



BRITISHROWING

# Recovery

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BRITISH ROWING  
**LOCKDOWN** WEBINARS



IN ASSOCIATION WITH

THE POWER TO KNOW.

# What we will cover

- What is recovery and why is it important
- The 4 Rs of Recovery
- Recovery Strategies
- Summary and key messages



# What is recovery?

mental psychology physical relaxation  
coldwaterimmersion cooldown  
active nutrition passive rest  
repair physiology  
sleep compressiongarments  
hydrationmassage  
hydrotherapy



# What is recovery?

## The Drive Phase



## The Recovery Phase



# What is recovery?

**Recovery**

**Recovery**

**Recovery**

**... again!**



# Why is recovery important?

The balance between training (stress) and recovery is essential to achieve continuous high level performance

TRAINING

RECOVERY



# Why is recovery important?

The balance between training (stress) and recovery is essential to achieve continuous high level performance

TRAINING



RECOVERY

- Increased Fatigue
- Increased Illness
- Increased Injury
- Poor performance



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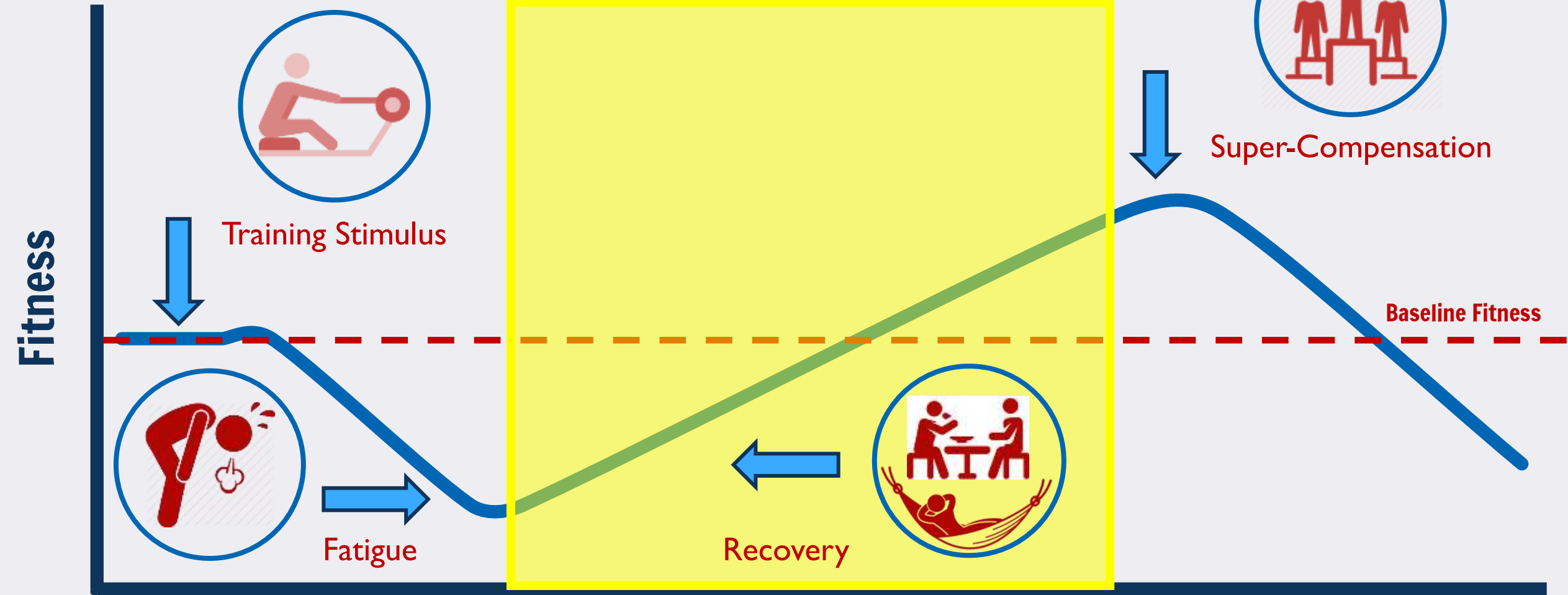
**“More is not always more.  
Whatever type of athlete you are,  
work hard but then recover hard”**



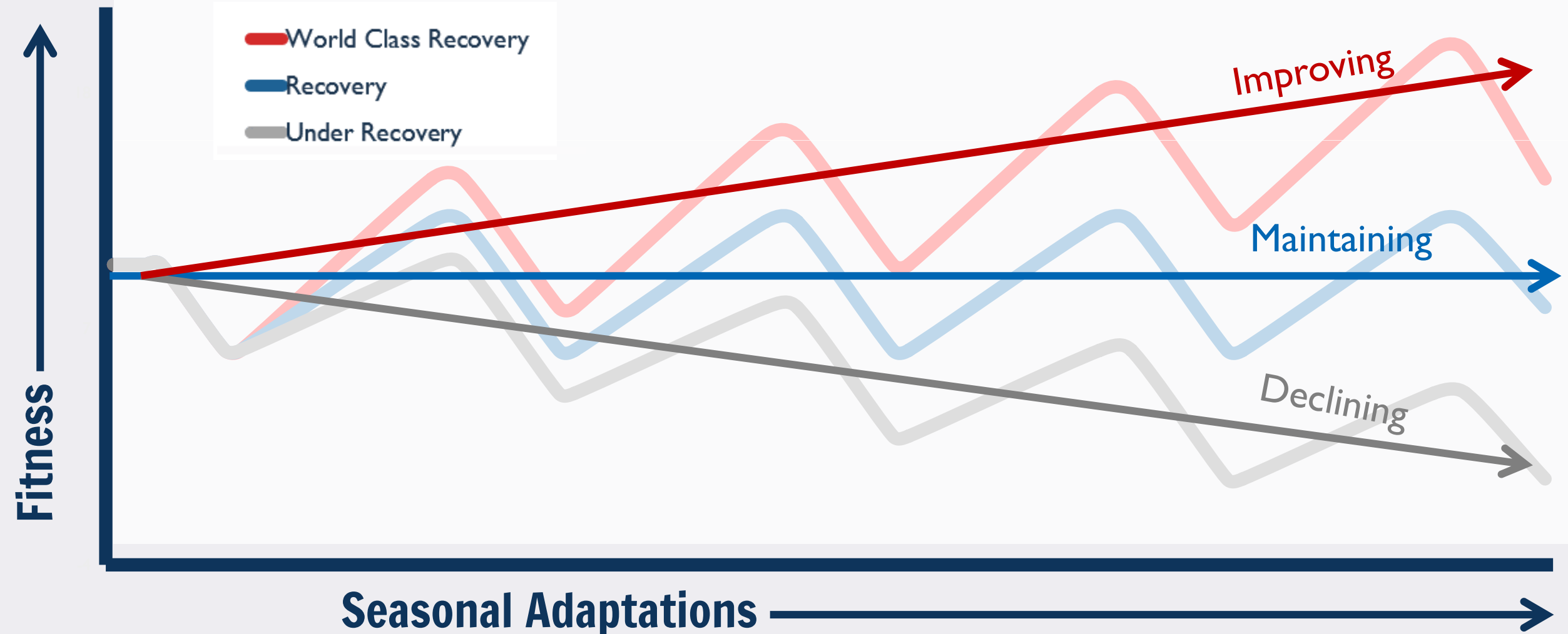
Rowing



# Acute training-recovery cycle

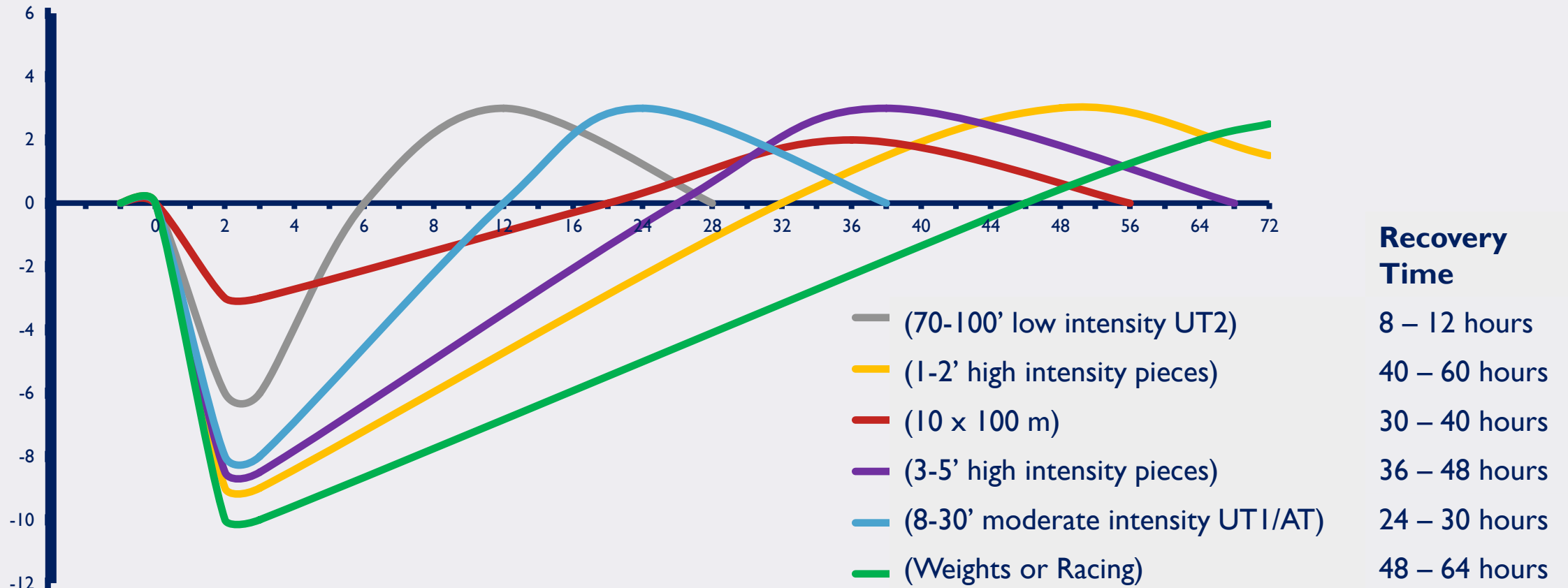


# Chronic training-recovery cycle



# Recovery will depend on

- Training session/type of activity performed



# Recovery will depend on

- Time until next session/race

Relative importance of recovery strategies during different scenarios.

★ = Lower relative importance, ★★ ★★ ★★★★★ = higher relative importance.

	<b>1-2 hours i.e. seat racing</b>	<b>12-24 hours i.e. repechage</b>	<b>24-48 hours i.e. international</b>
<b>Nutrition</b>	★★★★★	★★★★★	★★★
<b>Active Recovery</b>	★★★★★	★★★★★	★★★
<b>Rest</b>	★★	★★★	★★★★★

- Equipment and/or personnel available

# Recovery will depend on

- Environmental conditions e.g. heat
  - Increased overall training load/stress
  - Increased sweat rate
  - Training at higher intensities in the heat uses more carbohydrate as a fuel



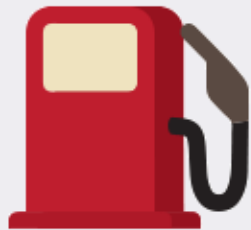
# Poll Question

**Which of the following is most important during recovery?**

- **Nutrition**
- **Hydration**
- **Rest/Sleep**
- **All of the above**

# The Four Rs of Recovery

**R**efuel



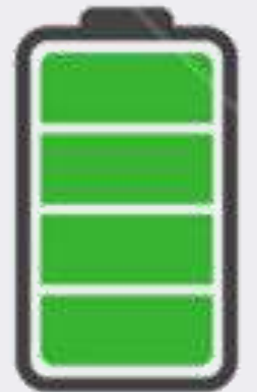
**R**epair



**R**ehydrate



**R**est



# The Four Rs of Recovery - Refuel



## Carbohydrates

- **As soon as you can (within 30 mins)**
  - Carbohydrate rich food or drink
  - 1g carbohydrate per kg of body weight
- **Essential to replenish the glycogen stores (muscle can store carbohydrate as glycogen more efficiently in this time)**
- **As soon as is practical you should consume a balanced meal rich in nutrients**
  - Containing at least 2 g carbohydrate per kg of body weight



# The Four Rs of Recovery - Refuel

## Carbohydrates examples



50 g

15 g



25 g

20-25 g



# The Four Rs of Recovery - **Repair**



## **Protein**

- **As soon as you can in the immediate recovery drink/snack**
  - 0.3g protein per kg of body weight
    - (e.g. for a 100kg athlete = 30g protein, for a 75kg athlete = 23g protein)
- **Essential for muscle recovery and repair**
- **As soon as is practical you should consume a balanced meal rich in nutrients**

# The Four Rs of Recovery - **Repair**



## Protein examples



**17 g**  
**(+6 g carbs)**



**6 g**



**6 g**

**20 g**  
**(+ 28 g carbs)**



# The Four Rs of Recovery - Refuel and Repair



## Meal examples



**Bagel with Scrambled Eggs, Tomatoes & Spinach**

**Porridge with Berries & Yoghurt**

**Chicken with Rice & Veg**

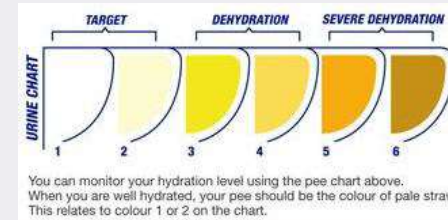
**Salmon with Noodles & Veg**

**Spaghetti Bolognese & Salad**

# The Four Rs of Recovery - **Rehydrate**



- **As soon as you can**
- **Aim to replace 150% of fluid lost during exercise**
  - E.g. if you lost 1 kg you would need to drink 1.5 L
- **May consider including electrolytes (salts) if there have been high sweat rates**
- **Monitoring hydration**
  - Ideally use pre- and post-training weigh-ins to monitor sweat loss
  - Monitor urine colour/concentration



# The Four Rs of Recovery - **Rehydrate**



## Factors influencing hydration

- **Environment (temperature, humidity, wind)**
- **Exercise intensity and duration**
- **Prior fluid consumption**

## Effects of dehydration

- **2% body mass loss can impair performance**
- **Altered perception of effort**
- **Altered muscle protein and glycogen usage**



# The Four Rs of Recovery - **Rehydrate**



## Hydration examples



**32g carbs  
+ electrolytes**



**50 g carbs  
+ 17-20 g protein**



**28 g carbs  
+20 g protein**

# The Four Rs of Recovery - Rest



## Sleep

- Aim is to minimise daytime fatigue and maximise feelings of alertness and concentration
- Between 7-9 hours per night is recommended

## Factors influencing sleep schedules

- Travel
- Academic Studies
- Stress
- Training and competition times

## Daytime Napping

- Can reduce feelings of sleepiness and fatigue & improve daytime performance
- <30 minutes between 1-4pm



# The Four Rs of Recovery - Rest



## Sleep

### DO



Keep a routine



Make your sleeping environment cool (18-22 °C), dark and quiet



Wind down before bed to help you relax

### DONT



Drink caffeine and alcohol



Use your phone for 45 min before bedtime



Clock watch – it reinforces stress and anxiety

# The Four Rs of Recovery - Rest



## Mental/Psychological

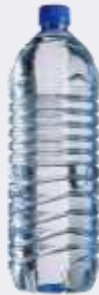
- **Mindfulness activities**
  - Meditation, breathing etc.
  - Apps such as Headspace, Calm etc.
- **Chatting, reading, listening to music**
- **Relaxation techniques**
  - E.g. visualization, breathing
- **Social/personal life**

# Example of 4Rs

75kg athlete - 22.5g protein + 75g carbs



550 ml



95kg Athlete - 28.5g protein + 95g carbs



1.4 pints



# The Four Rs of Recovery

## Refuel



- Carbohydrate
- 1 g per kg body mass

## Repair



- Protein
- 0.3 g per kg body mass

## Rehydrate

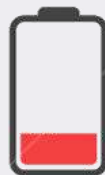


- Replace 150%
- Include electrolytes

## Rest



- Sleep
- Mindfulness
- Social/Personal life



# Other Recovery Strategies

## Active Recovery

- Low intensity exercise
- Accelerates the removal of any by-products/metabolites
- Maintain increased blood flow for nutrient delivery

## Passive Recovery

- E.g. massage, stretching
- Can help to combat neuromuscular stress
- Can ease soreness and minimize muscle tightness



# Other Recovery Strategies

## Compression garments

- Limited evidence supporting its effectiveness
- Lots of anecdotal use
- Increase blood flow and decrease muscle soreness

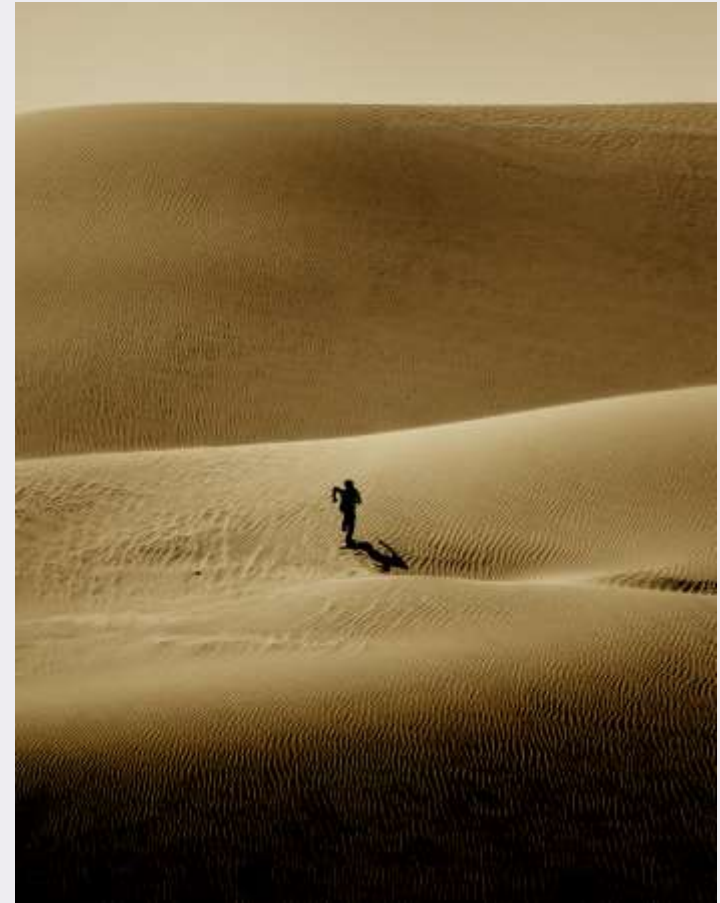
## Cold Water Immersion and Contrast Therapy

- Believed to lessen muscle fatigue and soreness
- Reduce inflammation and pain by reducing blood flow



# How to choose the best recovery strategies for YOU

- Science vs Practicality
- Limited research/evidence around recovery strategies
- Do what works for you – trial and error
- Be realistic



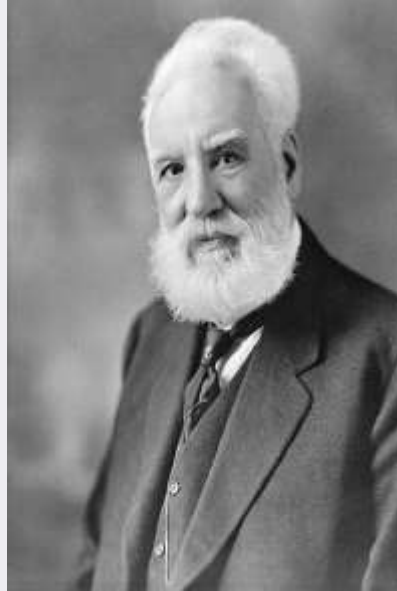
# Poll Question

How often do you plan your recovery?

- Always
- Often
- Sometimes
- Never



## Plan and Prepare



**Before anything else, preparation is the key to success.**

*Alexander Graham Bell*

# Poll Question

## What are the 4Rs of recovery?

- **Refuel, Recover, Rest, Repeat**
- **Refuel, Repair, Rehydrate, Rest**
- **Recover, Recharge, Refuel, Repair**
- **Refuel, Rehydrate, Rest, Refresh**

Sir Chris Hoy - Six time Olympic Champion

**“Recovery was my secret weapon”**





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# Thanks for watching

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