

Waterford Sports Partnerships' Club Development Seminar Series - Strength and Conditioning Workshop

Hosted by Gary Walsh

Course Elements

- Planning a Season – Macrocycle
- Prioritising Season Breakdown- Mesocycle
2/3 month or blocks of training
- Prioritising Weekly planning – Microcycles

Macrocycle

- A **macrocycle** refers to the overall training period, usually representing a year or two.
- Coaches **goals** of what they are looking to achieve within that year - Develop, Compete, Win???
- Predicting possible Challenges – Motivation, Player availability, Commitment, Strategy
- Organising Training methods - Concurrent Training or Block Training
- Logistics of players and usage of facilities

Mesocycle

- **Mesocycle** - typically a month or two of your season
- Very Important for progress reporting on Macro Year
- Dissect your Season into parts recommend 5 parts
- Preseason - Body Builder, Performance testing
- In season 1 – Employing your Methods and Structure for the year
- In Season 2 – Performance Indicators and Recovery
- In Season 3 - Peaking phases
- Off Season – Activities they have no competency in

Microcycle

- The **microcycle** is generally up to 7 days or your weekly schedule
- Focus of that week – (Skill, Recovery, Speed, Power, Game Prep, Goal setting)
- Training Methods of that Week – Field, Gym, Aquatic based or other
- Recovery – Times between sessions,
- Session Planning – Warm up , Purpose of session, Exercise Choice, Intensity Level

Preseason

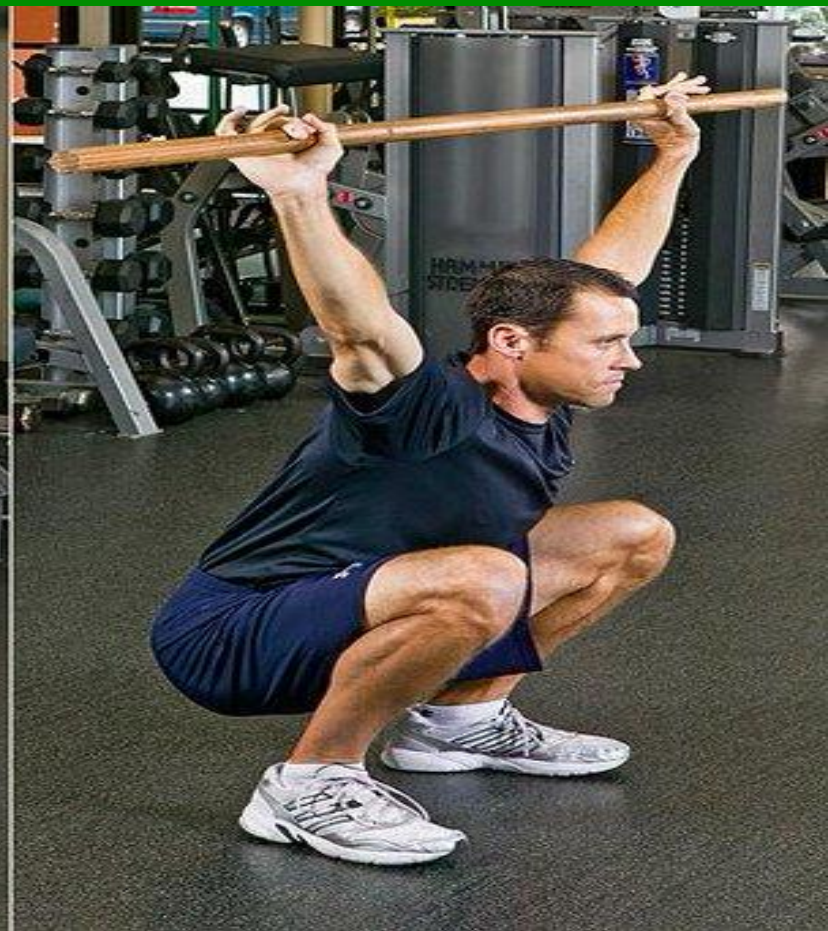
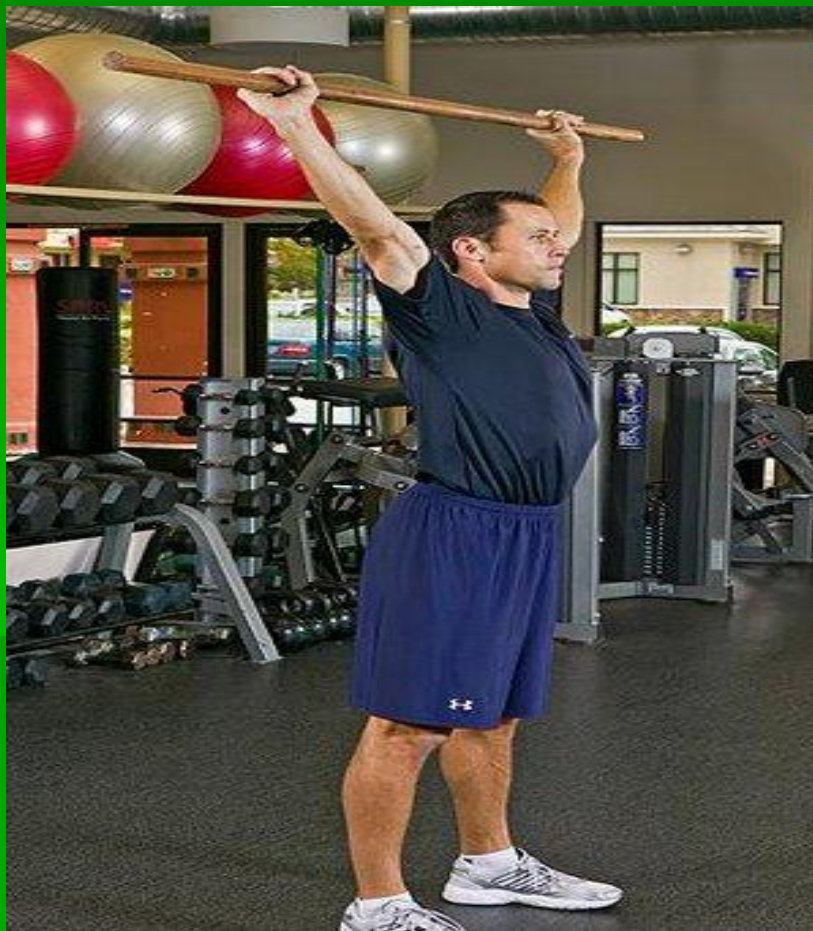
- Whats the point of
Preseason ??????

Preseason

**Intensity Levels – Conditioning, High Volume and Low Intensity
-Resistance , Medium Volume and Medium Intensity**

- Body Building – Building a robust Body for the demands of the year
 - Injury Prevention – Fixing possible problematic areas
 - Base Building – Aerobic and Strength building
 - Team Bonding – Gelling the team together
 - Team Moral and Mental Toughness – Iron sharpens Iron
 - Needs Analysis – What you players need to self improve at 1%
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- Testing – Movement Screening – Overhead Squat
 - - Aerobic Testing – 12min Run, Row, Bike or Swim
 - - Resistance Resting – Bi Lateral and Unilateral Strength

Movement Screening



Common Flaws

- **Feet turn out** – Tight Piriformis, Weak Glutes
- **Feet Turned In** – Tight Vastus Medialis/ Lateralis possibly also Weak
- **Knees Buckle Out** – Tight Groin, Weak Glutes
- **Knees Bow In** – Tight IT band and Weak Glutes
- **Poor Squat Depth** – Tight Calf muscles, Hip Flexor, Quads or Lower Back
- Weak Glutes and Core
- **Torso Lean** – Tight Hip Flexor muscles, Weak Core Muscles
- **Arms Forwards** – Tight Chest muscles, Weak Back Muscles

Aerobic Testing

- Coopers -12 Min Aerobic Test
- Normally for distance and tracking HR
- Row, Bike, Run, or Swim
- Easy to follow and not impeded by complexity
- Easy to Retest

Power Testing

- Max Watt Production
- 6 to 10 sec Max efforts on a bike
- Prowler Push 10sec
- Med Ball Throw
- Box Jump or Vertical Jump
- Olympic Lifts

Strength Testing

Bi-Lateral Testing

- Deadlift – Lower Body Pull Strength and Grip
- Box Squat – Lower Body Push Strength
- Press – Upper Body Linear Strength
- Bench Press – Upper Body Horizontal Pressing Strength
- Pull Up – Upper Body Pull Strength

Unilateral Testing

- Single Leg Squat – Balance and Stability of lower body
- Single Leg Box Jump – Single leg Strength and power production
- Lunges – Single leg loading strength
- Single Arm Press – Upper Body Single arm Strength

Warm up

- What is the point in a warm up ?

RAMP

- **RAMP** - stands for Raise, Activate, Mobilise, & Potentiate. When designing a warm-up following this order insures that no piece of the puzzle is skipped over
- **Raise** - Body temperature, heart-rate, respiration, blood flow, and joint fluid viscosity
- **Activate** - To activate key muscle groups
- **Mobilise** - Key joints and ranges of motion used in the sport
- **Potentiate** - Increase intensity to a point where subsequent activities can be performed at maximal level. Select activities that can contribute to a supra-maximal effect via utilisation of a post activation potentiation effect (PAP)

In Season 1

**Intensity Levels – Conditioning (High Volume and Medium Intensity)
-Resistance (Low Volume and Medium Intensity)**

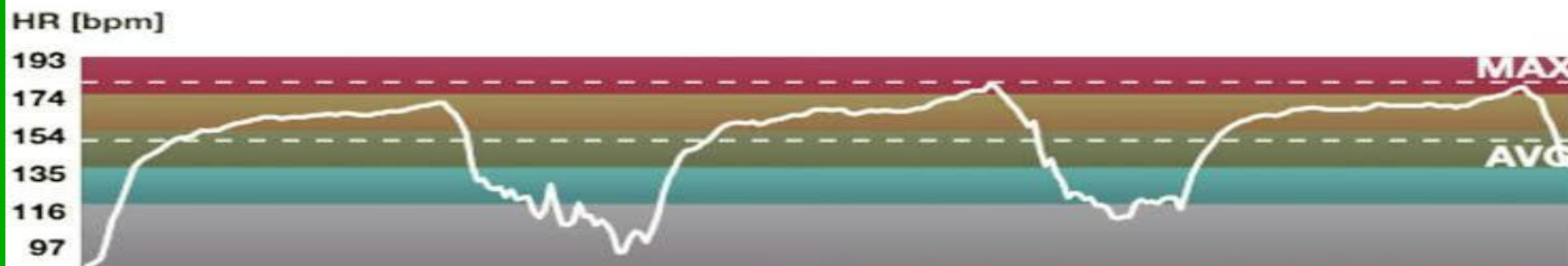
- **Individualised Programming more apparent** – Players Strength and Weaknesses
- **Unilateral Strength Work very dominant in programming** – Stressors are less than Bilateral
- **Energy System Work** – Aerobic and Anaerobic Capacity Work
- **Player Analysis** – Jumping , Acceleration , Deceleration, Horizontal and Lateral movement
- **Player Monitoring** – Rate of Perceived Effort (RPE) Scale 1 – 10
- **Pre game routine** – Rest, Meditation, Active Work (mitochondria)
- **HICT** – High Intensity Continuous training, 10 -20 min Low Tempo
- **Extensive Intervals** – Lactate energy production (30/40)W $\frac{3}{4}$ R 2- 5 sets

Anaerobic Testing

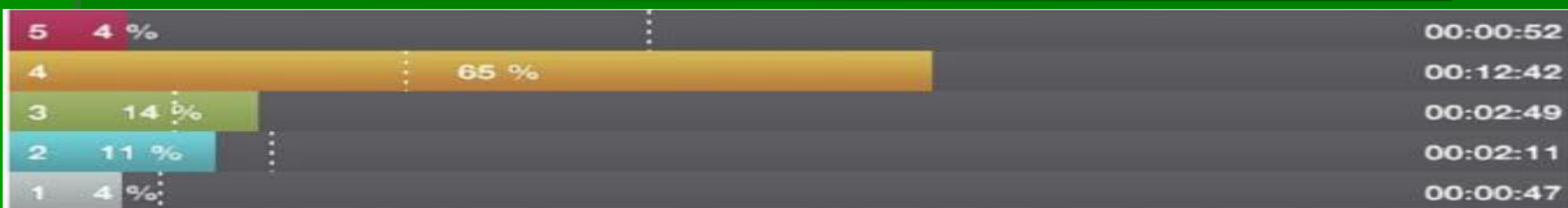
TIME IN ZONES



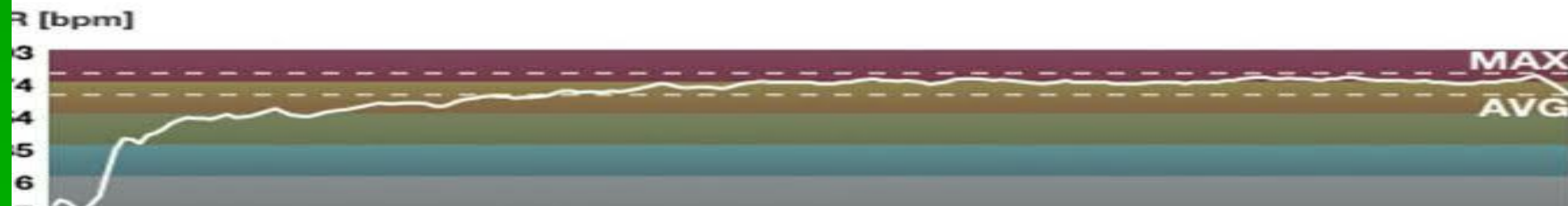
HEART RATE GRAPH



Aerobic Testing & Retest



HEART RATE GRAPH



In Season 2

**Intensity Levels – Conditioning (Medium Volume and Intensity)
-Resistance (Low Volume and High Intensity)**

■ Conditioning

- Gaa, Football, Hockey, Rugby – 400s , 200s , Shuttles 100s
- Boxing, Combat sport – Bag work 3min rounds
- Tempo Conditioning – Oxidation abilities of Slow and Some Fast twitch fibre
8-10 Work, 1 min Rest, 8 – 16 rounds (Run, Bike, Swim)
- Threshold training – Oxidative efficiency, Power at lactate Threshold
5-10 min work, 1 – 3 Sets , Working in Zone 5

■ Resistance Work

- Tempo work - Mixture of Tempo Work 2:2 , 10-12 reps 3-5 sets 40-60 Rest
- High Resistance Intervals – 5-6s Work, 8-10 sets, Rest until Zone 2
- Rehab Exercises important – Before and after training

HRV – Heart rate Variability

- **Heart rate variability (HRV)** - is the physiological phenomenon of variation in the time interval between heartbeats. It is measured by the variation in the beat-to-beat interval.
- Tracks for readiness to train, from the patterns of your lowest resting heart rate to your highest resting heart rate.
- This process can take a couple of months to find a pattern to work from but is a fantastic way of monitoring stress levels and your readiness to train
- This is a way of combating over training or sickness

Watt Testing in the Gym

- Watts is an indicator of the amount of force being applied by the athlete.
- The Stronger the athlete the more force they can apply.
- Finding an athletes Max Watt production can be very beneficial for Performance indicators
- Strong Athlete Might hit 2000 Watts
- Knowing your max you can then check your rediness
- This can be Done on Vertical Jump or Broad Jump Test

In Season 3

**Intensity Levels – Conditioning (Very Low Volume – Very High Intensity)
-Resistance (Low Volume and Very High Intensity)**

- **Player Monitoring very Important (RPE)**
- **Conditioning** — Sports Specific, Agility Work, 25m – 10m Bursts
Explosive Repeats 8-15sec Work, 30/60 Rest
Maintain Power, 10- 15 Sets – Box Jump, Hurdle Hops

Cardiac Power Output — Increases Cardiac contractility, Anaerobic muscle buffering, Local Muscle endurance. Intensity to MHR , 90 – 2 min Work – 1-3 Min Rest (Zone 2) Repeat 3 to 4 Sets – Sprinting is exercise of choice
- **Aerobic Pylometrics** – Improve endurance of fast twitch muscle fibers and Elasticity of supporting tissues. 8-12 Bounds , 10- 30 Sec Rest 3 to 4 exercises
Skips, Bounding, Hops, Med Ball Work

In Season 3

**Intensity Levels – Conditioning (Very Low Volume – Very High Intensity)
-Resistance (Low Volume and Very High Intensity)**

- **Conditioning** — Aquatic Interval Work – 20/ 30 Sec Work 1- 90 sec rest. 10- 15 intervals. Similar effect to Repeats but with out the weight bearing effect. Freshness
- **Resistance** – Maintenance and power output, Injury Prevention
 - Prehab Work – Keeping major areas Strong – Nordic Drops, Glutes Bridges, Lunges, Split squats, Core Development 10 – 12 Reps, 3 sets 1 min rest
 - Power Work – Olympic Lifts – Force Development (Cleans, Snatch, Jerks, Slam balls. 80/90% rm – 2 to 3 Reps 3 to 4 Sets
 - Plyometrics – Gym based similar to Field work – Depth Jumps , Banded Jumps (Linear and Horizontal plan)

Off Season

Intensity Levels – Conditioning (Very High Volume and Very Low Intensity)
-Resistance (High Volume and low intensity)

- **Conditioning -**
- Mixture of Left Ventricle and Right building.
- **Cardiac Output** — Builds Left Ventricle Wall to pump blood around the body.
HR130-150 , 45 – 90 min and can be achived in circuits
- **Zone 2 Aerobic Training** — Builds the right Atrium Wall and helps pump blood back into the heart. — Heart remodelling 1 – 3 hours of continuous work -130 HR (Hiking, Weighted sled Work, Biking)

Off Season

**Intensity Levels – Conditioning (Very High Volume and Very Low Intensity)
-Resistance (High Volume and low intensity)**

- Aquatic Work – If your activities are land based then this is definitely something that should be introduced into your training plan. Builds aerobic capacity , the athletes are untrained in the area and will have massive carry over to capacity and endurance. Teaches the athletes to breath and control their HR. Low impact on the joints and keeps their body fresh.

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Off Season

**Intensity Levels – Conditioning (Very High Volume and Very Low Intensity)
-Resistance (High Volume and low intensity)**

- **Resistance Work** — General Physical Preparedness (GPP) Improving local muscular endurance and Maximum Strength improvement.
- **Strongman Endurance** — Improves Postural endurance, Grip strength and anaerobic buffering – 1 to 2 min Work , 2-4 Min Rest (Carries, Holds, Lifts, Axel Lifts, Yoke Walks .
- **Compound Lifts** – Improve Total Strength and Core Stability
 - Deadlift, Squat, Press, Toe to Bar, as non specific as you can
 - 5 sets, 5 reps. 70/80% 2 min rest between sets 4- 5 Exercises
 - 3 days a week of your program

Off Season

**Intensity Levels – Conditioning (Very High Volume and Very Low Intensity)
-Resistance (High Volume and low intensity)**

- **Flow Work** — Improve range of movement in the joints and connective tissue. 20 mins on a target area to improve your movement and balance.
- Yoga – Similar to flow work, Keep your mental check in line and keep motivation high for the sport they will be doing all year.
- Your only as strong as your weakest muscle and only as loose as your tightest muscle so flexibility is a massive area which needs to be covered in all sports coaches programs.

■ Thank you

Gary Walsh