 2

- SIT KICK / Shoulder Press Travel - F
- SIT KICK / Shoulder Scoop Travel - B
- SIT KICK / Rotator Cuff Sweep Travel - F
- SIT KICK / Chest Sweep Travel - B
- SIT KICK / Reach & Rotate - Stationary
  
- TUCK JACKS / Chest Sweep Travel - B
- TUCK JACKS / Sweep Back - Travel - F

### SIT KICK

Scull

### Advanced Exercises 3

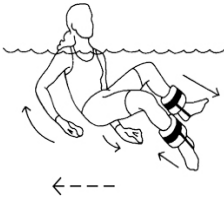
- X-C SKI / Rotator Cuff Sweeps
- X-C SKI / Travel - F
- X-C SKI / Travel - B
  
- X-C SKI HOLD / Travel - F
- X-C SKI HOLD / Travel - B
  
- SHUFFLE
- TUCK & BOOGIE

### X-COUNTRY SKI

Alternate Sweep / Travel Back

## TUCK and BOOGIE

Travel Back



## Sample Interval - 1

- Build Up Block
  - Stationary Work Interval Low intensity 30 secs
  - Travel BACK Interval Moderate 30 secs
  - Stationary Work Interval Moderate 30 secs
  - Travel FORWARD Interval High intensity 30 secs
- Work to Recovery Ratio = 3 to 1
- Considerations for Biomechanical Balance?

## Sample Interval - 2

- Pyramids
  - Stationary Work Interval Low intensity 30 secs
  - Stationary Work Interval Moderate 30 secs
  - Stationary Work Interval High intensity 30 secs
  - REPEAT - *in reverse order*
- Work to Recovery Ratio = 4 to 1
- Considerations for Biomechanical Balance?

## Sample Interval - 3

- Circuit Wave
  - Stationary Work Interval Low intensity 30 secs
  - Free-Form Travel Interval Moderate 60 secs
  - Stationary Work Interval High intensity 30 secs
  - REPEAT the Set 3 X
- Work to Recovery Ratio = 4 to 1
- Considerations for Biomechanical Balance?

## Sample Interval - 4

- Circuit-Joint Resistance Training
  - Interval - 1 30 secs Short lever/upper body
  - Interval - 2 30 secs Long lever/lower body
  - Interval - 3 30 secs Long lever/upper body
  - Interval - 4 30 secs Short lever/lower body
- Muscular Endurance Training Set
- Considerations for Biomechanical Balance?

## Equipment Options

- WAVE BELT Buoyancy Belt
- WAVE BELT with Mini Cuffs
- Mini Cuffs - only ?
- HYDRO-FIT Cuffs
- Webbed Gloves
- Hand Buoys