INJURY PREVENTION & PERFORMANCE OPTIMISATION SCHOOL / YOUTH ROWING

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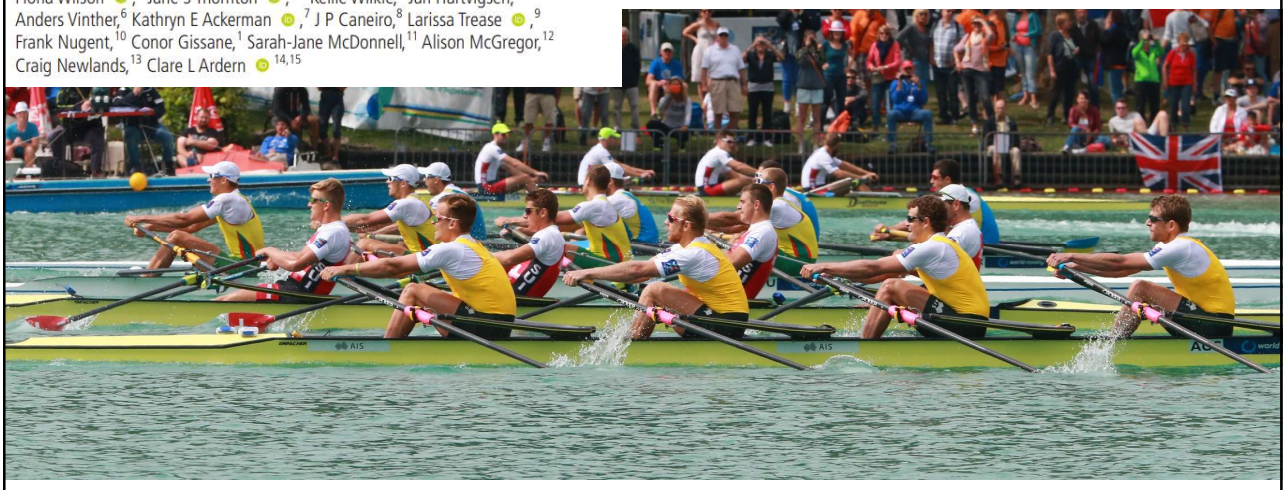
BODYSYSTEM® PHYSIOTHERAPY EXERCISE PHYSIOLOGY REHAB

1

Consensus statement

2021 consensus statement for preventing and managing low back pain in elite and subelite adult rowers

Fiona Wilson [1], Jane S Thornton [2,3], Kellie Wilkie, [4] Jan Hartvigsen, [5] Anders Vinther, [6] Kathryn E Ackerman [7], J P Caneiro, [8] Larissa Trease [9], Frank Nugent, [10] Conor Gissane, [1] Sarah-Jane McDonnell, [11] Alison McGregor, [12] Craig Newlands, [13] Clare L Ardern [14,15]



2

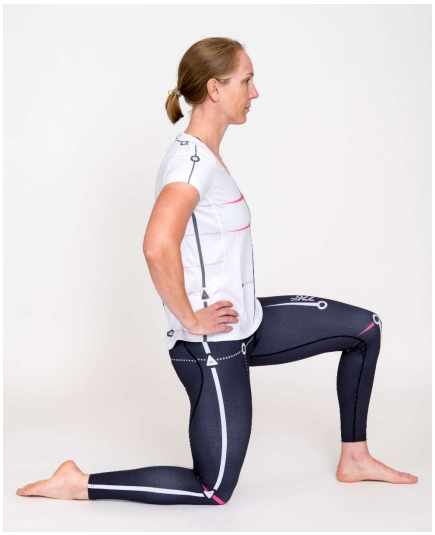
OPTIMAL POSTURE

3

OPTIMAL POSTURE: CATCH
Ankle + knee + hip motion

4

ROWING SPECIFIC STRETCHES
1-2min hold



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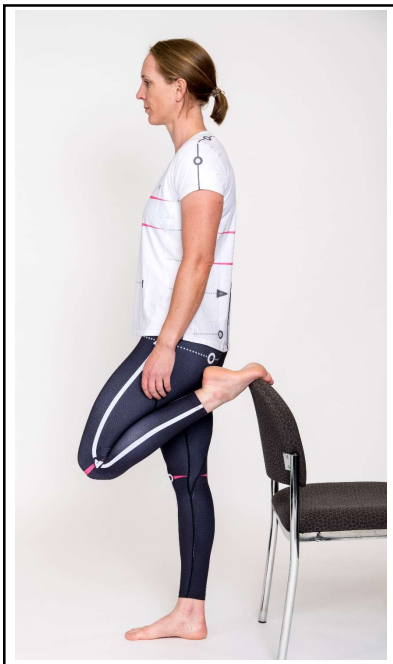


ROWING SPECIFIC STRETCHES
1-2min hold

6

Start rowing when start growing!

- Reduction in flexibility
- Reduction in strength

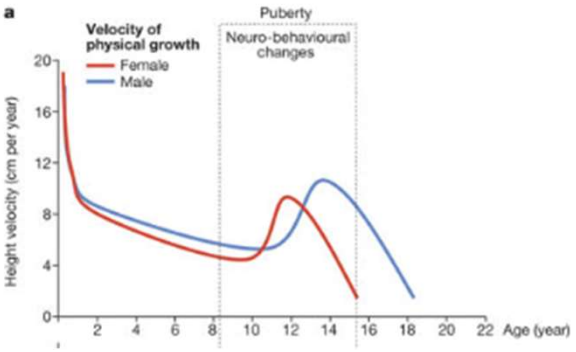
Male rowers – prioritise flexibility

Female rowers – prioritise strength

Importance of investing in adolescence from a developmental science perspective

Ronald E. Dahl, Nicholas B. Allen, Linda Wilbrecht & Ahna Ballonoff Suleiman

Nature **554**, 441–450 (22 February 2018)



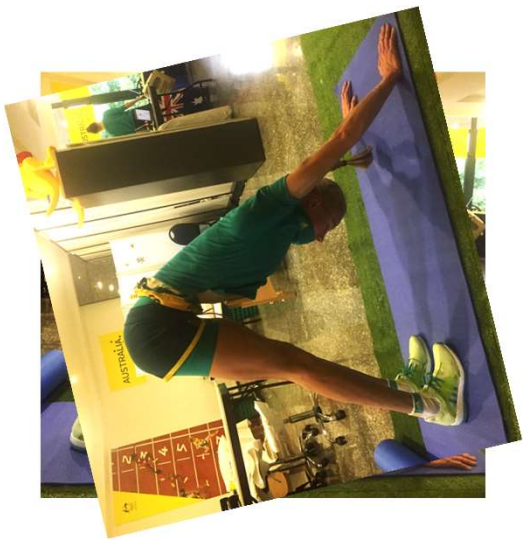
7

MID-DRIVE & ROCKOVER
Hamstring length

8

HAMSTRING FLEXIBILITY

Stretch 1-2min L+R Daily



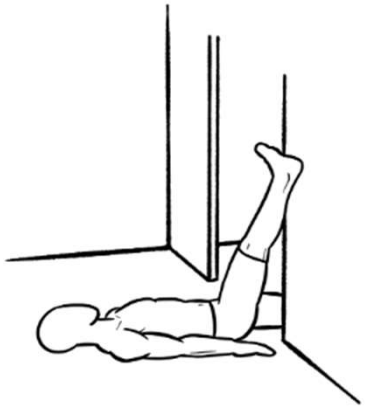
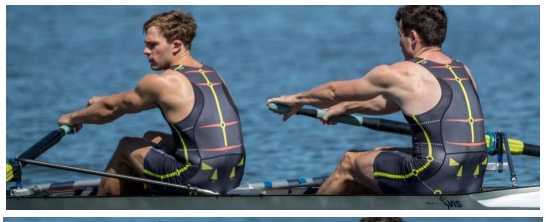
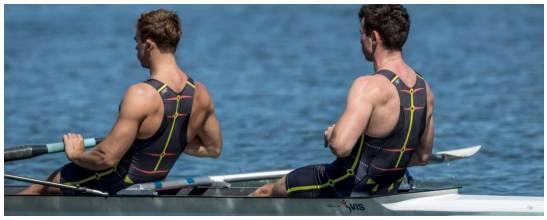


Image credit: ; F Wilson 2016; Artist V Earle

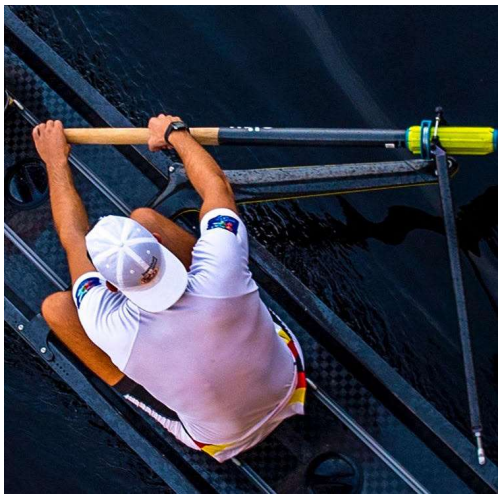
9





SWEEP

Not much rotation!



10

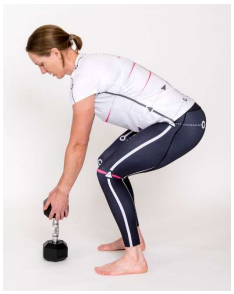
END OF STROKE
Abdominal strength + pelvic motion

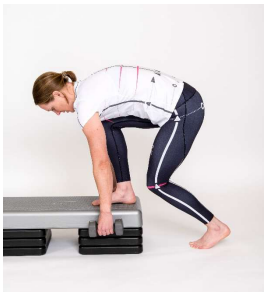
11

TRUNK / ABDOMINAL STRENGTH & ENDURANCE

12

POSTERIOR (BACK) TRUNK STRENGTH & ENDURANCE





Female races = distance as male
Races take longer
Endurance demands are higher

13

Hip flexion
Hamstring length
Abdominal strength

Ankle motion
Lat strength
Glut strength
Quad strength

WHAT IS MOST IMPORTANT?

14

TRAINING LOAD

YOUNG GROWING BODIES

Sports-Specialized Intensive Training and the Risk of Injury in Young Athletes

A Clinical Case-Control Study

The American Journal of Sports Medicine, Vol. 43, No. 4
DOI: 10.1177/0363546514567298

Increased injury risk if;
Training hours / week
GREATER THAN
Age in Years

AIS

Prescription of training load in relation to loading and unloading phases of training

PREVENTING INJURY

Planned & completed training must avoid;

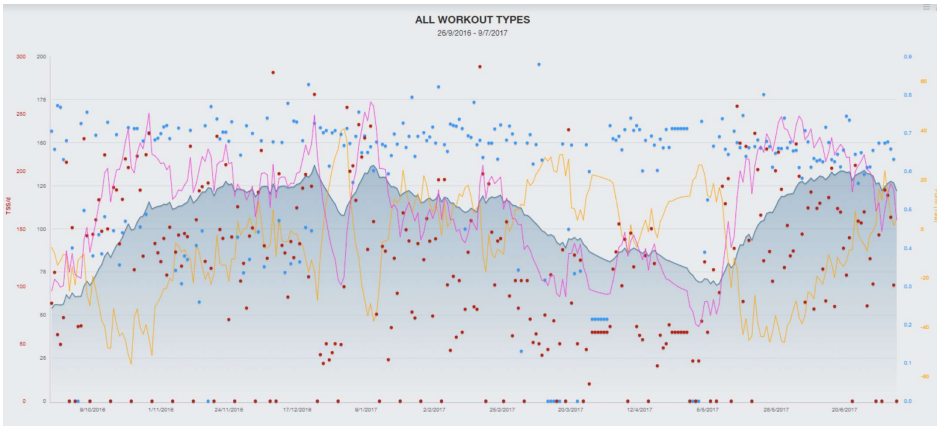
- A sudden increase in load
- A 'dip' in load followed by increase in load

Understand that;

- An injury or illness results in an unload predisposing to secondary injury or illness
- High chronic (3 month) load is protective

15

TRAINING LOAD



U23 Rower 2016-17 Season
Data provided by Rod Seigel VIS

16

TRAINING LOAD

AIS

Prescription of training load in relation to loading and unloading phases of training

Executive Summary, Version 1, 4 May 2015

Table 1 – Determining modified training period on return from reduced training load.

Weeks of training at a reduced load	Weeks of modified training required to return to full training (total weeks of modified training)				
8	8 (16)	6.9 (14.9)	5.8 (13.8)	4.8 (12.8)	3.7 (11.7)
7	7.4 (14.4)	6.3 (13.4)	5.3 (12.3)	4.2 (11.2)	3.1 (10.1)
6	6.9 (12.9)	5.8 (11.8)	4.7 (10.7)	3.7 (9.7)	2.6 (8.6)
5	6.3 (11.3)	5.2 (10.2)	4.2 (9.2)	3.1 (8.1)	2.0 (7.0)
4	5.7 (9.7)	4.7 (8.7)	3.6 (7.6)	2.5 (6.5)	1.5 (5.5)
3	5.2 (8.2)	4.1 (7.1)	3.1 (6.1)	2.0 (5.0)	0.9 (3.9)
2	4.6 (6.6)	3.6 (5.6)	2.5 (4.5)	1.4 (3.4)	0.4 (2.4)
	0%	20%	40%	60%	80%
	Percentage of training of normal training load completed				

CONSIDER

Illness

Injury

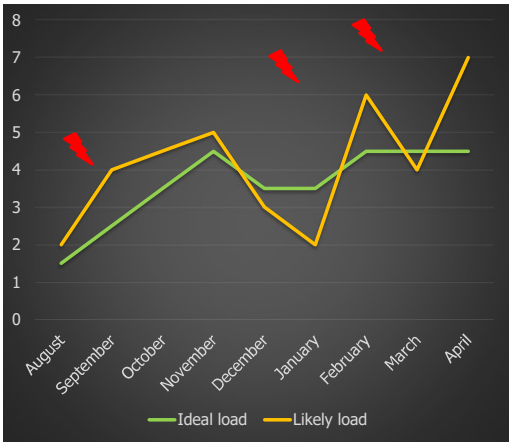
Exams

Moratorium / Christmas

17

SCHOOL ROWING CALENDAR

- Start Aug / Sept, term 3
- First regatta – Oct, term 4
- Summer break moratorium
- January camp
- Regatta throughout term 1
- Head River – March
- Nationals – March, April



18

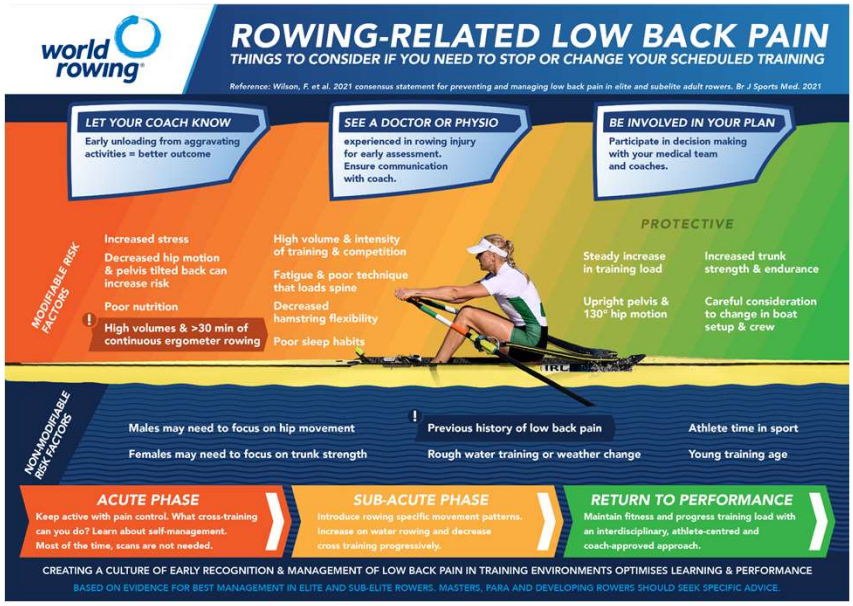
ERGOMETER TRAINING

<20min at one time

Should be coached!

Fixed more loaded that dynamic

Dynamic may result in hip pain



19

EARLY MANAGEMENT OF LOW BACK PAIN

If Rower has;
1) Sharp pain
2) Pain getting worse
3) Pain lasting >30m after row erg
4) Have to modify training or technique
SEE PHYSIO WITH ROWING EXPERIENCE

2-4 days rest initially (can be up to 6 weeks)
Avoid complete rest

Row / erg = pain > avoid
If can sit without pain > bike
Sit = pain > walk, steps, hills, swim, elliptical

Aggressive unload = less time out of training
Continuing to row / erg with pain = muscle splinting, poor performance, increased severity of injury

Heat + simple pain relief + exercises +/- AIs

Communication with coach about what CAN do

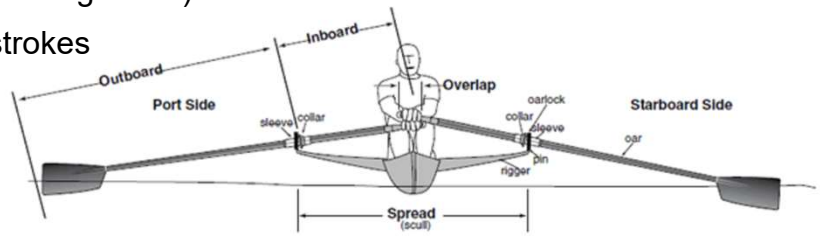
SAFE-GUARDING
Rowers should NEVER be made to row injured
Rowers should NOT persist with pain

Culture of speak up early = early unload = early management + good communication = early return to boat

20

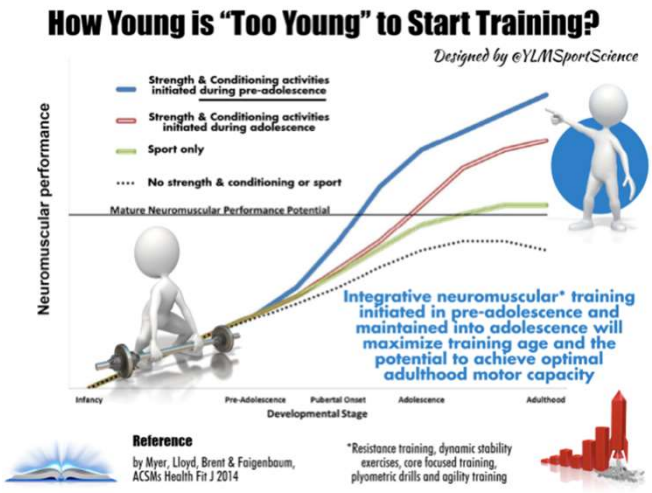
RETURNING ROWER TO BOAT

- Adhere to medical / health care advice
- Trail erg = great place to start – 10m
- Lighter first row back
  - in middle of big boat (not stroke)
  - Shorter row (coach boat not ideal)
  - Keep rate up (low rates = high load)
  - Avoid starts & power strokes
  - Avoid poor weather
  - Avoid injured boat!
- Ask rower how they are feeling?
- Observe the rower's movements
- Consider gearing
- Consider seat & foot stretcher height
- Consider what boat returning to



21

STRENGTH & CONDITIONING



Strength

Best done in 'off season'

Females x3 per week

Males x2-3 per week

Smaller gains when endurance training is high

During season

Focus on core, flexibility & movement patterns

22

INJURY PREVENTION

ROWING SCREENING

GRowingBODIES

			Test																	
			Sit & Reach	Ankle DF		Thomas Hip Ext		Hip Flexion		Hip IR		Active Knee Ext		Active Slump		Thoracic Rotation		Pop/Pull Test	
				L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R
BENCHMARKS		>10cm	12			5		130		25		-10		-20		60		-ve	
		0-10cm	6 - 12			-5 - +5		110 - 130		10-25		-30 - -10		-40 - -20		45 - 60			
		<0cm	<6			<-5		<110		<10		<-30		<-40		<45		+ve	
NAME	DATE	HEIGHT (CM)																	

ADDITONAL TESTS				
Short Quads (heel-buttock<10cm)	L=No issues	R=No issues	Trunk control mid-late drive	Needs improvement / needs to build repetitons / very good
Thomas Hip abduction	L=No issues	R=No issues	Leg & trunk connection	Needs improvement / needs to build repetitons / very good
Leg length / pelvic symmetry	Symmetrical		Crunches - trunk strength	Needs improvement / needs to build repetitons / very good
Low Back Flexion / Extension	No issues		Extension - trunk strength	Needs improvement / needs to build repetitons / very good
Low back Lateral flexion	No Issues		Other	

TRAINING LOAD		
Rowing sessions / week		A sudden increase in training load can predispose to injury - slow increases are protective
How long at this level ?		A 'dip' in load (eg.sick for a week) followed by a steepload increase can increase injury risk
Other training eg. gym		A slow build to load & 3 months of consistent training load is protective of injury or illness
How long ?		Load comments;
Other sports		
Recent changes in training load		

EXERCISE PHYSIOLOGY

If no injury;

Assess

Flexibility

Muscle patterning

Strength

Load Management

Physio do this too

23

ENERGY AVAILABILITY

- Growing & sport = energy intense, it is difficult to eat enough for rowing & growing
- Link between energy insufficiency & injury + illness
- Need to eat energy dense foods such as pasta, bread, potatoes * sugar is not bad!
- Carbohydrate & protein snack post training – increases anabolic hormones and reduces protein breakdown
- Chobani yoghurt, peanut butter on sour dough, eggs on toast, smoothie, up & go

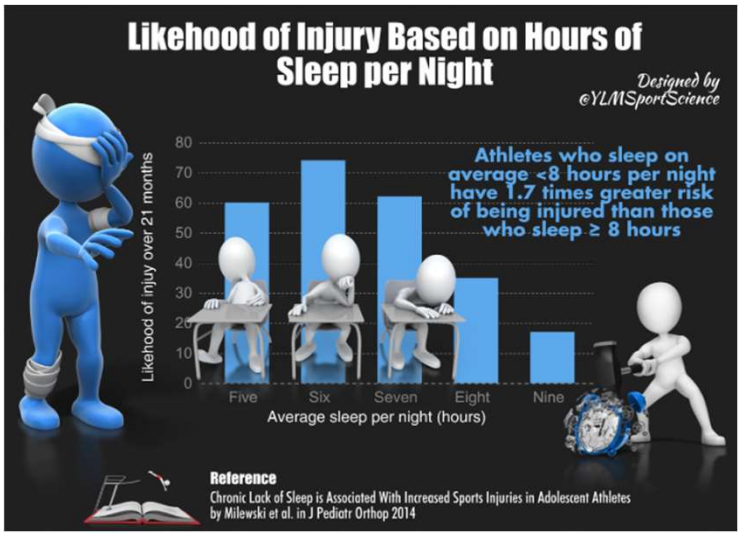
AIS

Female Performance & Health Initiative

Delivering educational opportunities and resources relating to key female athlete performance and health considerations

24

SLEEP



25

HOW DO YOU PUT THIS ALL INTO ACTION!!

WARM UP – best done on the water
(push away & row ½, ¾ then full slide)

STRETCHING – best done after the session while you are debriefing
(Glut, hip flexors, hamstrings, calf, quad 10m)

ABDOMINAL EXERCISES
X3 / week 2x20 > 3x30 > 4x40 (ball or no ball)
Not immediately before row / erg

STRENGTH
Best in the off season

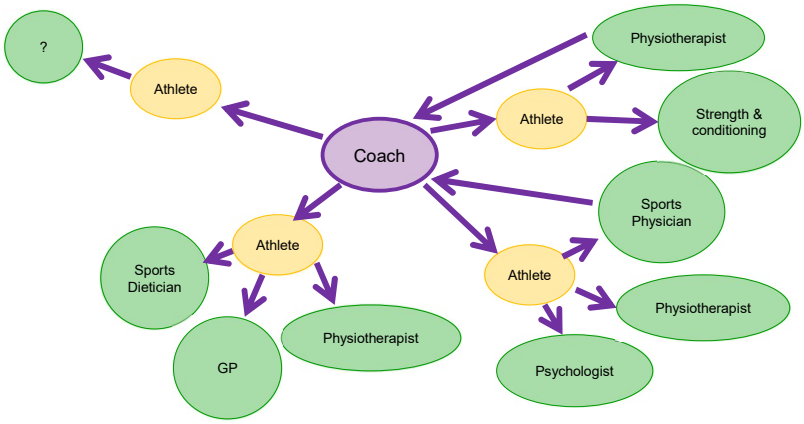
ERGOMETER ROW & CROSS TRAINING
20min max before up and move (2x20min ok)
Much greater load than on water
Mix with bike is good
Running is shock absorption – not always great

TRAINING LOAD
Plan it and track actual load
Be aware of individual needs
Check it with Taylor – meet with him 1hr

Rowing is hard, create a culture of open communication & trust
Priorities are training consistency, sleep & food

26

COMMUNICATION

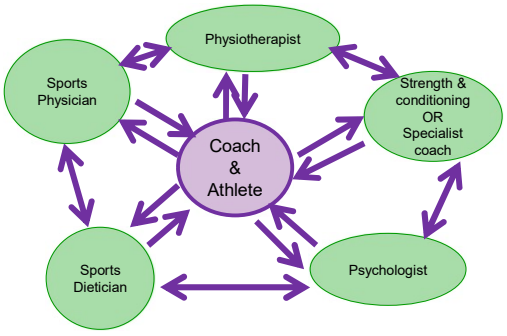


27

OPTIMAL COMMUNICATON

HEAD OF ROWING

WE WANT YOUR EMAIL!



Parent = Manager / Facilitate Communication

28

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