Final Week Preparation – A prelude to the Main Event

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Aim & Outcome

- Aim: To present an overview of Final week preparation
- Outcome: Using a series of self reviews of their own preparation Coaches will establish key points for the lead in to the Final week before competition

Contents

- Clear goals
- Training and Playing age
- Peaking & Performing
- Periodisation
- Strategies for Recovery and optimal Performance
- Monitoring and Recording
- Final Week – sample Model
- Implications & Summary

Clear Vision

- ‘’You cannot go forward if you don’t know where you are starting from..’’
- Do you know your athlete-player start point and the steps you need to take with your athletes-players along the journey?

Training – Playing Age

- Playing age: years in formal playing structure
- Training age: years in formal supervised physical training
- Review your knowledge of your athletes and players:
- What is playing – training age of your athletes-players?
- What relevance is this to your planning and competition preparation?

Peaking/Performing

- **Peaking**: A process of bringing all the systems of the body to an optimum performance level on a given occasion.
  - Olympic 4 year cycle – individual athlete goal very achievable
  - In practice ok for individual sport but difficult for team sports
- **Performing**: Weekly competition demands that players able to perform at high level all time
  - Your sport and your programme will determine the extent to which you can peak

Periodisation

- Originated in weight lifting in Eastern block in 1960's
- Evidence from 1930's of its use
- The organisation of the training and competitive year(s) into periods of development, maintenance and recovery to attain different training and performance goals

Key components of Periodisation

- Macro, Meso, Micro
- Off-Pre-In-Season periods
- Single and Double periodisation
- Linear, Undulating
- **Cycling**
- **Unloading**
- **Tapering**
- **Volume**
- **Intensity**

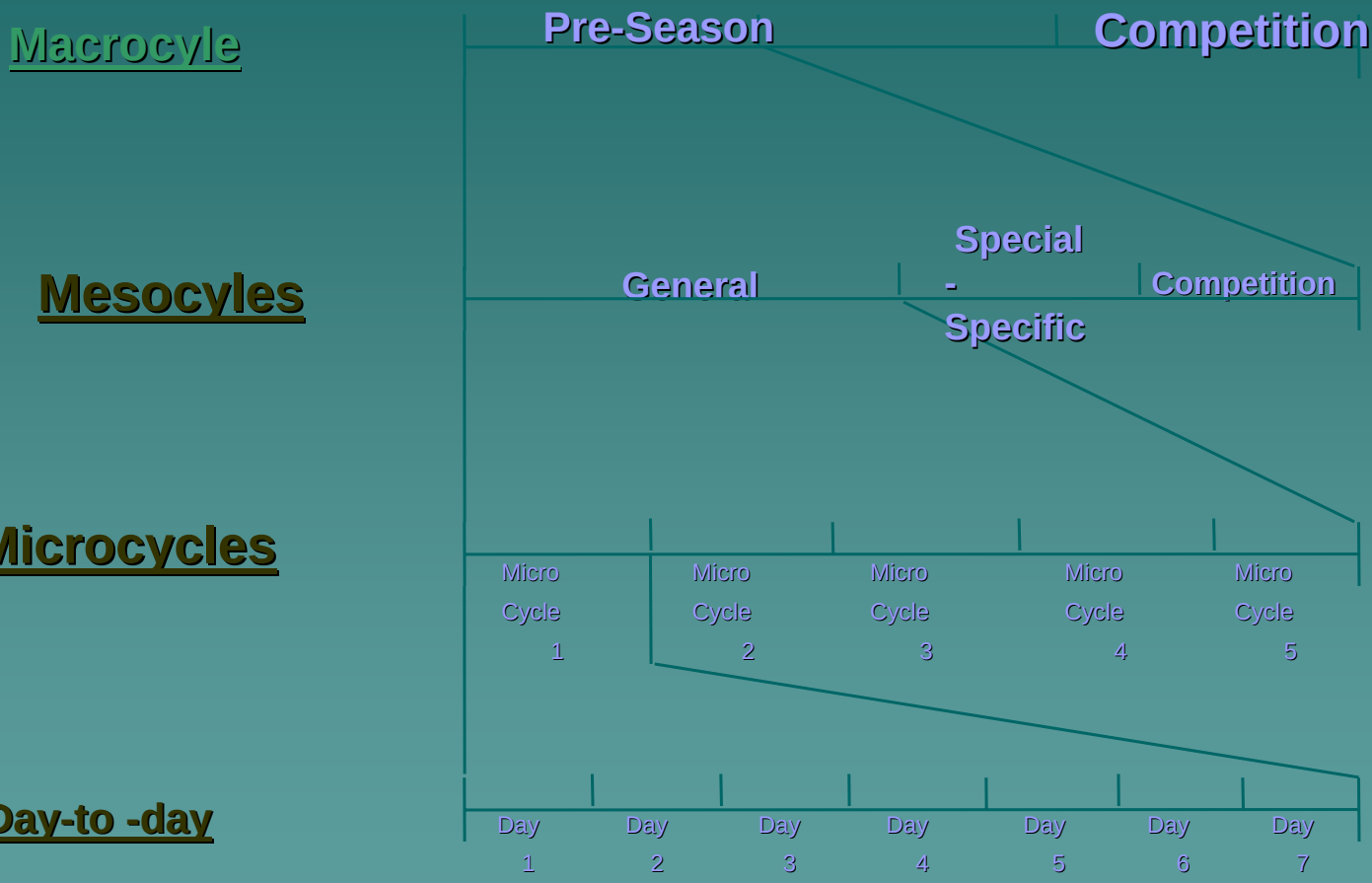
Periodisation – does it work?

- Good evidence to support its use.
- Proper application ensures that Recovery is not overlooked
- More recent concept:
- Individual periodised model v useful
- Can be used as a planning template for both individual and team sports

Individual Periodisation

- Proposed by Bosco 1985, advanced by Schmidtbleicher 1980-90's
- Emphasis on individual athlete and his/her **current status** of fitness and **process** required to advance fitness components that are required
- Bosco proposed using a programme of testing to identify the status of the athlete/player and the qualities that require development.
- Strong anecdotal evidence for its effectiveness
- Can be applied to both individual and team sports

Construction of the Macrocycle



Example of Pre-Season General Mesocycle

Example: Custom made Programme

	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct
Mesocycle	Pre-Season 1 (16 weeks)				In-Season 1 (8 weeks)		In-Season 2 (17 weeks)					
Phases	General preparation		Special preparation start of League		Specific preparation during League		Cycling during Championship					
Physical emphasis	Repair & Screen Lay Foundation Strength and learn to Move		Advance Strength & Prehab S & A Recovery		Power and Speed Progression and Play		Cycle Development, Maintenance and Recovery During Championship					
Games				1,2,3,	4,5,6	7,8,9,	10,11	12,13	14,15	16,17	18,19	20
Unload	1,2,3 ,4	5,6,7 ,8	1,2,3,4	5,6,7, 8	9,10,1 1,12	13,14, 15,16	17,18,1 9,20	21,22,2 3,24	25,26, 27,28	29,30, 31,32,33	34,35, 36,3 7,38	39,40, 41,42, 43

Review your practice

- Do you use periodisation in your planning?
- If not why not?
- If so what type of model and do you individualise?
- Sketch your periodised plan.
- Do you cycle microcyles?

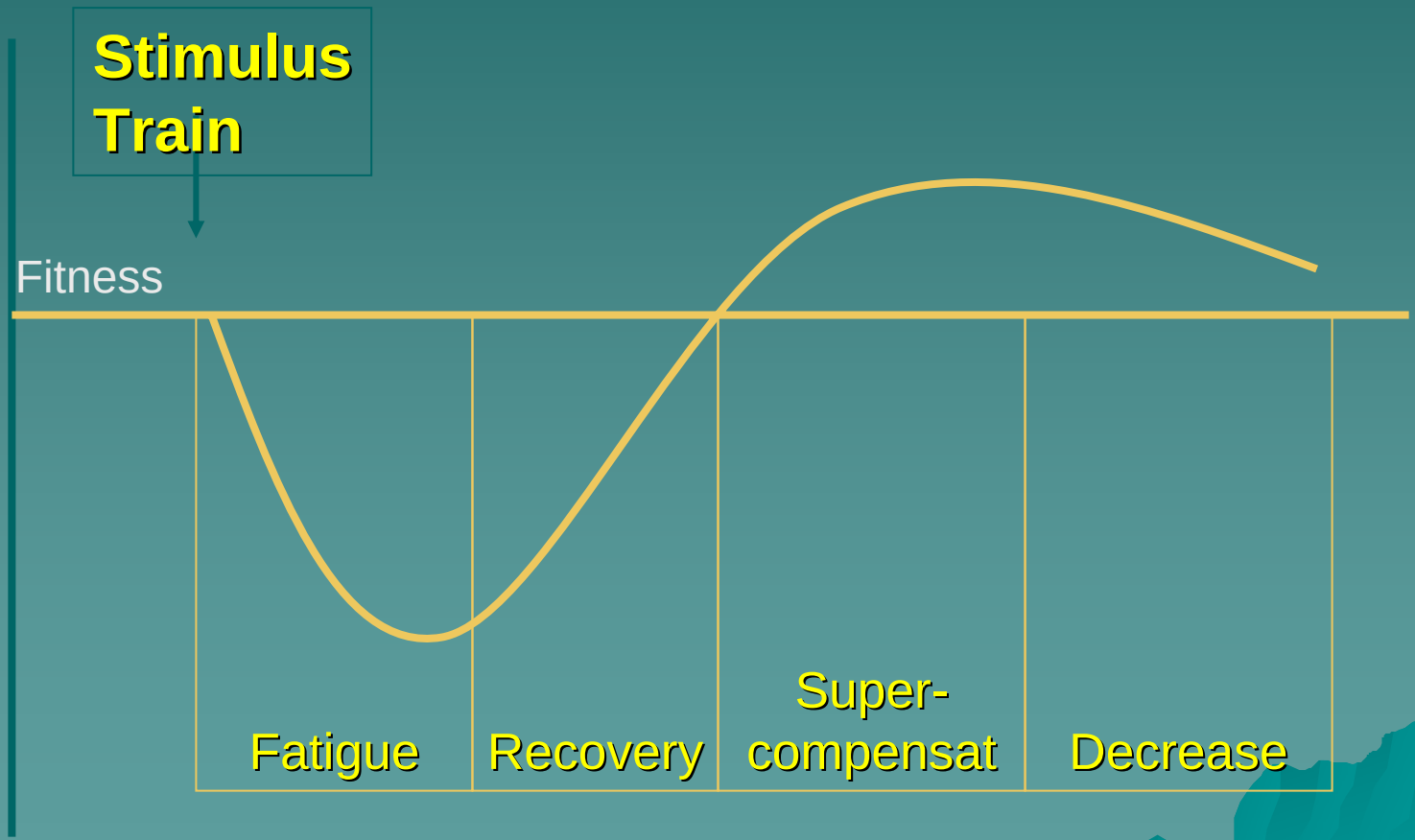
Recovery and Performance Strategies

- Must be used to ensure development
- Essential for lead-in to key competition
- Record of all training and practice VIP in ensuring that you will be able to taper properly for lead-in week

Fatigue

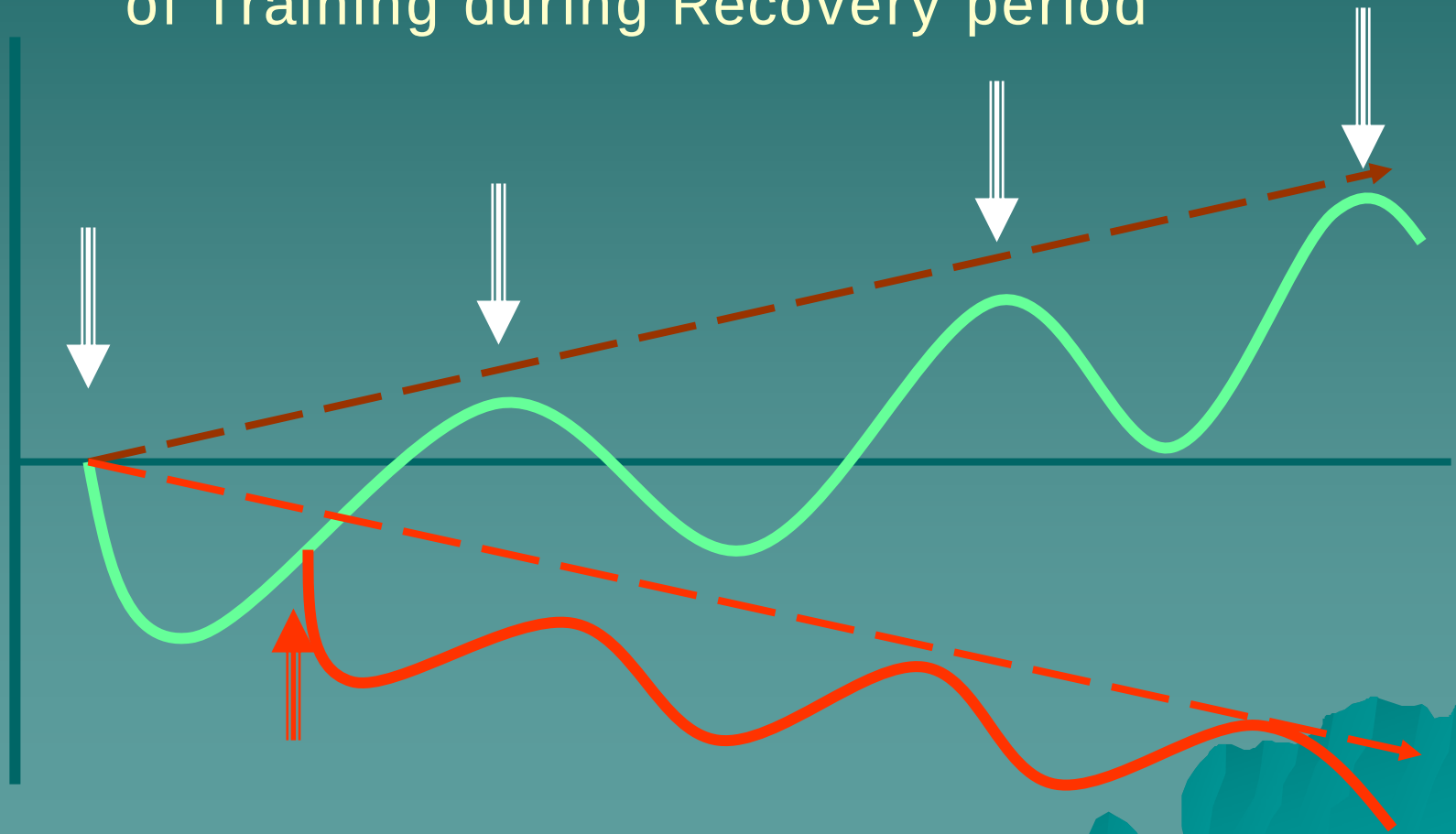
- An abnormality that blunts normal function
- In sport: it may reduce the capacity to:….
- However, it is a necessary state in order to induce positive adaptation
- It is the mix of stressors and recovery capability that impacts on the presence of fatigue

Training – Fatigue and Recovery management



Selye's GAS 1976

Effect of improper & proper placement of Training during Recovery period



Fatigue = Damage!

- Study by Takarada et al 2003 (Japan)
- Direct impact of tackle on body causes muscle damage.
- Decreased strength and power until levels return to normal
- Implications??

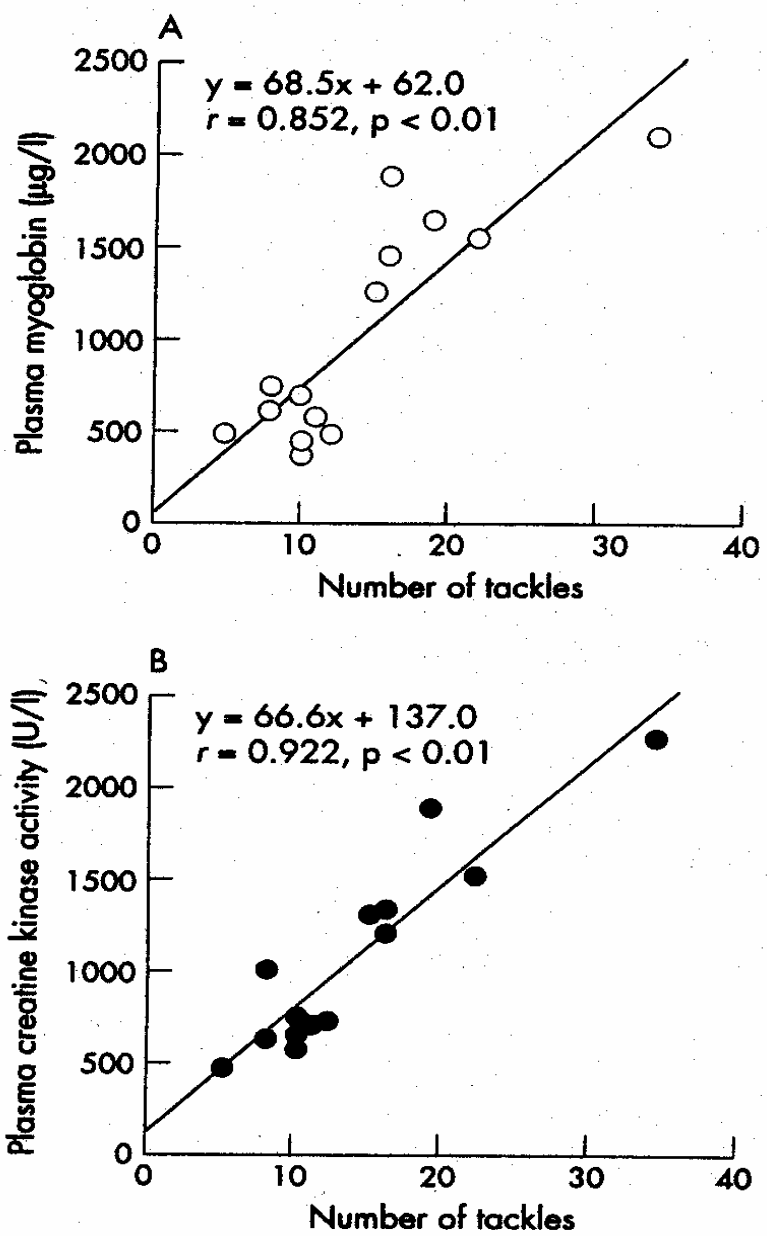


Figure 2 Relation between the number of tackles and (A) plasma myoglobin concentration and (B) plasma creatine kinase activity. Correlation analysis was carried out by linear regression, and the Pearson correlation coefficient (*r*) was calculated.

Muscle damage in Rugby

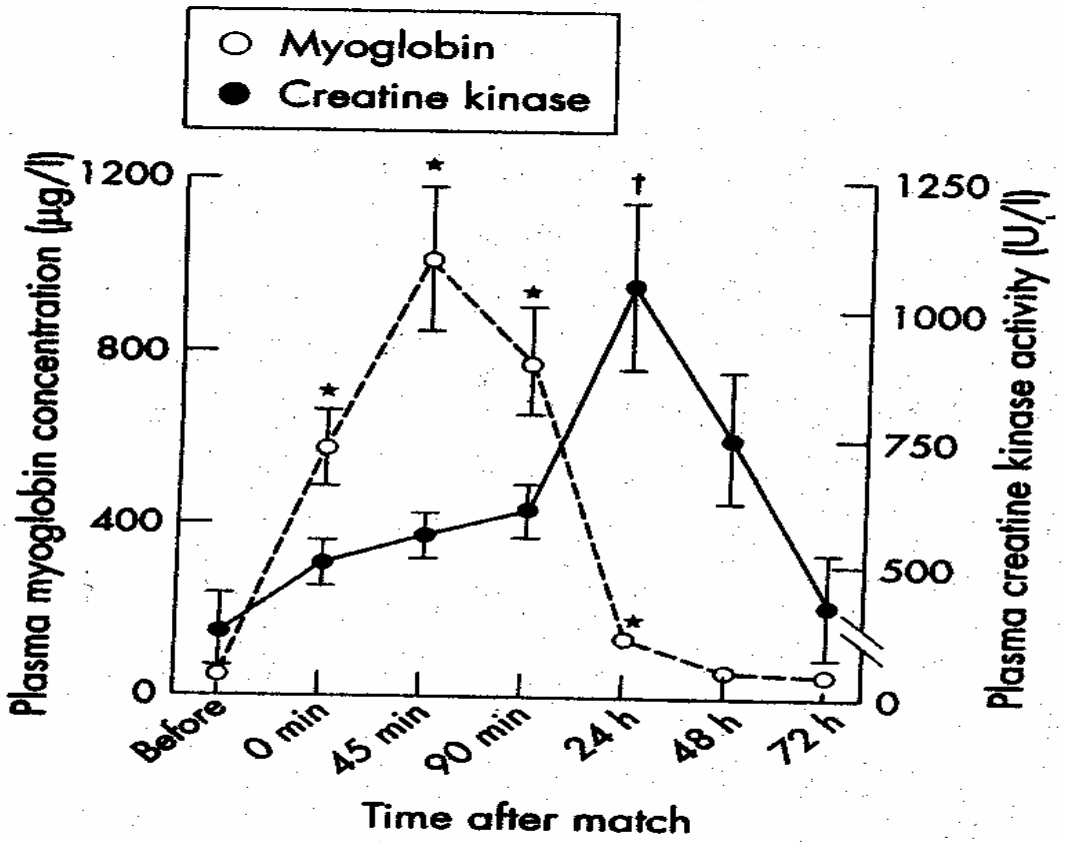
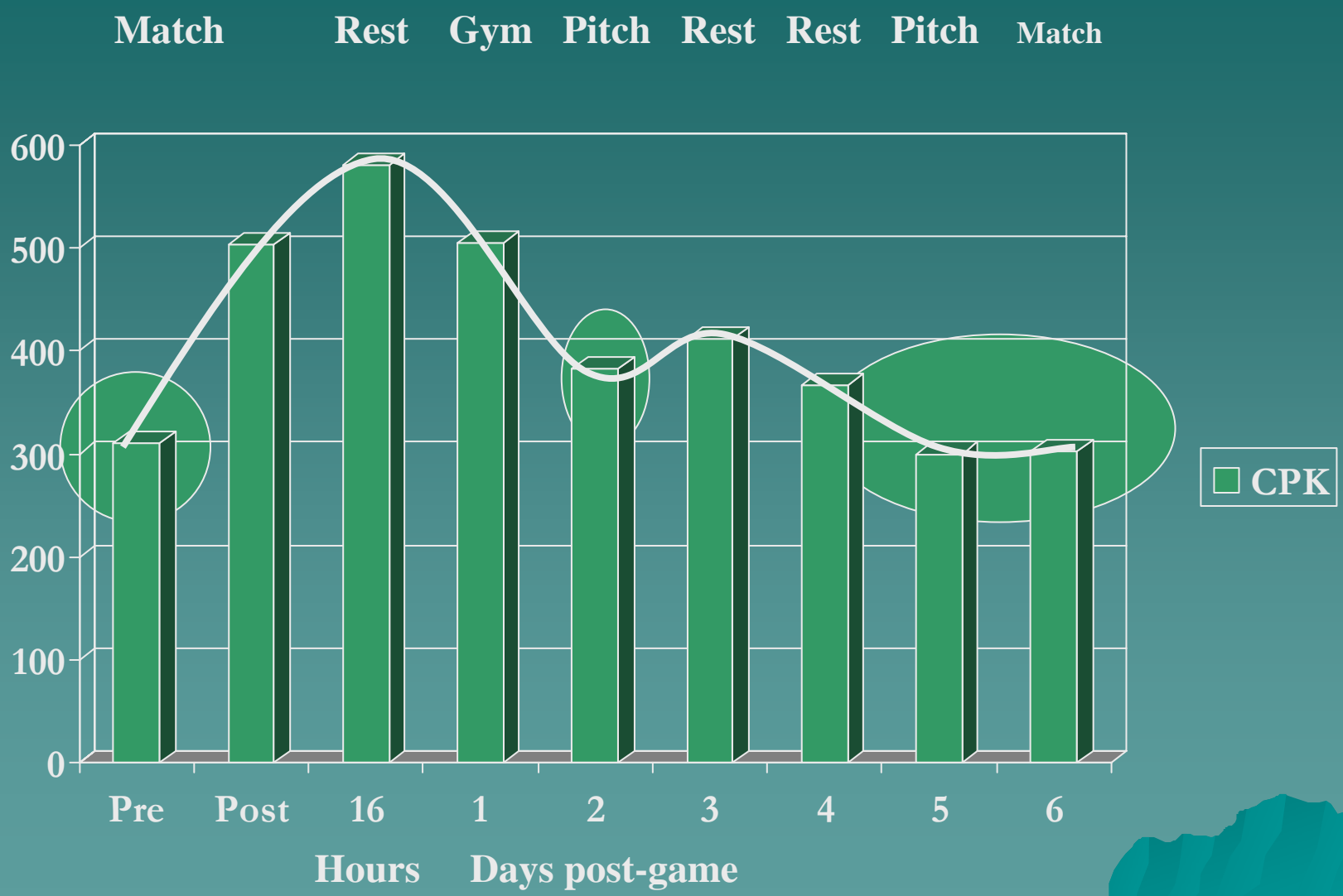
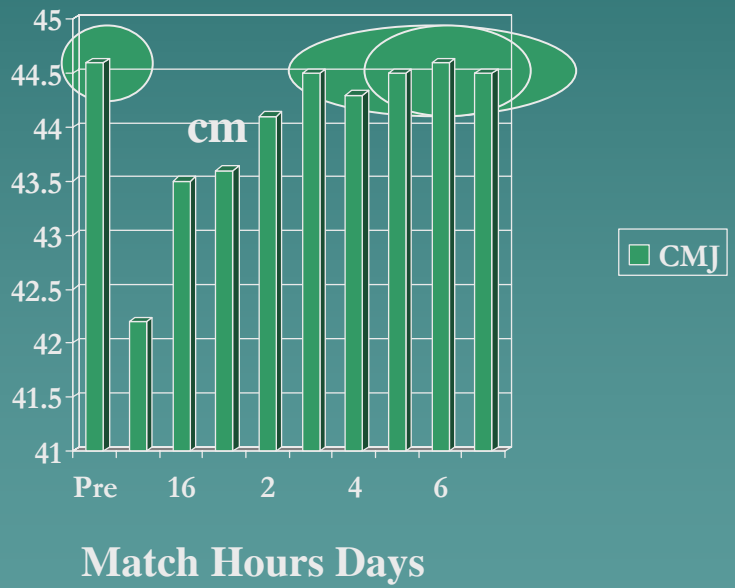


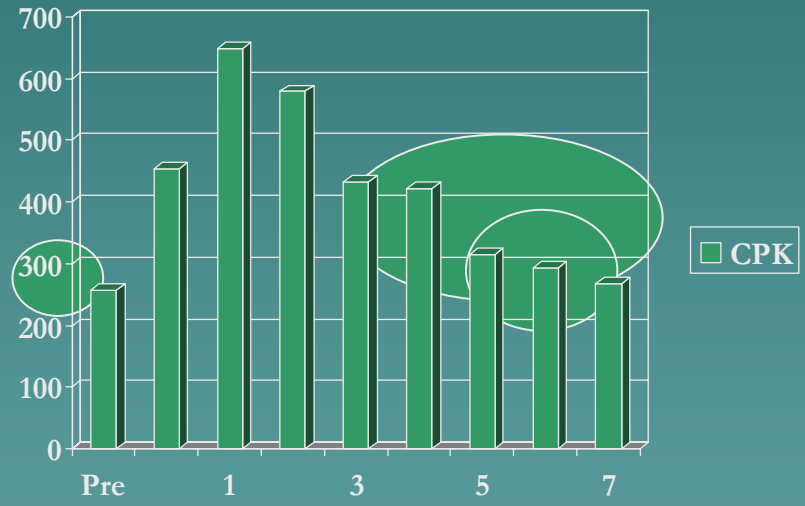
Figure 1 Changes in plasma myoglobin concentration and creatine kinase activity after the rugby matches. Values are mean (SE) (n = 14). *, †Significantly different from resting state within the same subjects ($p<0.05$, Wilcoxon signed ranks test).

Muscle damage in Gaelic Football



Recovery from Playing Soccer





Implications

- If training and competing = damage then
- Recovery from damage will lead to positive adaptation
- But damage and fatigue are necessary for development
- It is how we mix and use damage, fatigue and recovery that determines how our athletes and players adapt

Review your Practice

- How would you mix different training units and recovery during a pre-season week and a competition week?
- How long between competition and next intense training unit?
- If training within 2 days what intensity?

The work during the Developmental phase* determines the content of the competition week

* Development phase: Off-season & Pre-season for GAA, Pre-Season for Rugby and Soccer.

Key Areas for Consideration

- Nutrition
- Warm-up & Stretching & Cool-down
- Recovery Strategies
- Monitoring

Nutrition & Hydration

- Key factors
  - Diet reviewed by Nutritionist
  - Get this right before considering supplementation
  - Strategies for enhancing recovery post-training and competition need to be in place

Warm-ups

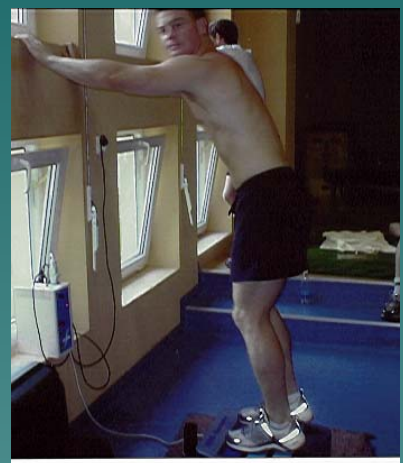
- Aim: To prepare player and athlete for physical, psychological and tactical demands of competition
- Sometimes WUp is overdone especially during key competition (too long..)
- Stretching often overdone
- Negative impact of static stretching on power and speed
- Positive impact using Potentiation only suitable for well-trained
- Optimum warm-up: Decide on time and activities and rehearse

Stretching

- Stretching = warm-up and post-exercise activity that limber and contribute to warm-up
- Flexibility = deliberately planned series of exercises that increase ROM
- Static & Dynamic – both Important but should be placed appropriately
- Static before may blunt power, strength and speed
- Dynamic stretching may improve power

Recovery

- Post-training during Intense training
- Post-competition
- Lead-in to competition



Recovery – Following Match

- Window Immediately post-Match
- Fuel and fluid replacement
- Stretch - static
- Cool-down Strategies –
  - Contrast repeated (Gill et al 2006)
  - Aerobic – cycle (Gill et al 2006)
  - Compression garments (Gill et al 2006)
  - Cold exposure (Burke et al 2000)
  - Underwater massage (Viitasalo et al 1995)

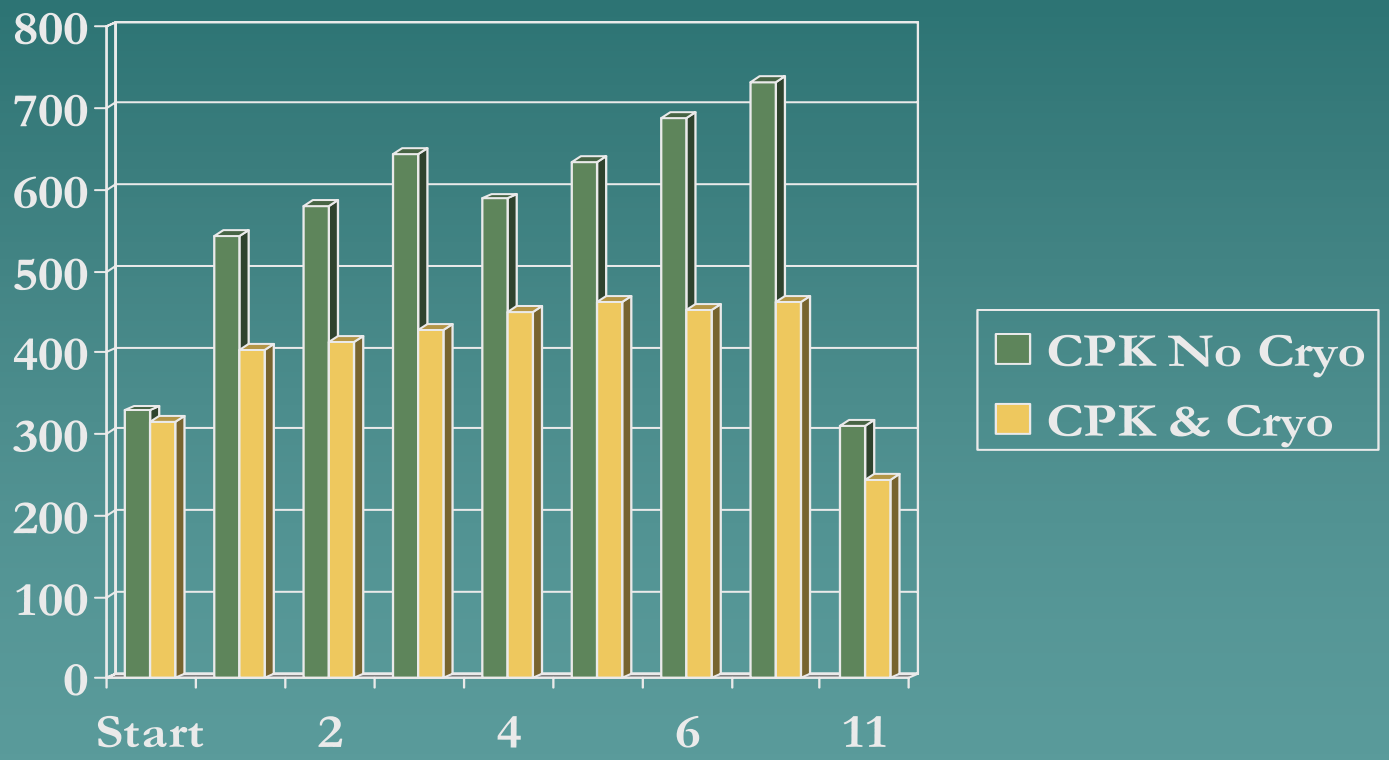
Other Recovery Possibilities

- Skins = compression
- Massage (including ‘endermo’)
- Vibration
- Cooling Vests – for pre and post activity!

Extreme Cryotherapy

- Poland 2000
- IRFU first to use
- -125-130 deg Cel
- Immediately post-train
- Mechanism?
- Significant improvement

Damage during OverReaching week with & without Cryo



Sleep: Natures way

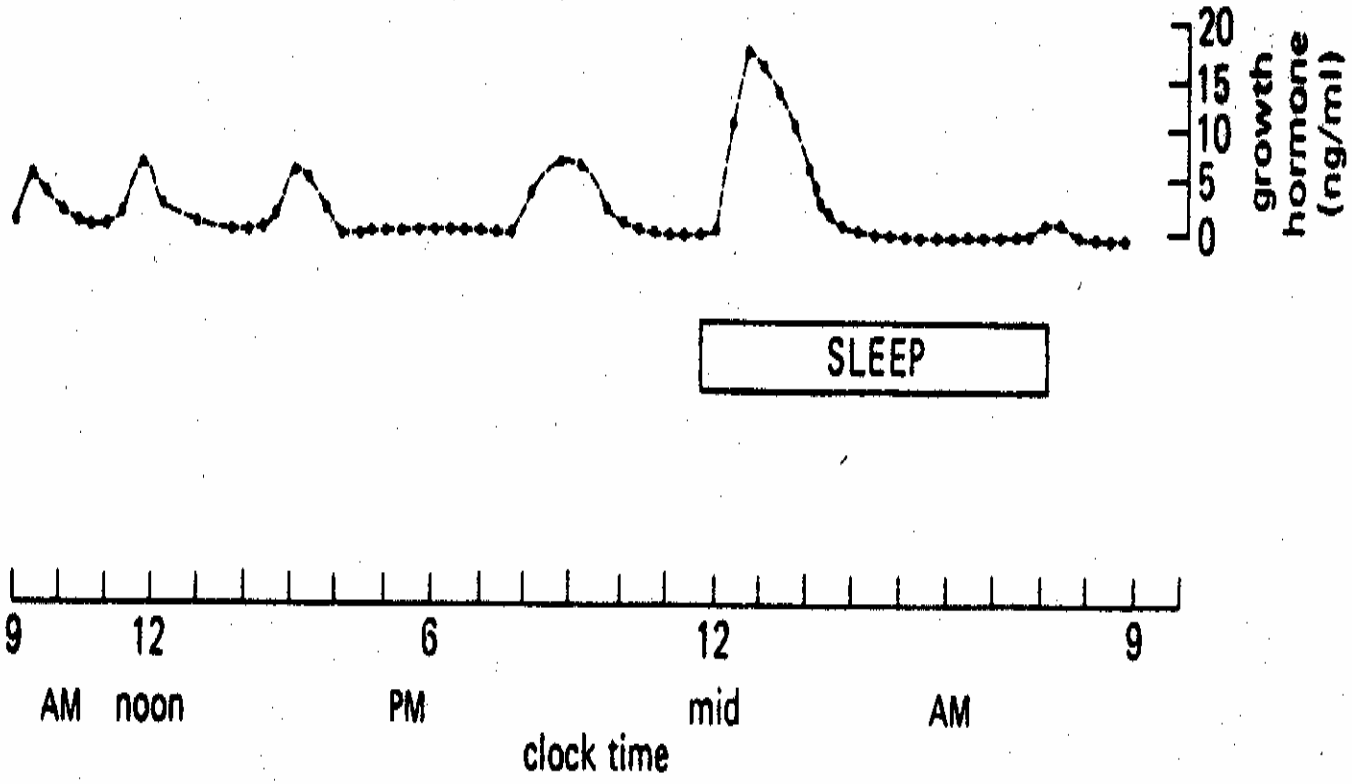


FIGURE 9-9. Plasma growth-hormone concentrations in a normal 23-year-old male throughout 24 h. Blood was sampled with an indwelling catheter so that sleep would not be disturbed. *[Redrawn from Sassin et al. (1972).]*

Review your Practice

- Do you plan Recovery into your programme?
- If not why not?
- If so describe strategies
- Note them and consider are they optimum to development and to pre-competition preparation – Nutrition, Warm-up, Cool-down, Stretching.

Monitoring

- What monitoring system do you use?
  - Being there, observing and interacting
  - ***POMS***
  - ***Body Weight***
  - ***Est Body Fat***
  - ***Volume – Intensity – Loads – Keep records***
  - **CMJ – Elastic Index**
  - Invasive: Red cells, White, IGs, CPK
  - ANS
  - Omega Wave

Autonomic Nervous system & Omega Wave

- ANS: Using time between heart beats to determine the stress-recovery of the different systems of the body
- Very useful for individual athlete monitoring but practical limitations for team use
- OWave: Uses ECG tracing, brain wave and reaction qualities to determine fitness status
- Est Aerobic capacity

Assessing Intensity

- Various methods used:
- RPE 20 point scale
- Lactate
- Heart Rate
- 10 point Intensity scale
- In Gym - %1RM and Power output

Review your Practice

- Do you monitor your players – athletes?
- If not why not?
- If so is your monitoring effective?
- Do you adjust and manage according to your feedback?

Sample Model

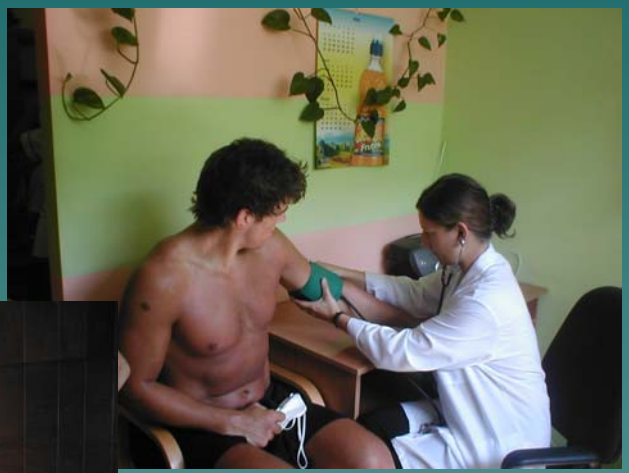
- Model of Professional Team Sport
- Principle of operation:
- Long season 40 weeks, short pre-season 6-10 weeks
- Need to ensure in-season development
- 3:1 build:unload in Pre-In-season
- Use of Overreaching in 3rd week of cycle (pre-season)
- Reduction in Volume of Conditioning from Pre to In-season: 40-60%

Pre-Season Volume of work in minutes

Weeks	Pre-Season Weeks 1-10
Practice	160-480
Conditioning	260-440
Total	380-550

Training Volume in camp OverReaching microcycle

- Camp = 1200 mins per week
- Home = 500 mins per week



Volume of Conditioning and Practice

Average Training Time in minutes per week

	Pre-Season (7-10 weeks)	In-Season (38-40 weeks)	
Activity	Player work	Early	Late
Skills & Practice	**Av: 295**	**Av: 270**	**Av: 230**
Conditioning	**Av: 300**	**Av: 150**	**Av: 70-80***

* during key competition periods ie Autumn and 6-Nations

Autumn lead-in

Week	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Vol
1	P 90 C 20 (2)	P 100 C 30 (6)	P 85 C 16 (4)	P 90 (3)	Off	Off	*Off*	365
2	P 95 C 30 (6)	P 95 C 18 (7)	Off	P 90 (5)	P 35 (3)	G 101	*R* *(30)*	315
3	Off	P 95 C 35 (3)	P 60 C 12 (7)	Off	P 85 (6)	P 30 (2)	G 101	265
4	*R* *(30)*	P 90 C 25 (3)	P 60 C 12 (7)	Off	P 60 (6)	P 30	G 101	240

8-10 = Match intensity, 7+ = High, 6 = Med, <5 = low

Amateur Game

- Volume or Time in Practice in lead-in to important game will be determined by previous workload of players and their training age.
- Taper 1 (~50%), 2 (~40%), 3 (~30%)
- Maintain Intensity in one unit during lead-in week

Amateur Game: Tapering lead-in

Week	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Vol
1	C 45	P 90		P 80		C 30	*Pr 60*	245
2	C 45	P 80		P 80		C 30	*G 80*	235
3	C 45	P 80		P 60		C 30		215
4	C 35			P 60		P 25	*G85*	120

Review your Practice

- Outline your typical lead-in week to a game or competition.
- Compare it to an early pre-season week in terms of Volume of work.
- Outline your Intensity variation within this week.

World indoor Champion Week to Peak

1	2	3	4	5	6	7
Lift: 1. Clean 2. Snatch 2 sets Max intention with light and heavy contrasted load	4 x 4 hurdles with long rest (5 min)	Light warm-up drills	Rest	Rest	Compete	Compete

Key Points

- Records of all stressors
- Monitor players response to work
- Use cycle (3:1, 4:1)
- Taper dependent on previous volumes
- Reduce volume by 25% +
- Maintain Intensity in competition week but limit time
- Standard and rehearsed warm-up
- Limit static stretching
- Recovery strategies planned