



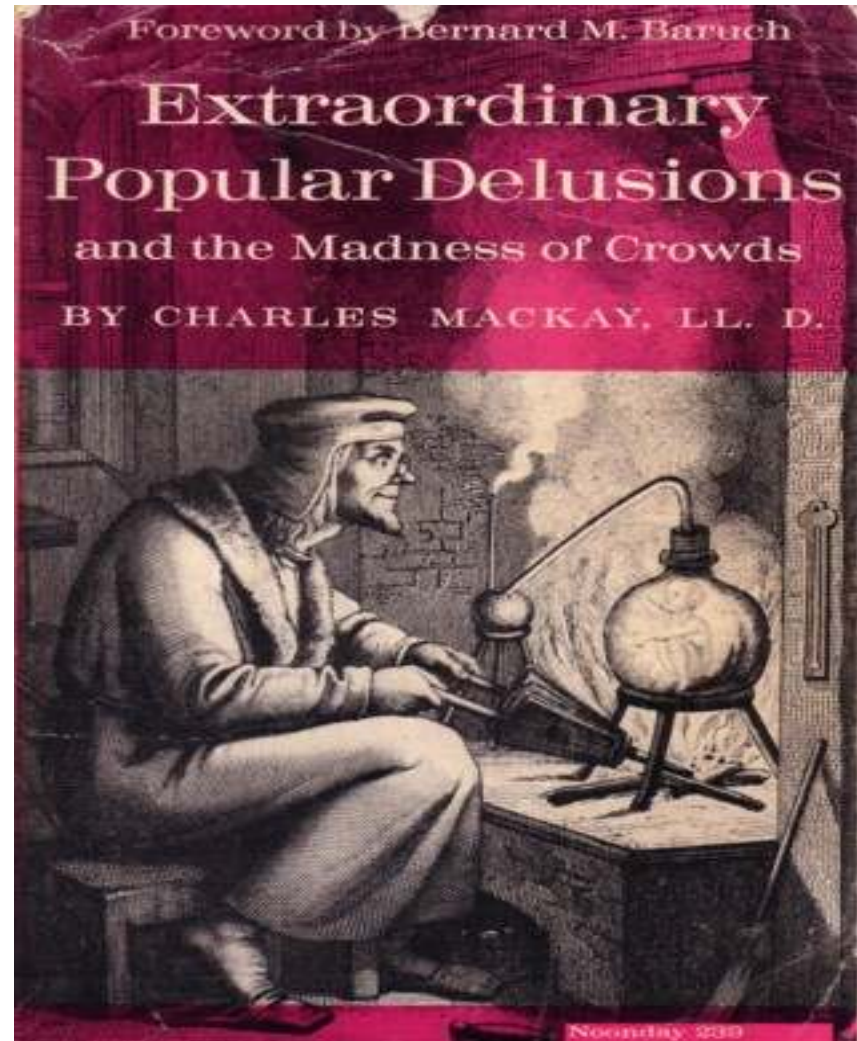
# Training Fads – Fact or Fiction?

Dr Giles Warrington



# Fads

- Not a new concept...
- 'Bandwagon effect' - people often do and believe things because many other share those beliefs
- As more people come to believe in something, others also "hop on the bandwagon" regardless of the underlying evidence
- 'Herding instinct' - coaches and athletes tend to follow the crowd without examining the merits of a particular training method
- Difference between social and scientific proof!



# Determinants of Athletic Performance:

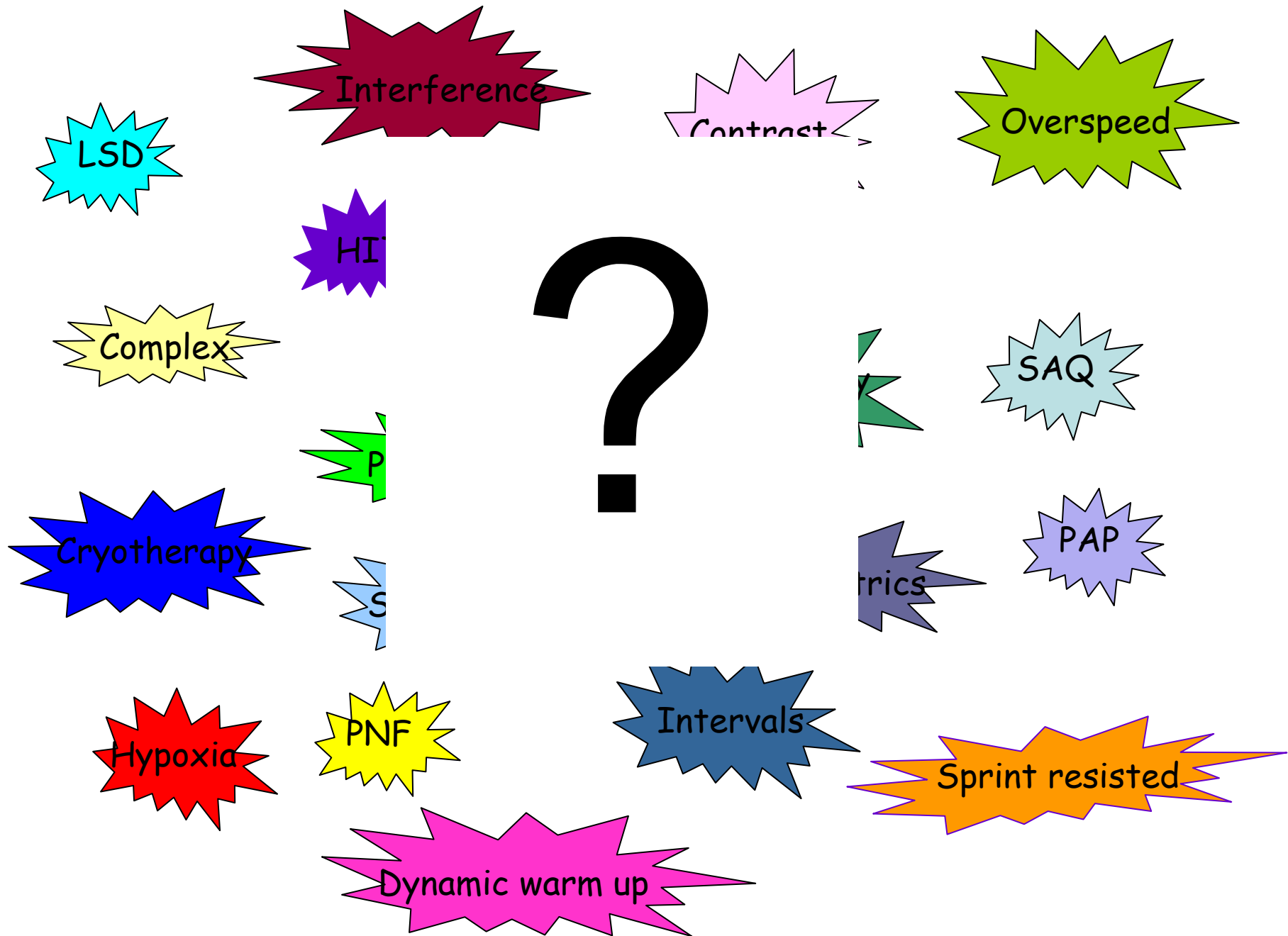
## 1. Genetics



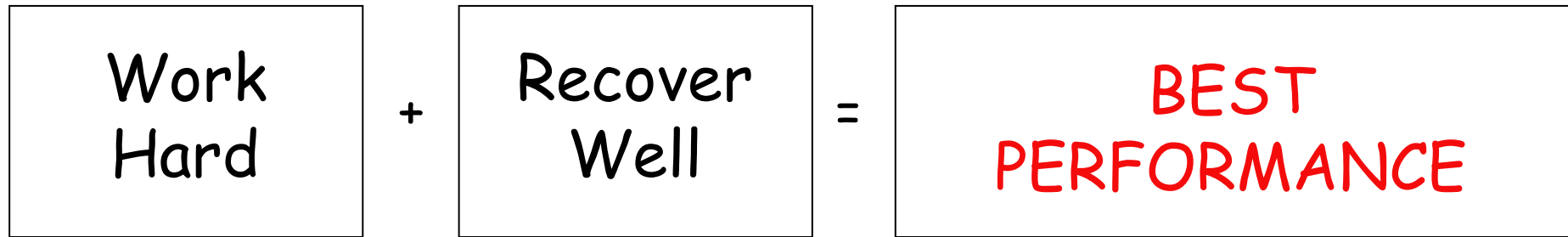
## 2. Environment

- Training: Technical/Tactical/Physical/Mental
- Lifestyle
  - Recovery/rest/sleep
  - Nutrition
  - Health
  - Recreation
  - Others





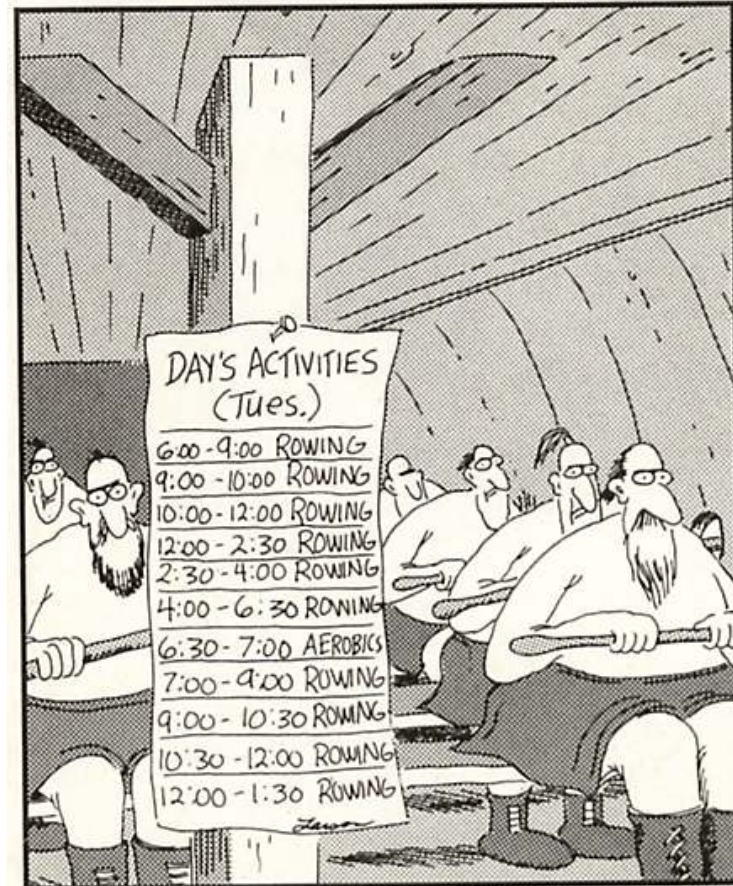
# Performance Ingredients



Good Coaching and Planning  
and a Balanced Lifestyle

# Key Training Questions:

- Purpose?
- Effects?
- Evidence Base?
- Placebo?
- Is it safe?
- Performance Impact?



Slave-ship daily schedules

# Areas of Focus:

- Training methods
- Preparation
- Recovery Strategies



# Training Methods

- Speed and agility
- Core training
- HIT training
- Stretching

“Physiological alterations that result from training are highly specific to the type of training”  
(Wilmore and Costill 1999)



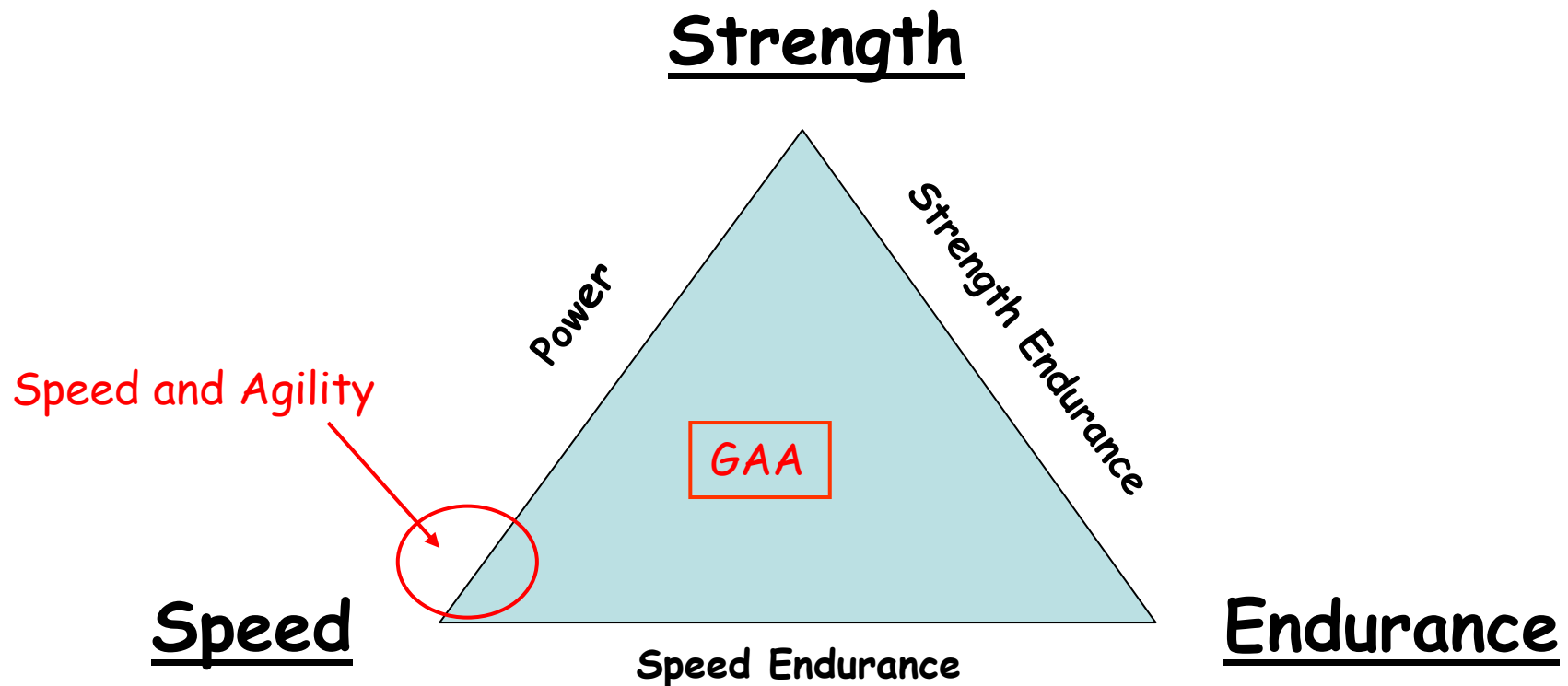


# Speed and Agility Drills and Tools

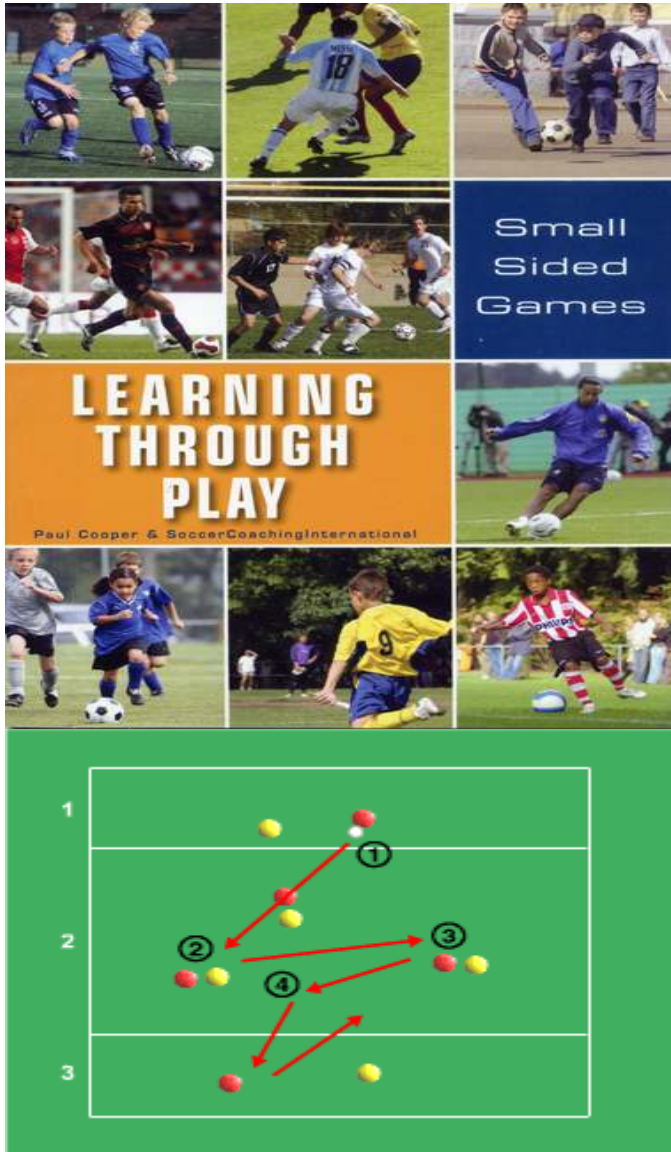
- New training method or re-packaging of old training ideas?
- Total training method?
- Speed-agility movements in a match by nature are unplanned and unpredictable
- Do we need ladders/hurdles etc to achieve training affect?
- What about small-sided games?



# Sport Specific Demands



# Specificity ?



v



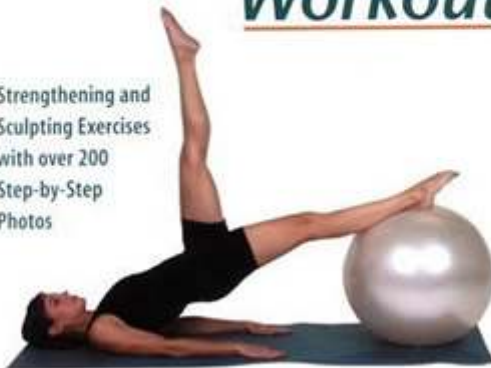
# Core Training



Government health warning...  
...don't swallow chewing gum!

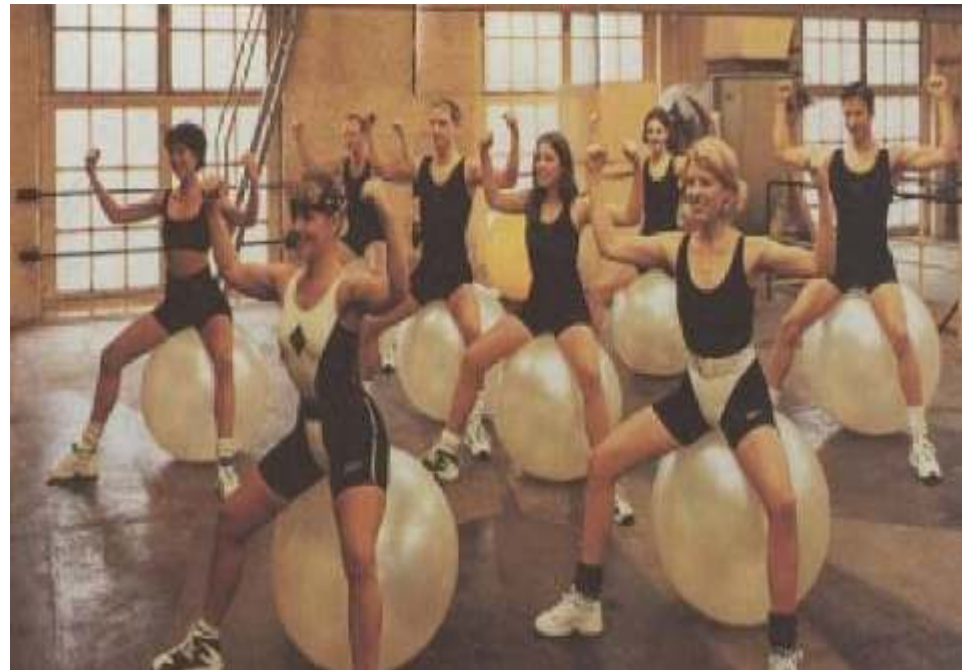
Ultimate  
**Core Ball**  
Workout

Strengthening and  
Sculpting Exercises  
with over 200  
Step-by-Step  
Photos



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# Functional Core Training



# High Intensity Interval Training (HIT)

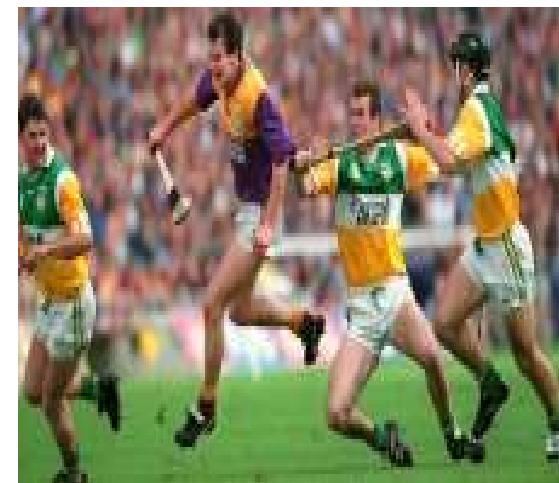
- HIT - "can be broadly defined as repeated bouts of short to moderate duration exercise (10sec - 5min), completed at an intensity that is greater than the anaerobic threshold". *Laursen & Jenkins; Sports*

*Med 2002; 32(1)*

- Also referred to as "Supramax" training.

# Purpose of HIT

- To repeatedly stress the physiological systems that will be used during endurance-type exercise (Bassett 2000)
- Gaelic Football/Hurling/Camogie represent agility based speed-endurance activity
- HIT training allows you to target both aerobic and anaerobic energy systems and integrate sports specific elements
- Improves physiological function and performance (Rodas, 2000; Billat et al., 1999, 2000; Smith 1999)



# Benefits of HIT

- HIT - results in improvements in all 3-energy systems
- Manipulative Variables include:  
Duration, intensity, work:rest ratio, method of completion, volume.
- Individualised training targets may be accommodated within each set
- Application of HIT facilitates technical & tactical performance.





# Stretching



- Probably one of the most controversial aspects of sport medicine/science
- Some evidence suggests that static stretching in the warm up does not reduce injury risk (Pope et al 1999; Shrier 1999)
- Studies suggested that posture/biomechanical deficits were more likely to predict injury risk than flexibility status alone (Watson 1996)
- For elite athletes flexibility should be considered as part of overall training plan

# Static Stretching

- Recommendations are clouded by misconceptions and conflicting research
- Despite limited evidence stretching has been promoted as an integral part of training to:
  - ✓ ↓ risk of injury
  - ✓ relieve pain
  - ✓ ↑ sports performance



# Stretching and Injury Prevention

- Scientific literature is unclear and contradictory
- Meta analysis by Thacker et al (2004) concluded that stretching was not sig. associated with a ↓ in total injuries
- Sports involving explosive type skills with many and maximal SSC movements (high tendon compliance) stretching may be an important preventative measure for injury prevention (Witvrouw et al 2004)
- When sports activity has low SSC, additional stretching exercise may have no effect on injury prevention

# Does Stretching Improve Performance ?

## Meta analysis (Shrier 2004)

### Conclusions:

- Acute bout of stretching:
  - ✓ Does not improve and may have a negative effect on explosive power
  - ✓ Running speed results are contradictory
- Regular stretching:
  - ✓ Improves force, jump height and speed
  - ✓ No evidence that it improves running economy

### Note

- All human data studies
- Most used static stretching
- Lack of 'blinding' - possible placebo effect

# Stretching V Warm Up

- Warm up is a widely accepted practice preceding nearly all athletic events
- Despite limited scientific evidence warm up routines prior to training and competition are well accepted
- Based on trial and error and experience of the athlete or coach rather than scientific study
- Routines differ in duration, intensity, recovery periods, mode of exercise and whether continuous or intermittent in nature



# Warm Up Structure

## Considerations:

- Nature of activity
- Athletes physical capabilities
- Team v individual warm up
- Environmental conditions
- Rules and regulations



# Recovery

- Cryotherapy
  - Ice baths
  - Chambers



- Contrast bathing



- Compression Clothing



# Ice Baths

- Limited/conflicting evidence to support benefits
  - ✓ Recovery?
  - ✓ Performance?
- Athlete satisfaction high - 'placebo' effect
- Possible mechanisms:
  - ✓ Vasoconstriction/dilation of blood vessels promote blood flow to muscles
  - ✓ removal of waste products
- Further research required

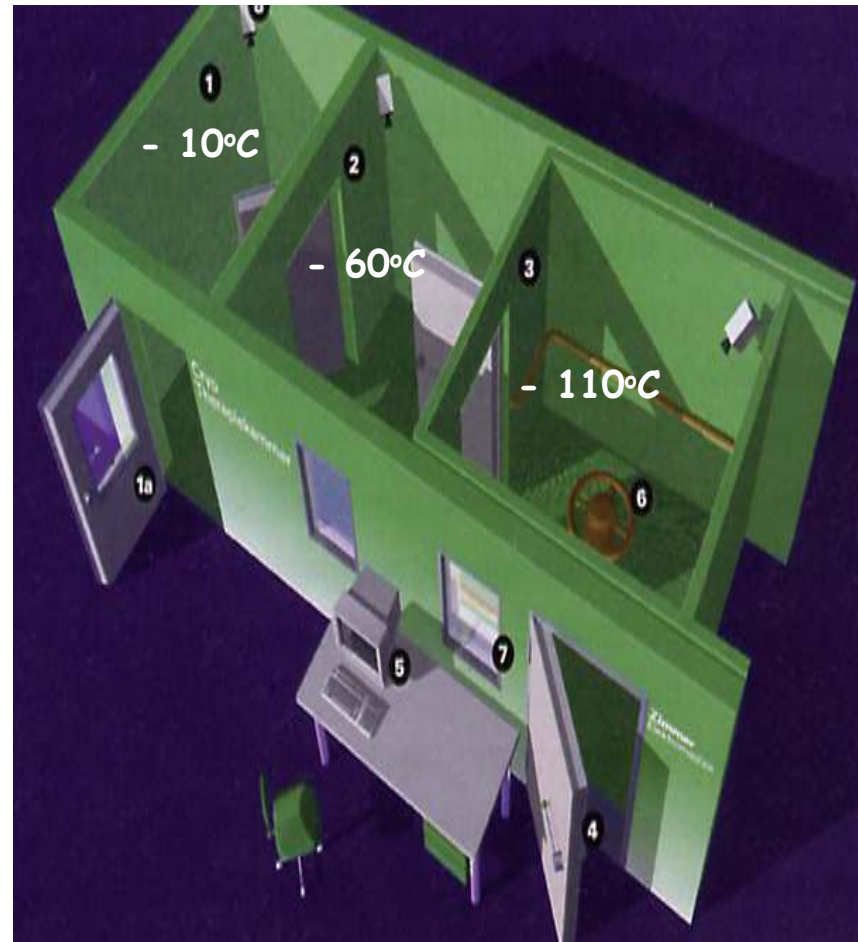




# Cryotherapy Chambers

## Suggested Benefits:

- Regulation of central activity levels
- Improve motor and coordination performance
- Increased in psychological and motor regeneration potential
- Economisation in energy balance
- Immune stabilization



No scientific evidence to support any benefits!

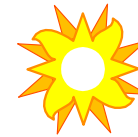
# Cryotherapy Chambers

## Indications for whole body cryotherapy

- Inflammatory-rheumatic joint diseases
- Osteoarthritis
- Fibromyalgia
- Chronic pains
- Spinal syndromes
- Tendopathies
- Muscular spasms
- Multiple sclerosis
- Blunt joint trauma
- Psoriasis
- Neurodermatitis
- Bronchial asthma
- Muscular dysbalances
- Central fatigue
- Sleep disorders
- Deterioration in psycho-physical performance



# Contrast Bathing



- Despite popularity no scientific evidence to support recovery benefits
- Appears to improve muscle/skin circulation and neural system recovery
- Theory is hot/cold induces pump action with alteration in opening and closing of blood vessels
- Perception of recovery amongst athletes from contrast bathing is good

## Current Recommendations

Re-hydrate before during and after session / Shower beforehand

Begin and end with Cold

Use shower / plunge pools - hot / cold

Safety / keep head out of water - do not use with acute injury

Alternate :            Cold (10 to 15°C)                            Hot (35 to 40°C)

                                 10 to 30 seconds                            1 to 2 minutes

                                 Repeat x 3 times

(Ref Calder: ASK)

# Compression Clothing

- Limited evidence to suggest that compression clothing may provide a recovery aid from muscle damage in rugby players (Gill et al., 2006)
- Proposed mechanisms:
  - Optimising blood flow
  - Enhanced lactate removal
  - Reduce blood pooling
  - Reduce swelling

Further research required



# Conclusion

- Like any skilled tradesperson the coach needs to understand the training tools available at their disposal and use them appropriately
- New isn't necessarily better!
- There are no quick fixes
- Performance is about planning, passion and leaving no stone unturned in the strive for excellence

'Confidence is in My Preparation'



...is it in yours?