

# 2011 RYA CLUB & COACH CONFERENCE

POSTURE  
AWARENESS &

*Matthew McGovern Physiotherapist*

SAILING FITNESS

# My Background

- Physio RYA/ MOD
- Sailing/ windsurfing coach
- Sailor/ Windsurfer.



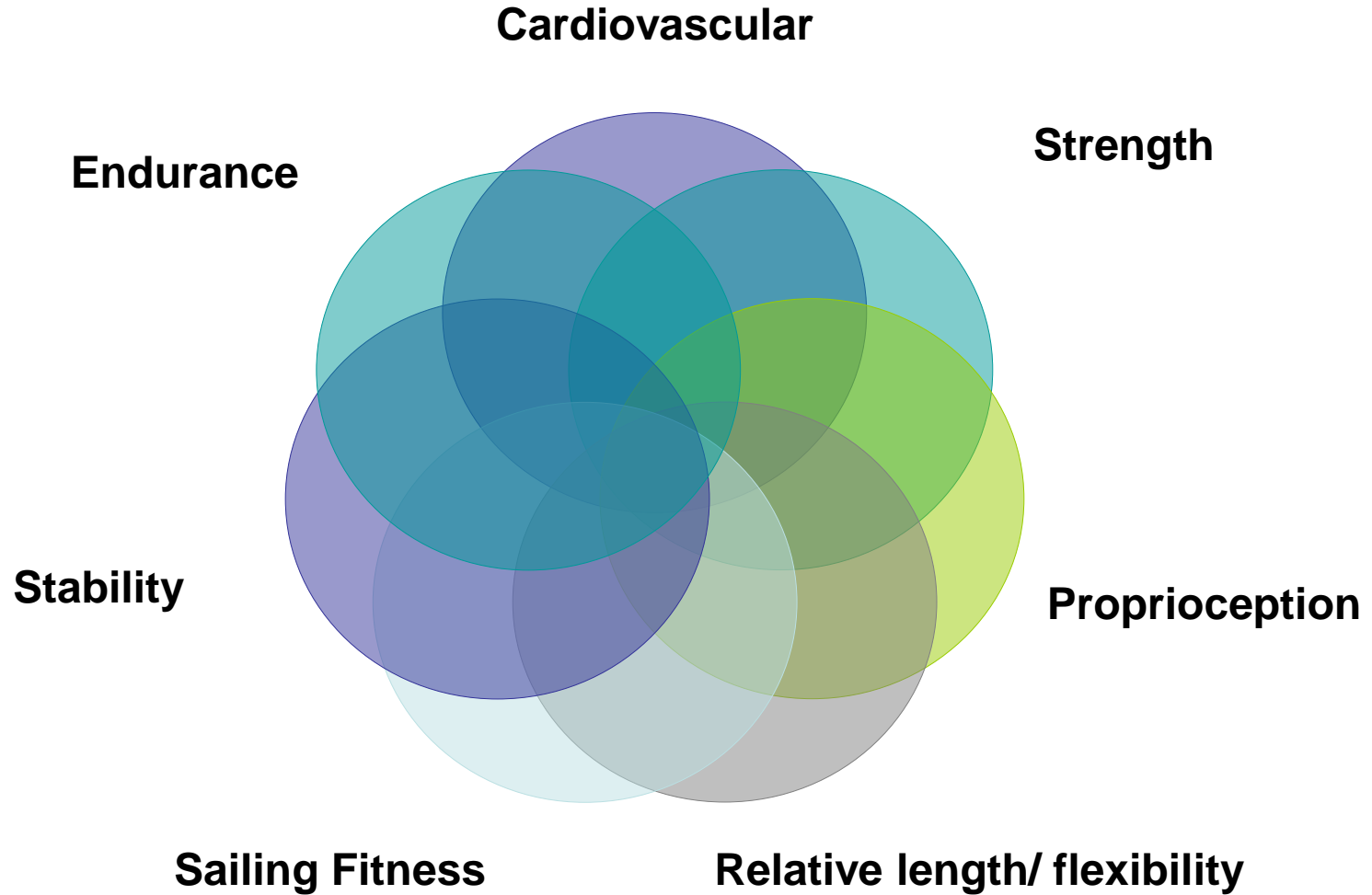
# Aims

- Understanding of fitness requirement and principles
- To understand the concepts of Neutral Spine, Scapula Setting and Knee alignment.
- To be able to identify incorrect postures/ techniques and how to improve them.
- To make sailors aware of the importance of correct posture.



# Fitness Parameters

There are several parameters to overall fitness;



**Each component is inter-related and governs the optimum functional potential of the human body in any sporting performance.**

# Talent is not enough!

**It is common to see, in a group of highly talented individuals, a high level of talent coupled with poor movement skills.**

**If the body is not willing, technical progress and sailors performance will always be limited**

**The really talented sailors may not have the body to reach their potential and perform to the highest level**

**You need to be **FIT** FOR Sailing!**

# Specific Fitness

## Remember ABC EFG

Agility

Balance

Co-ordination

Explosive Strength / Power

Fast Reactions

Good Timing

**Running, Jumping, Throwing, Catching, Kicking, Hitting**  
**Should be focus of all sport under the age of 12**  
**Many of these skills are no longer taught in**  
**schools**

# How to achieve sustainable athleticism

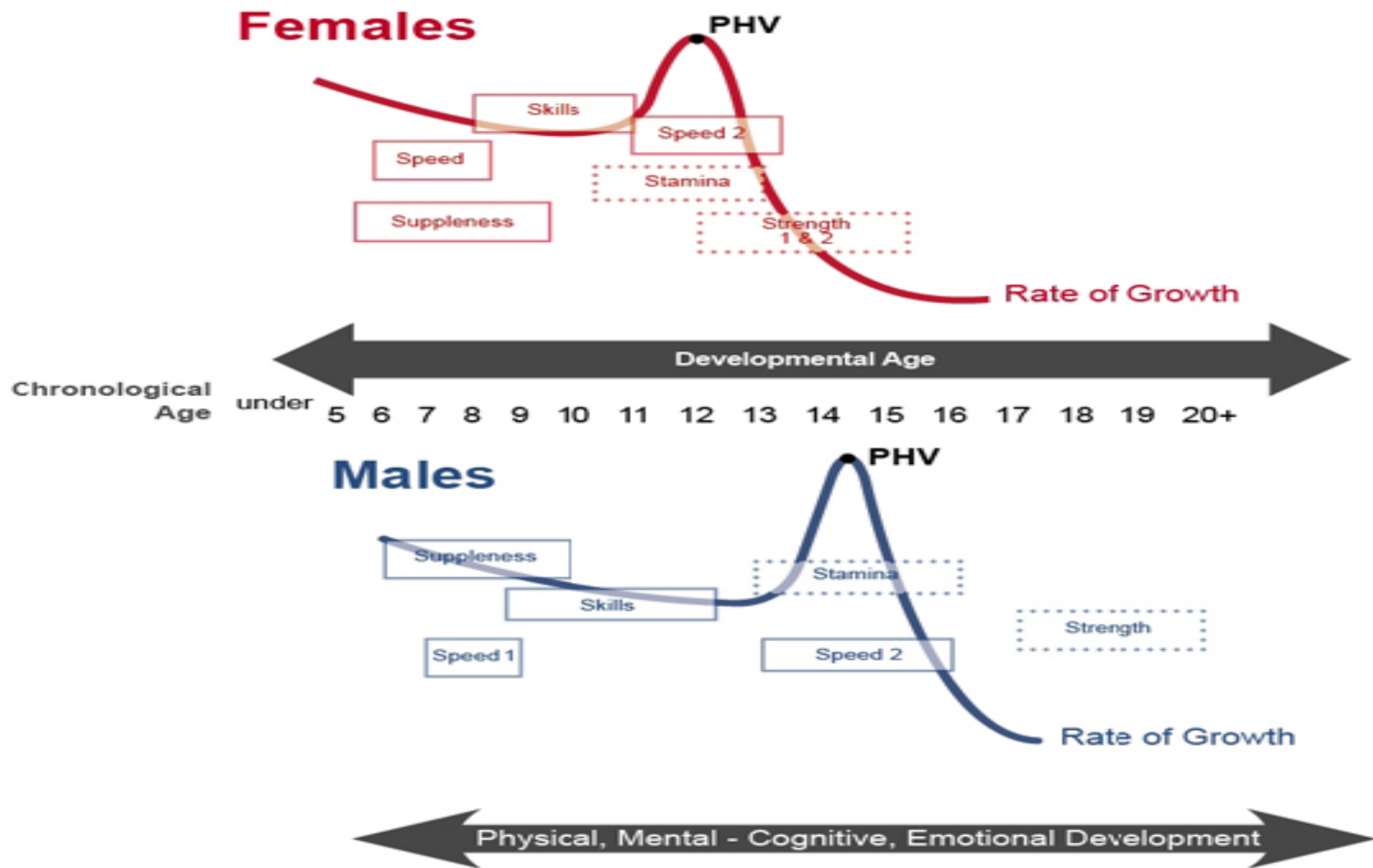
- It is vital to develop good patterns of movement at an early age (Long Term Athletic Development)
- Until aged approx 12, children should play a variety of at least three different sports to enhance the acquisition of these skills. Sailing alone will not develop a good Sailor!
- Children have windows of opportunity to learn different movement skills at specific ages
- Failure to highlight these areas of weakness/ expose people to exercise will result in injury



# Windows of Trainability

- **Flexibility:** both sexes between 6 & 10. Special attention should be paid at adolescent growth spurt
- **Speed:** Two windows  
Females between 6 & 8 then 10-13  
Male between 7 & 9 then 13 -16
- **Motor Skill:**  
Females between 8 & 11  
Males Between 9 & 12
- **Strength:** Females immediately after Peak Height Velocity (PHV). Males – 12 – 18 months after.

# Optimal Windows of Trainability



# Gender Differences

## Female:

- Internally rotated knees
- 12-14yrs – reduced co-ordination (starting periods)

## Both

- Growth Spurts = reduced co-ordination

Non impact activity  
Gentle stretches

Don't compare M – F

The **RED** Rule ... **R**emember **E**veryone is **D**ifferent!



# RYA Fitness Model

- Conditioning/ Injury prevention programme
- Education
- Squad support – NJ/ NY through to Olympic
- Fitness testing
- Exercise Programme design specific to the athletes needs – CV/ S&C/ HR/

# Core and S&C Emphasis



S & C



Youth

Technique/ Load

Olympic

Loading



# Why do we need to discuss hiking posture/ Body positions in sailing?

- Prevent injury / unwanted stress on the body
- Optimise hiking position
- Increase strength
- Improve efficiency of full body movements
- Highlights when a sailor is tired.

**A Sailors fitness training program is typically separated into the following training segments:**

1. Posture
2. Balance training
3. Mobility and flexibility training
4. Strength and core stability training
5. Cardiovascular training

**What are the 3 elements to good posture?**



# What are the 3 elements to good posture?

- Knee alignment
- Neutral spine
- Scapula setting

# Fundamentals - Posture

World Class  
Junior Sailing

Team GBR  
RYA

**How good is your partners  
posture?**

## Test Yourself:

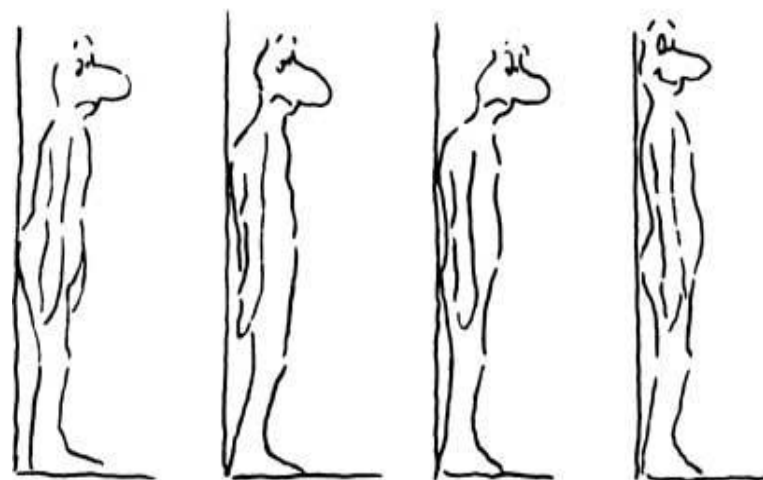
Stand against a wall with the back of your head, shoulders, hip, and heels touching.

Are your back and shoulders too rounded to do this?

Does your chin tuck forward or lift up?

Do you have to arch your back to touch your head?

Is your hip so tight that your back is uncomfortable to stand straight?



# Which one are you?



Sway  
Back



Lumbar  
Lordosis



Thoracic  
Kyphosis



Forward  
Head



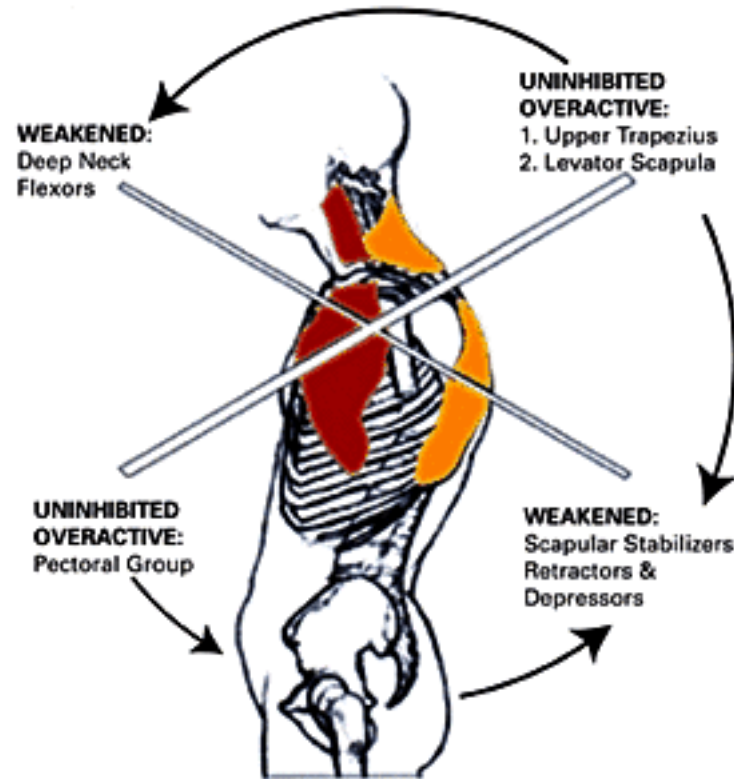
Good  
Posture

# What you might see!

**Symptoms of poor posture can include:**

- **Back pain/ knee pain**
- **Body aches and pains**
- **Muscle fatigue**
- **Reduced strength**
- **Muscle imbalances**

# Muscle imbalance and slings



- Anterior and posterior slings.

# More Specifically.....

- Tight calves
- Tight hips (at front)
- Turned in knees and impaired ability to bend the knee correctly
- Over arched lower back
- Long weak gluts (bum) muscles
- Over active abdominal muscles (stomach)
- Under active inner layer stability muscles
- Impaired ability to tolerate loads through lower spine, and control rotation of pelvis, flexion and extension.
- Forward shoulders
- Tight upper and middle back. ....**Leading to pain and INJURY**

# Screen Key Movement

- Squat
- Single leg squat
- Lunge

Don't need to be experts.

Just for education.

All these movements happen all of the time  
during sailing and normal movement!

**HAVE A GO. !**





# Squat Technique

## Common Faults or Anatomy of a Bad Squat



**Not Breaking the Parallel Plane**



**Rolling Knees Inside Feet**



**Dropping Head**



**Losing Lumbar Extension**  
(rounding the back - this may be the worst)

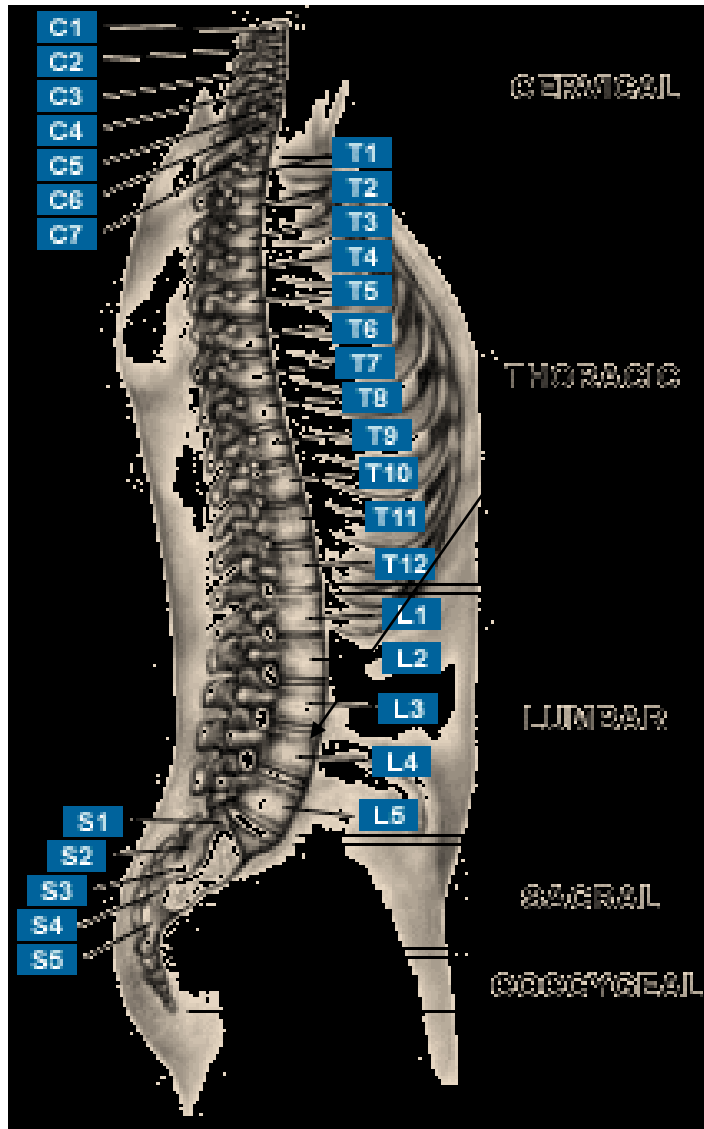


**Dropping the Shoulders**



**Heels Off the Gound**

# Neutral Spine



Neutral spine (lordotic curve)















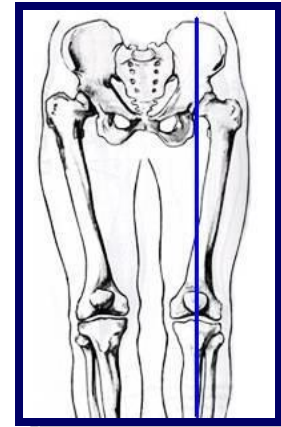


# Knee Alignment

Key points:

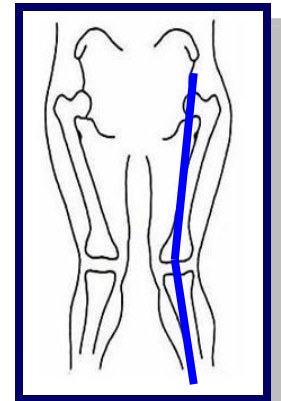
## Standing

- Toes pointing at five to one of a clock face – in standing.
- Knee over 2<sup>nd</sup> toe when bending.



## Sailing

- Knees point forwards (no internal rotation)
- Ankles – foot strap over ball of foot.



Exercise – Look at your partner in standing

Try a double leg squat

Try a single leg squat

# Knee Alignment



# Knee Alignment



# Knee Alignment







# Scapula Setting

## In standing/ sitting

- Neutral spine – neck
- Scapula set position – Not slumped!
- Think tall!

## In sailing

- Shoulder position
- Scapula set position
- Neutral spine

## Exercise

- Slouch in chair  
Try and lift arms above head  
Try and turn neck from left to right













What do you think of these?













**Unfortunately it is not possible to have a perfect posture all the time!**

# How do we Improve Hiking Posture?



# Coach education – video / photos

## On and off water/ in normal debriefs



# Exercise Feedback

- Mirrors ?
- Video
- Phones
- Verbal
- 'Feel the movement'



# Exercises







Level 2 exercise



Level 4 exercise

# Warm up

- Why?
- What do you currently do?





**What do you do with your squad?**

# Warm - up

## What it does

- Increase the Heart Rate
- Increase blood circulation
- Mobilize muscles ready for use
- Increase alertness

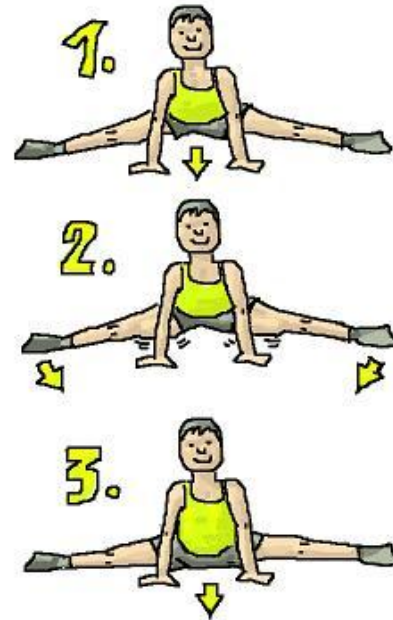
## How

1. Varied
2. Fun
3. Dependant on age – What to include?
4. Active movements
5. Cover movement in the sport/ activity
6. Non- contact

# Warm-up



- CV
- Stretching – What type?
- Movements relevant to the sport/ activity
- Mobility +/-
- Time ? How long do you have?



# Warm – up Ideas

- Mobility exercise
- Games
- Tennis ball agility catch
- Stuck in the mud
- Touch rugby
- Circle with equipment
- Netball – with cones
- Flip cones
- Team ball pass
- Running??

# Warm -up

Don't forget.....the ideal warm-up!

## Sailing

- Water based
- 10 minutes of boat handling specific to the training/ conditions of the day

## Windsurfing

- Due to the physical nature of windsurfing a land-based warm-up is more appropriate

# Warm Down

- Stretching
- Head to toe using all muscle group
- Nutrition
- Helps remove waste products from the working muscle. E.g muscle pump



# Reasons For Warm-Downs

- Allows body to recover gradually
- Removes lactic acid and carbon dioxide
- Shortens the recovery time
- Decreases muscle stiffness
- Bring the team together at the end of a session/ race whether they win or lose – make the warm down fun!
- Can incorporate slow static stretches to improve flexibility whilst muscles are warm

# Training Sessions/ Ideas

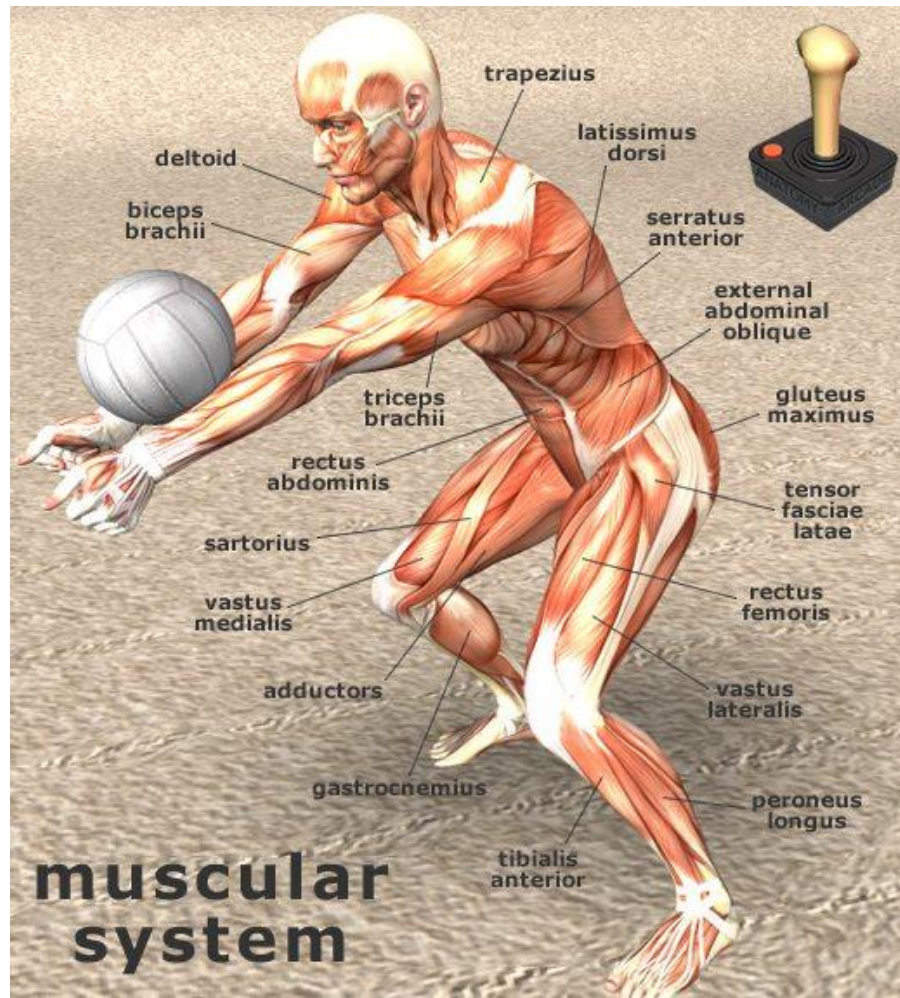
- Dependant on knowledge
- Keep it simple
- Relevant to sailing/ windsurfing where possible.





# Understanding of Exercises?

What is the difference between isolation exercise and combined?



# Muscular Slings

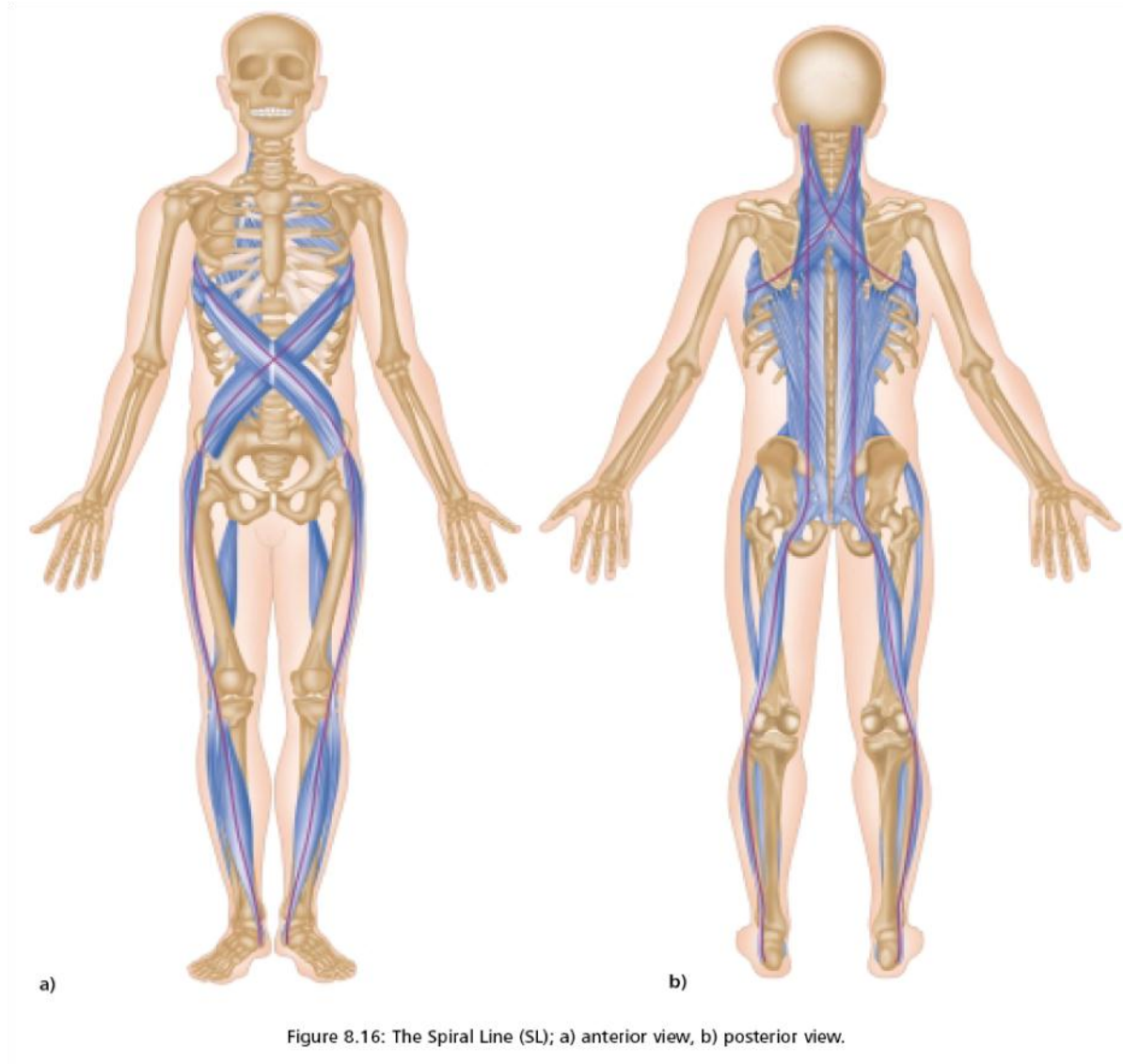


Figure 8.16: The Spiral Line (SL); a) anterior view, b) posterior view.



# Mobility Ideas



# Design a Warm-up for.

- Sailing training session (groups of 5)
- Equipment/ no equipment

To include all the element discussed:

Agility

Game

Fun

Full ROM

Active

Relevant

# Equipment:

- Cones
- Tennis balls
- Rugby ball/ football



# Design a fitness Session:

- 30 minutes max
- Aims of the session?
- What would you include?
- How would you structure it?
- Equipment used?
- Education taught

# What if's

- You cant go outside for the warm-up?
- There has been a postponement and sailors have to get on the ASAP. How do they warm-up.
- Advice you give when a sailor tells you they have knee pain? Age 14 Male?
- Any limitations to physical activity/ warm-ups??



# Develop an on the water routine.

1. What does it need to include?
2. Normally 15 minutes.

# Working with Adults

## Advice:

- Full body exercises (e.g. squats/ lunges)
- Cycling/ rowing
- Core stability
- Education about Neutral spine/ Knee alignment and scapular setting.
- Flexibility/ stretching

**Sport is all about making shapes!!**



**More work on shapes to follow at the next level!! If they get their?**



# Programme Design



# Areas for consideration

$$\text{Performance} = \text{Fitness} - \text{Fatigue}$$

**The level of fatigue effectively determines readiness for training**

Know what they have done that day – sport, academic

Know what they have done that week

Know if they are they physically well

Know if they are injured

Know if they have a competition scheduled

**Know if they are growing – PHV**

**It is stated that 50% of a child's total energy is required for growth during peak height velocity and there will be less energy available for academic and sporting pursuits. Use a training diary to plan training and match schedules**



**Name:**

**Squad:**

**Programme start date:**

**Programme review date:**

	Before School	Morning	Lunch	After school	Evening	AER (hrs)	AN (hrs)	STR (hrs)	STAB (hrs)	Daily Total
<b>MON</b>										
<b>TUES</b>										
<b>WED</b>										
<b>THURS</b>										
<b>FRI</b>										
<b>SAT</b>										
<b>SUN</b>										
<b>WEEKLY TOTAL (hrs)</b>										

Photocopy and review each time your training programme OR other commitments change.

# WEEK PLANNER

NAME:

SIGNATURE

PROGRAMME START DATE:

REVIEW DATE:

<u>SESSION TYPE</u>	<u>CV: ROWING ETC</u>	<u>STRENGTH</u>	<u>CORE STABILITY</u>	<u>STRETCHING</u>	<u>OTHER/ REST/ OWN TRAINING</u>	<u>AGILITY/ CO-ORDINATION</u>	<u>AM &lt; 8.00AM (MINS)</u>	<u>MORNING (MINS)</u>	<u>LUNCH (MINS)</u>	<u>AFTER WORK/ EVENING (MINS)</u>	<u>DAILY TOTAL (HRS)</u>
<b>WARM UP</b>	<b>PROGRESSIVE CARDIOVASCULAR EXERCISE (I.E ROWER, BIKE, CROSS TRAINER) + FUNCTIONAL MOBILITY EXERCISES SPECIFIC TO THE ACTIVITY (I.E SQUAT, LUNGE, HIP CIRCLES, LEG SWINGS ETC)</b>										
<b>MONDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>TUESDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>WEDNESDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>THURSDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>FRIDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>SATURDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>SUNDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>COMMENTS/ TIME</b>											
<b>PHYSIO/ ERI COMMENTS</b>											
<b>WEEKLY TOTAL (HRS)</b>											



# WEEK PLANNER

NAME: SAMMY TAYLOR

SIGNATURE



PROGRAMME START DATE: 24/10/11

REVIEW DATE: 14/11/11

<u>SESSION TYPE</u>	<u>CV: ROWING ETC</u>	<u>STRENGTH (S &amp; C)</u>	<u>CORE STABILITY/</u>	<u>STRETCHING / MOBILITY</u>	<u>OTHER/ REST/ OWN TRAINING</u>	<u>AGILITY</u>	<u>AM &lt; 8.00AM (MINS)</u>	<u>MORNING (MINS)</u>	<u>LUNCH (MINS)</u>	<u>AFTER WORK/ EVENING (MINS)</u>	<u>DAILY TOTAL (HRS)</u>
<b>WARM UP</b>	<b>PROGRESSIVE CARDIOVASCULAR EXERCISE (I.E ROWER, BIKE, CROSS TRAINER) + FUNCTIONAL MOBILITY EXERCISES SPECIFIC TO THE ACTIVITY (I.E SQUAT, LUNGE, HIP CIRCLES, LEG SWINGS ETC). 10 - 15 MINUTES.</b>										
<b>MONDAY</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>15 MINS MOBILITY</b>			<b>45MINS BIKE</b>	<b>1HR</b>
<b>TUESDAY</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>45 MINS S &amp; C</b>		<b>30 MINS SWIM</b>		<b>1HR15</b>
<b>WEDNESDAY</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<b>30 MINS KINETIC CHAIN</b>	<b>30 MINS ROWING</b>	<b>1HR</b>
<b>THURSDAY</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<b>30/ 20 MINS</b>			<b>50MINS</b>
<b>FRIDAY</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>30MINS CORE</b>			<b>1HR BIKE</b>	<b>1HR30</b>
<b>SATURDAY</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					<b>REST DAY</b>
<b>SUNDAY</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<b>45 MINS S &amp; C</b>	<b>20 MINS STRETCH</b>	<b>1HR05</b>
<b>COMMENTS/ TIME</b>		<b>HIGH PRIORITY</b>		<b>SPINAL FOCUS</b>		<b>LOW PRIORITY</b>					
<b>PHYSIO/ ERI COMMENTS</b>	<b>FOCUS ON FULL RANGE OF MOVEMENT IN THE SQUAT. FULL KNEE LIFT WHEN COMPLETING HIP DRIVE START RUN/WALK PROGRAMME IN 1 WEEK.</b>										
<b>ALL SESSIONS SHOULD BE 30 MINUTES UNLESS STATED. INCLUDE A 10-15 MINUTE WARM-UP.</b>										<b>WEEKLY TOTAL (HRS)</b>	<b>6hr40</b>

# How often to train?

- **Balance – daily when doing teeth!**
- **Flexibility- Daily Static and Dynamic**
- **Cardio – 3-4 x per week (30 mins +)**
- **Stability - 3-4 x per week**

**Core work at end of a session – a fatigued core will impact on technical efficiency of all movements.**

- **Strength - only when absolutely competent and well past PHV (72 hour recovery between sessions))**



**"The wear pattern on your running shoes suggests that you watch too much TV."**

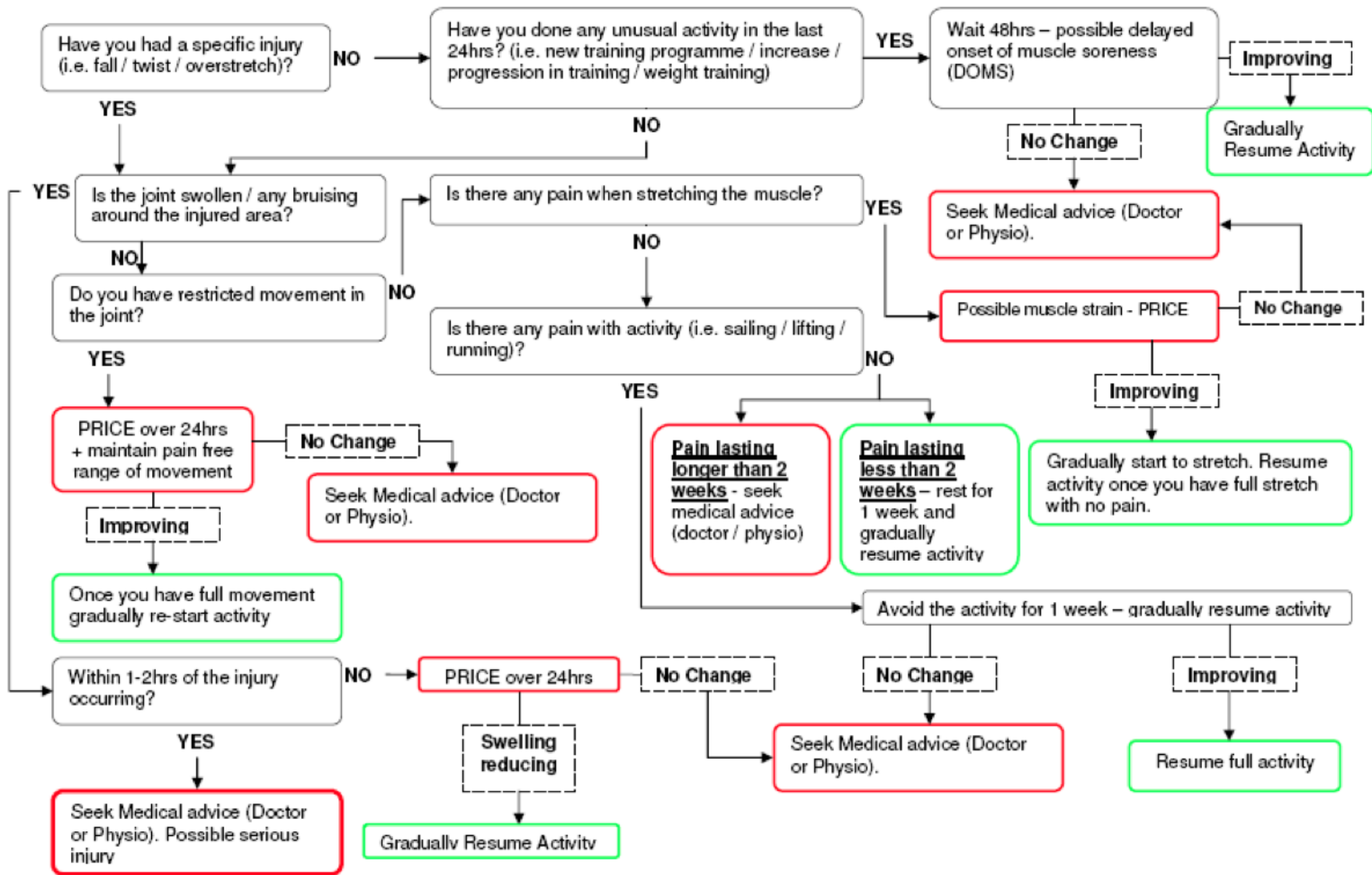
# Factors affecting Injuries

## Physical

- Poor fitness
- Flexibility – too much or too little
- Growth spurt
- Posture – flat feet, high foot arches
- Poor sailing technique/ postures

## External

- Overuse
- Training too progressive
- Inadequate rest
- Competition pressure
- Adult pressure
- Anxiety



# Take Home Messages!

- Injury Prevention/ posture awareness
- Warm-ups/ cools downs are important.  
Make the culture.
- Have a think how you will change your coach approach to educate your athletes about posture awareness and Shapes!!
- Tips – Key words for postures/ techniques when hiking.

# Questions?



# Enjoy Your Christmas!

