Putting post-exercise recovery strategies into practice

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Introduction

- Associate Director, BPNRC and senior lecturer in sports nutrition
- Nutrition consultant for premiership football club and national sports squads
- PhD in sport and exercise nutrition at Loughborough University
- Post-doc in exercise metabolism appetite regulation at University of Nottingham

Recovery from Exercise

- Glycogen replenishment
- Muscle growth and repair
- Fluid and electrolyte replacement
- Well-being / subjective feelings

Using milk as a recovery drink

- Rehydration
- Muscle glycogen resynthesis?
- Gains in lean mass following resistance exercise
- Exercise-induced muscle damage
- Appetite regulation / Mood

Milk and muscle glycogen resynthesis

- Consuming protein + CHO can improve muscle glycogen resynthesis

- Studies reporting improved endurance capacity or performance following a milk-based recovery drink (Lunn *et al*., 2011; Thomas *et al*., 2009; Karp *et al*., 2006)

- **Lunn *et al.***(2011) ï improvements in kinetic and cellular markers of protein turnover following milk but no differences in muscle glycogen resynthesis (compared to a CHO drink)

Milk and gains in lean muscle mass

- **Hartman *et al.* (2007)** ï greater hypertrophy in **men** consuming milk following resistance training exercise compared to soy protein or CHO (after 12 weeks training)

- **Josse *et al.* (2010)** ï greater muscle mass accretion, strength gains and fat mass loss in **women** consuming milk following resistance training compared to CHO (after 12 weeks training)

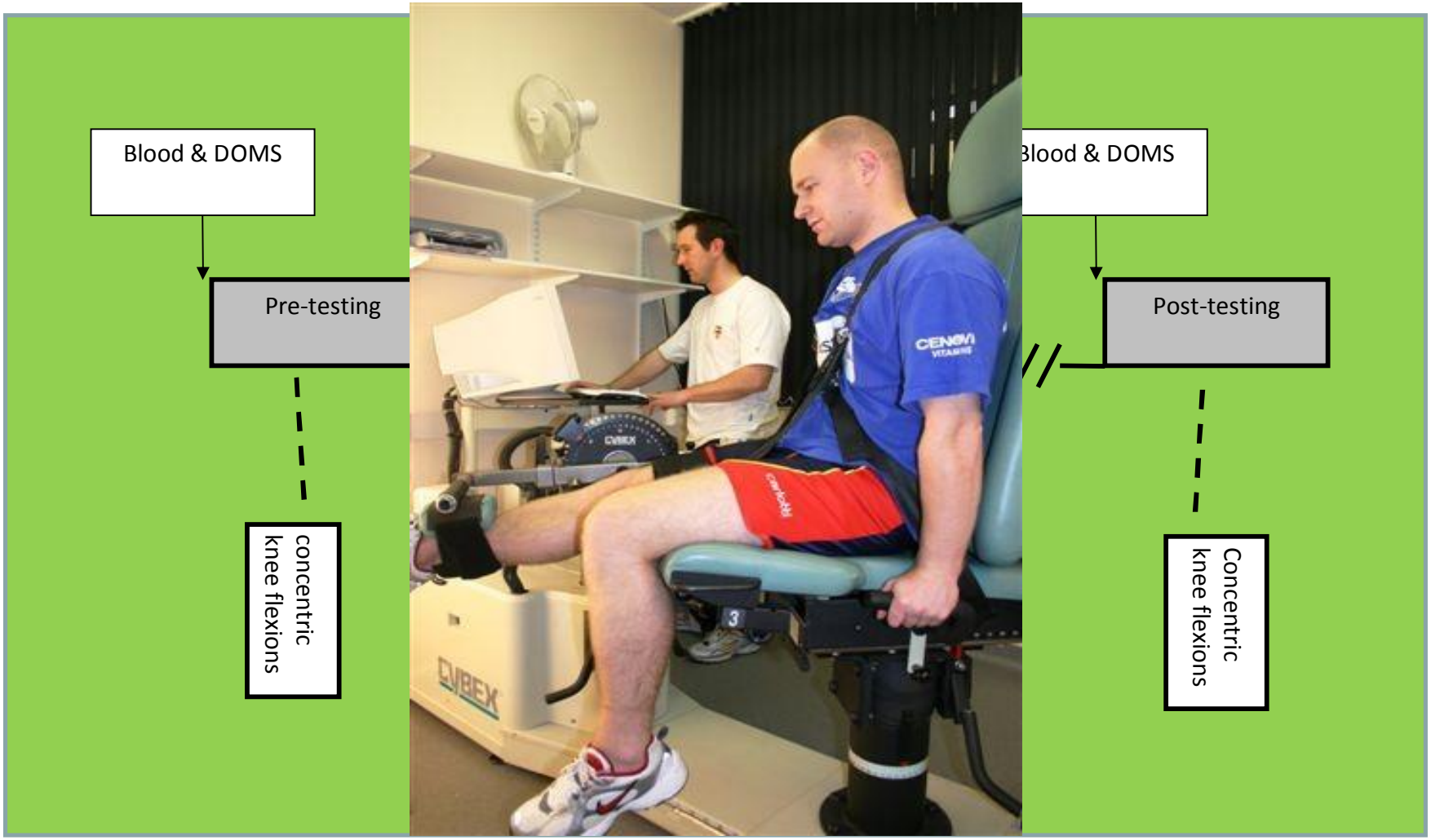
- Greater net amino acid uptake and fractional protein synthesis with milk

Milk and Exercise Induce Muscle Damage

Å Dr Emma Cockburn ï the effect of milk on the attenuation of exercise-induced muscle damage

- Increases in intramuscular enzymes
- Increases in DOMS
- Decrements in performance

Experimental Protocol



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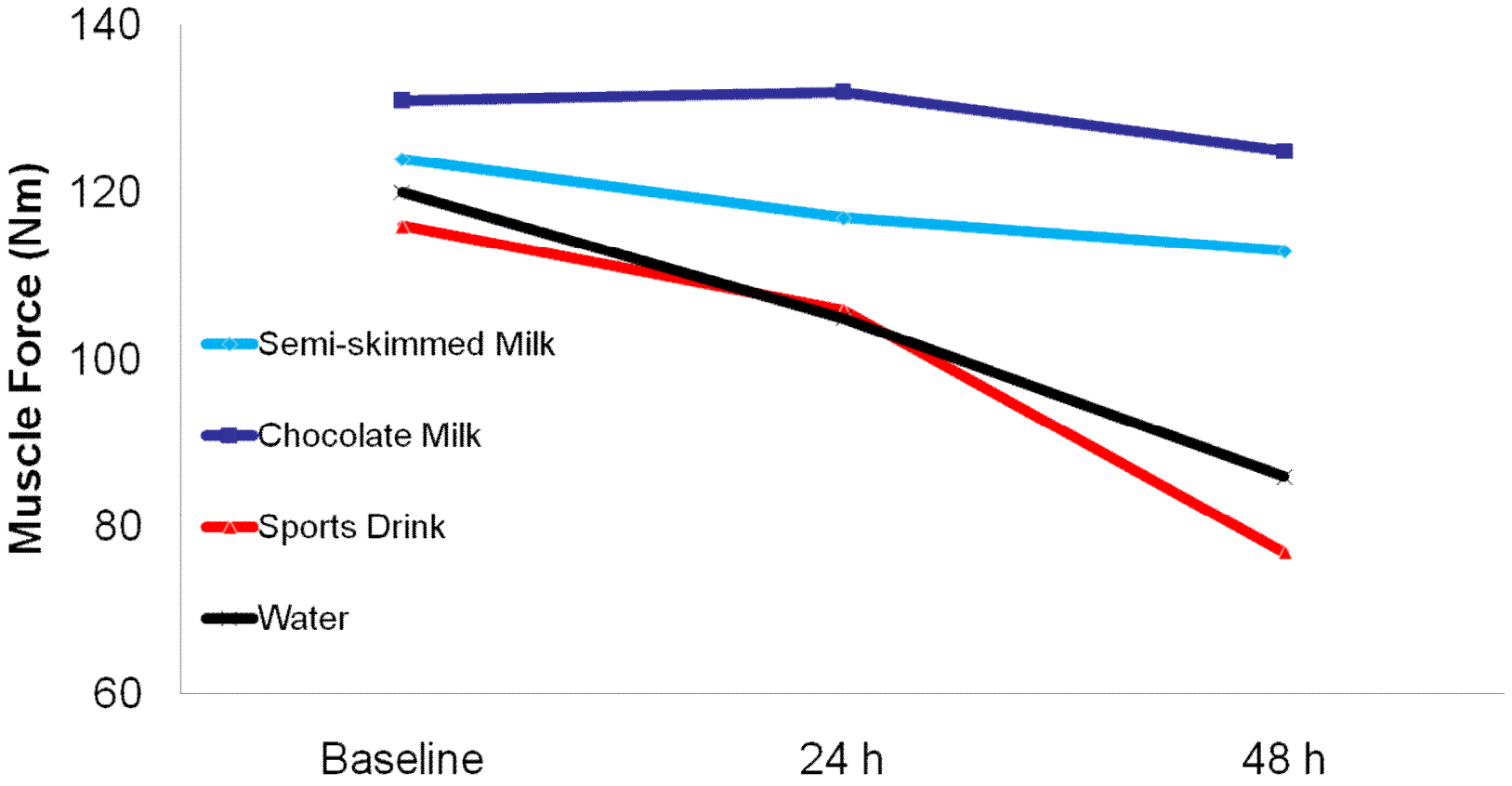
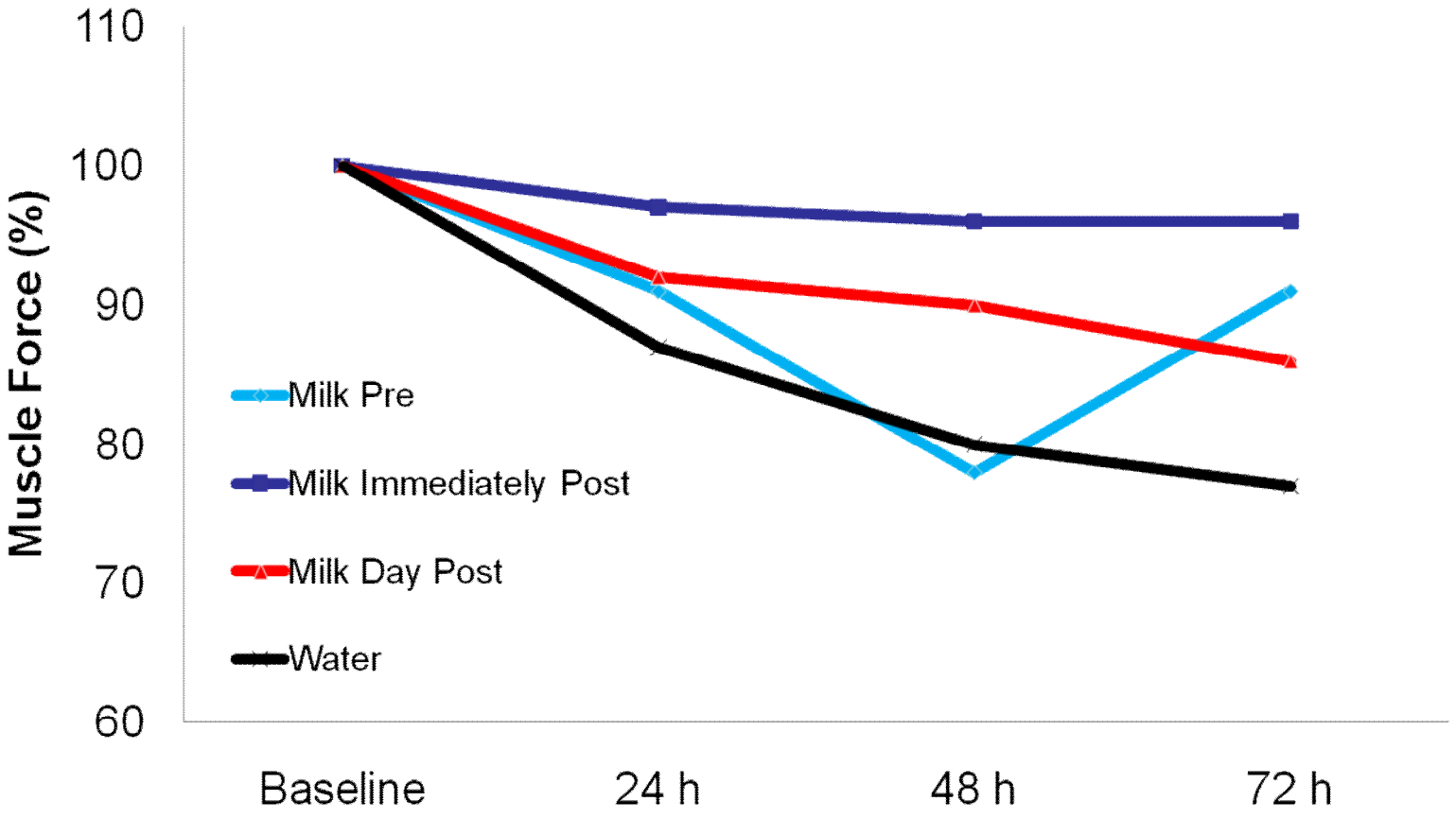
Does milk improve recovery?



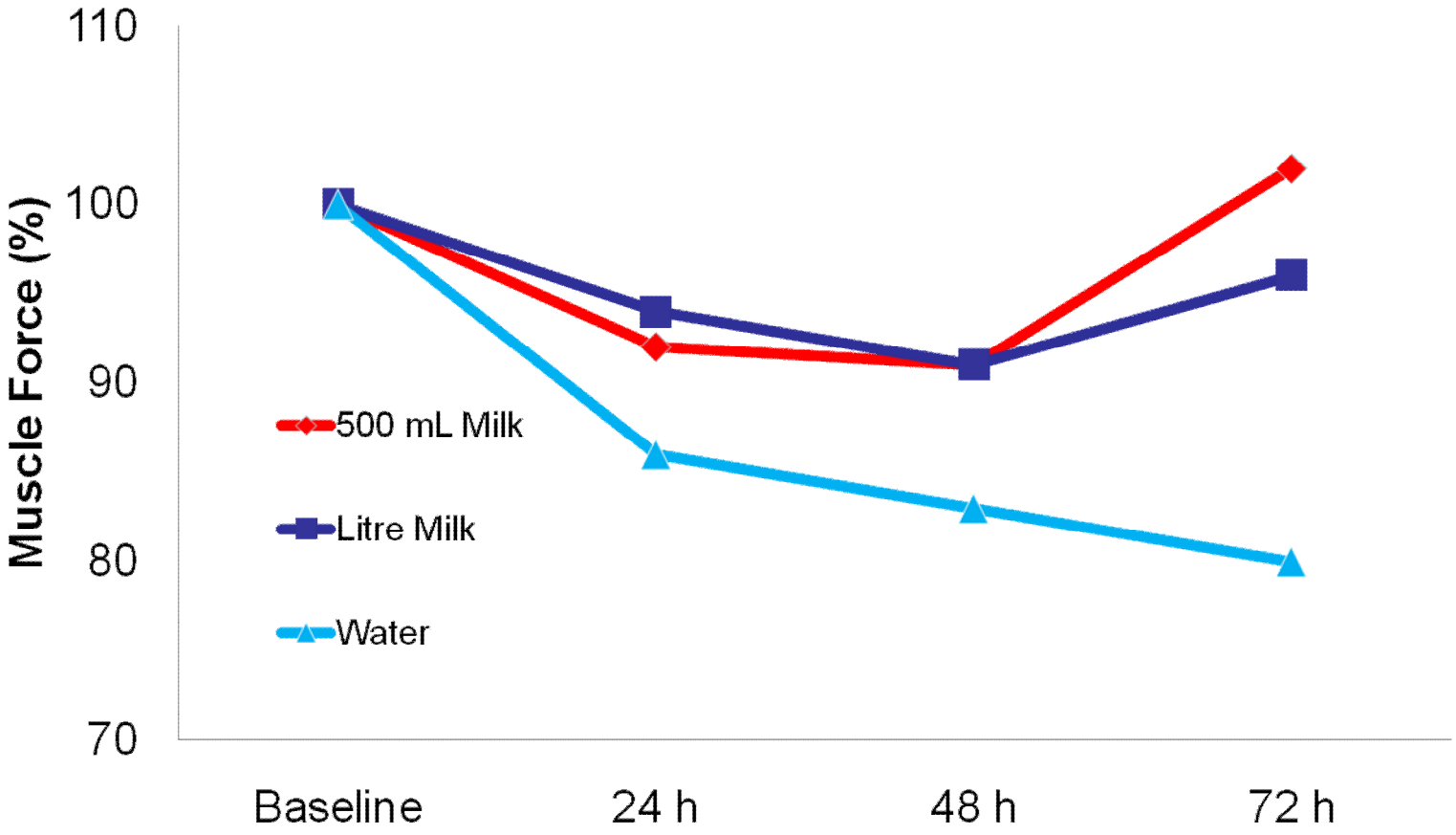
Cockburn et al., 2008, App. Phys. Nut. Met. **33** 775-783

When should athletes drink milk?



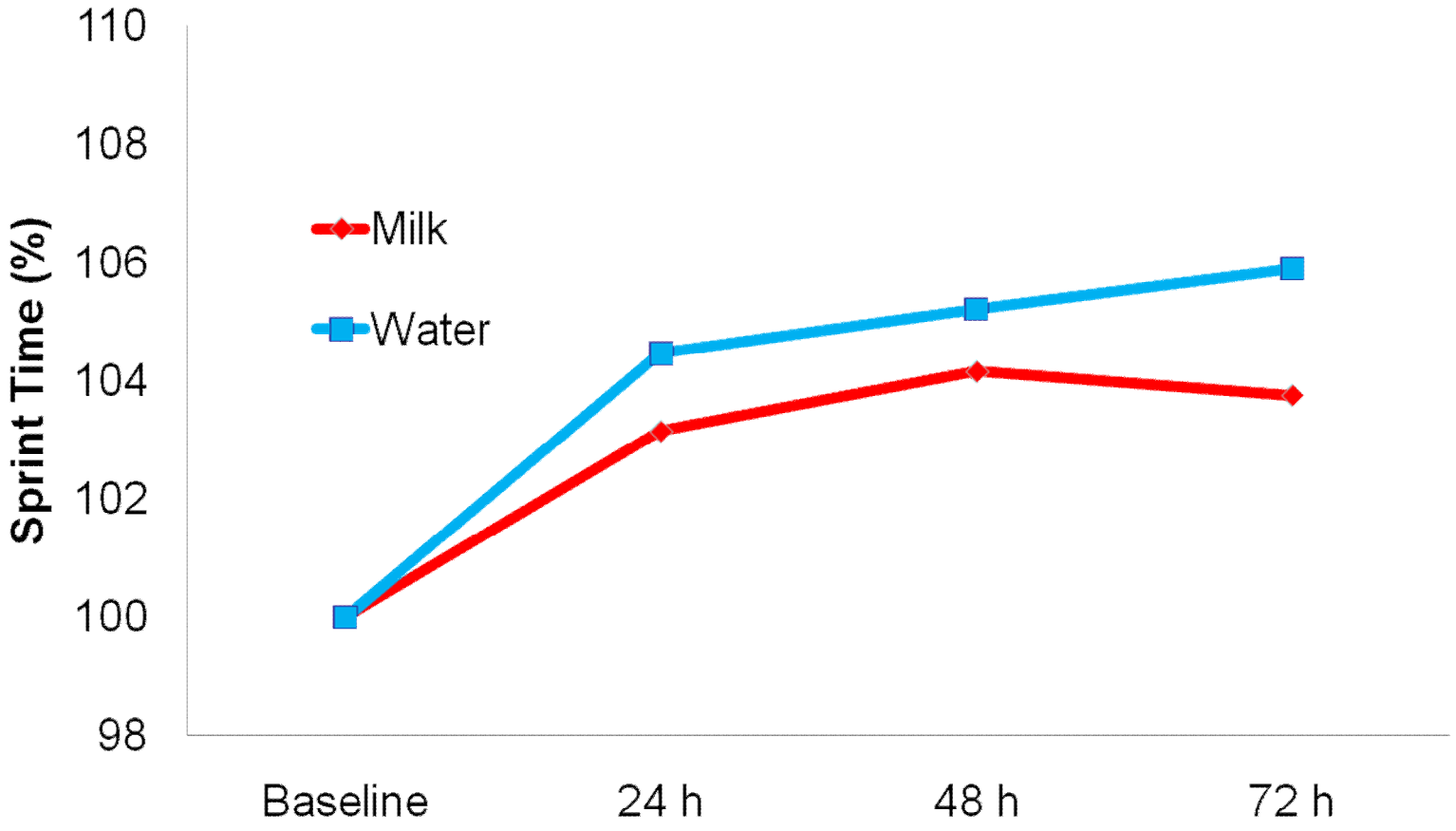
Cockburn et al., 2010, App. Phys. Nut. Met. 35 (3) 270-7

How much milk should athletes drink?



Cockburn et al., 2009, British J Sports Med 43 e211

Impact on team sports



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Putting Theory into Practice

Consultant Sports Nutritionist

- One to one meetings with players/athletes
- Liaising with coaches, managers and sports scientists
- Sourcing quality sports nutrition supplements
- Liaising with chef at the training ground
- Organising food for away games
- Organising food for players at home

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Consultant Sports Nutritionist

- Player education sessions
- Cooking sessions
- Educational sessions with parents and house-parents
- Shopping trips with players

Sports Nutrition Supplements

- Some supplements can be contaminated with steroids or stimulants ï WADA prohibited
- Although contamination may be present at very low concentrations, this may be sufficient to generate a positive drugs test
- Only products that have been tested using appropriate accredited methods should be considered for use by athletes

Informed Sport

- Informed sport is a quality assurance program for sports nutrition products
- Certify that supplements and/or ingredients have been tested for banned substances by HFL laboratories
- HFL certificate should be provided with the supplement
- **http://www.informed-sport.com/**

Putting recovery strategies into practice

- Evidence-based practice

- Considerations:
  - likes and dislikes of players
  - team versus individual approach
  - the training week
  - time constraints
  - facilities and staffing
  - cost implications
  - storage

Putting recovery strategies into practice

- Endurance / Football based sessions

Immediately post-training - players consume a high carbohydrate sports drink. Aim to consume 50g carbohydrate within the first 30 min post-exercise.

60min post-training – players consume a high carbohydrate meal with a lean source of protein**. Food provided at the training ground**

2+ hrs post-training – players recommended to snack if hungry and eat a balanced evening meal

Putting recovery strategies into practice

- Strength/ gym-based sessions

  Players consume a RTD milk-based recovery drink immediately after the session

  330ml bottle contains 168 kcal, 26.5g protein, 14.3g CHO

Key Points

- Encourage a healthy balanced diet
- Timing of recovery nutrition is extremely important
- Be vigilant about supplements
- Critically evaluate relevant research ï more data needed from elite athletes
- Understand the lifestyle of the athlete

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