The Regulation and Development of Sports/Fitness Drinks

IFST Annual Conference 20th April 2012
Nutrition for Olympians: Nutrition for All

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Successfully Innovating in Response to Consumer and Regulatory Needs

- A few facts on The Coca-Cola Company (TCCC)
- What are the regulatory considerations?
- What are the physiological needs that need to be met?
- What is our portfolio of products?
- Conclusions

The World's largest beverage company with the World's most recognised brands

#1	#1	#1	#1	#2	#3
Sparkling Beverages	Juice & Juice Drinks	RTD Coffee	RTD Tea	Sports Drinks	Packaged Water

People: ***300 independent bottling partners***
Resources: ***900 local manufacturing facilities***
Choice: ***3,500 beverage products***

14x 1Billion US$ Brands

What needs to be considered when innovating in the sports sector

- For consumers, taste is the number one priority in most soft drinks, and is still important in this sector
- Functionality is key however
- But not all sports are alike
- Endorsement also carries weight

Another consideration – the regulations that are in play

ALL FOODS, BEVERAGES and SUPPLEMENTS :

- The Nutrition and Health Claims Regulation (across Europe) requires the truthful and factual communication of claims for Nutrition and Health on all forms of product advertising.

- The Regulation lays down specific requirements for nutrition claims (contains vitamins, calcium etc.) and provides a list of health claims (calcium is needed for healthy bones) based on ingredients with specific conditions of use (article 13.1)

- Specific, lengthy and costly process for true proprietary, innovative and unique claims (article 13.5)

PARNUTS (Foods for particular Nutritional Needs) DIRECTIVE

It provides for foods which are intended for particular nutritional needs (baby foods, dietetic foods and sports foods),

With PARNUTS :

- It provides a clear framework for the composition of sports foods and drinks (SCF [Scientific Committee on Food] report).
- Sports foods have historically been exempted from the NHCR.
  - It allows communication to the consumer to be outside the scope of the Nutrition &Health Claims Regulation (NHCR) in order to explain the nutritional need of the particular food.
  - For example : *"During sports it better to consume an energy bar or a sports drink because it contains……"*

SPORTS FOODS and PARNUTS – status

- **In February 2011, it was announced that Sports Foods, amongst others, will be removed from PARNUTS and will fall under normal foods. They will be regulated by the NHCR, like the majority of foods.**

- **It is still not clear how the regulations will pan out…..**

- **Food Drink Europe and other trade bodies are requesting that while vertical legislation may not govern sports foods, horizontal legislation should give sufficient latitude to communicate claims effectively with consumers. e.g. <15% RDA for minerals to be able to make claims.**

What are the key physiological needs?

The 3 principles of sports nutrition

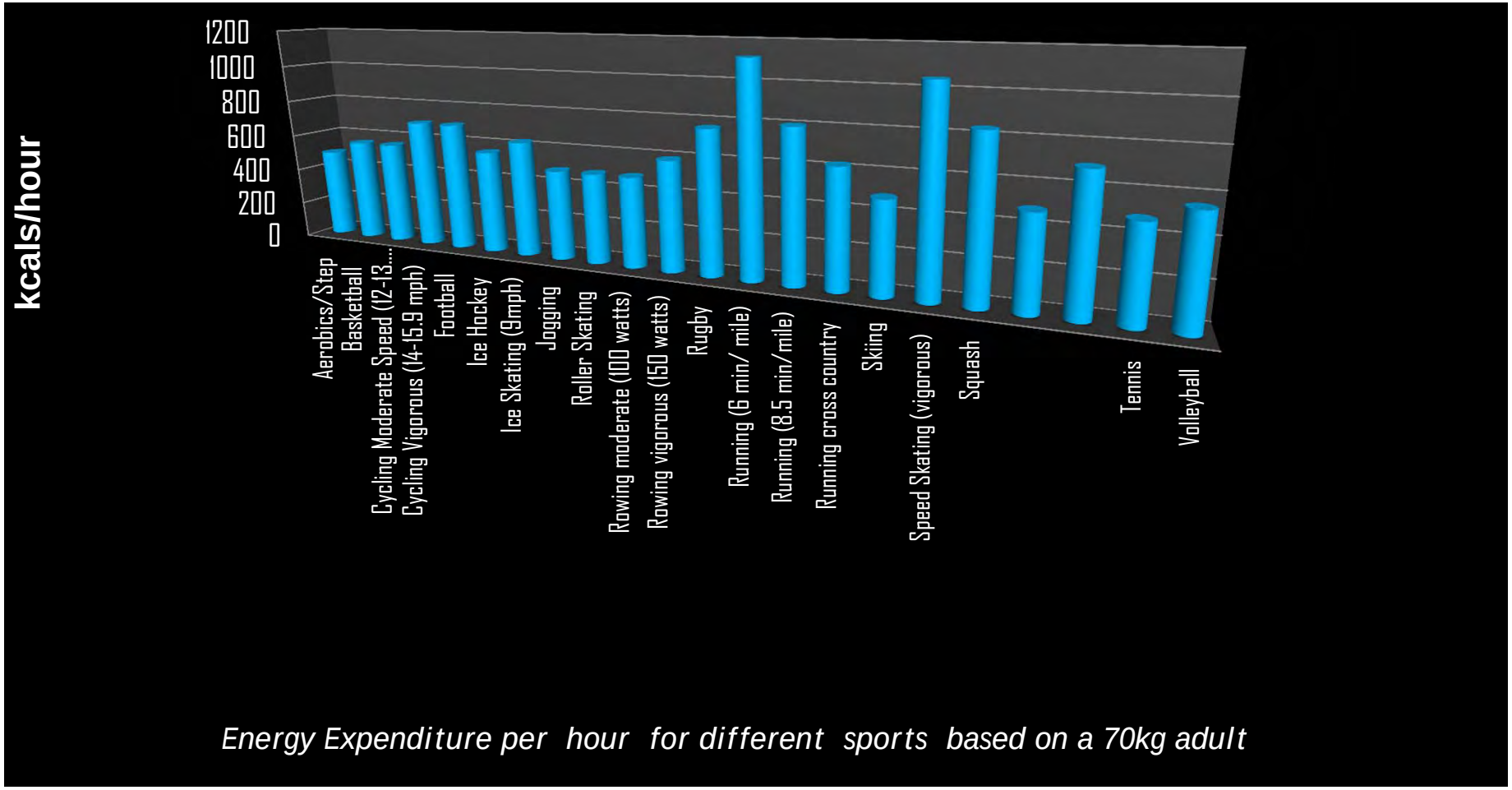
✓Provide **fuel** for your muscles

✓Stay **hydrated**

✓Promote **optimal recovery** after exercise

Apply these principles correctly, and you can consistently maximize the gains from your training and compete at your best

The 3 principles - fuelling



Fuels used in exercise : Carbohydrate and Fat

Forms of Carbohydrates in body:

- ***Glucose,*** ***which*** **circulates in the bloodstream**
- ***Glycogen,*** **which is bundles of glucose stored in the liver and muscles**

Forms of Fat in the body

- ***Free Fatty Acids*** **which is stored in adipose tissue**
- ***Trigycerides*** **which is stored in the muscle**

Amount of fuel used during exercise depends on:

- Type of exercise
- Training intensity
- Duration of work-out
- Frequency of training sessions

Fuelling – Building up the stores

- 60–90 min of endurance training seriously depletes carbohydrate muscle stores

- **Carbohydrate-Loading:** Maximise muscle glycogen stores prior to endurance competition .

Benefits of Fuelling :

- Adequate fuel stores (glycogen) for event
- Recovery between events (heats, competition)
- Enhances performance
- Delaying the onset of fatigue by increasing the availability of muscle towards the latter stages of the race.






Importance of Hydration

Thirst alone is not a good indicator of your hydration needs

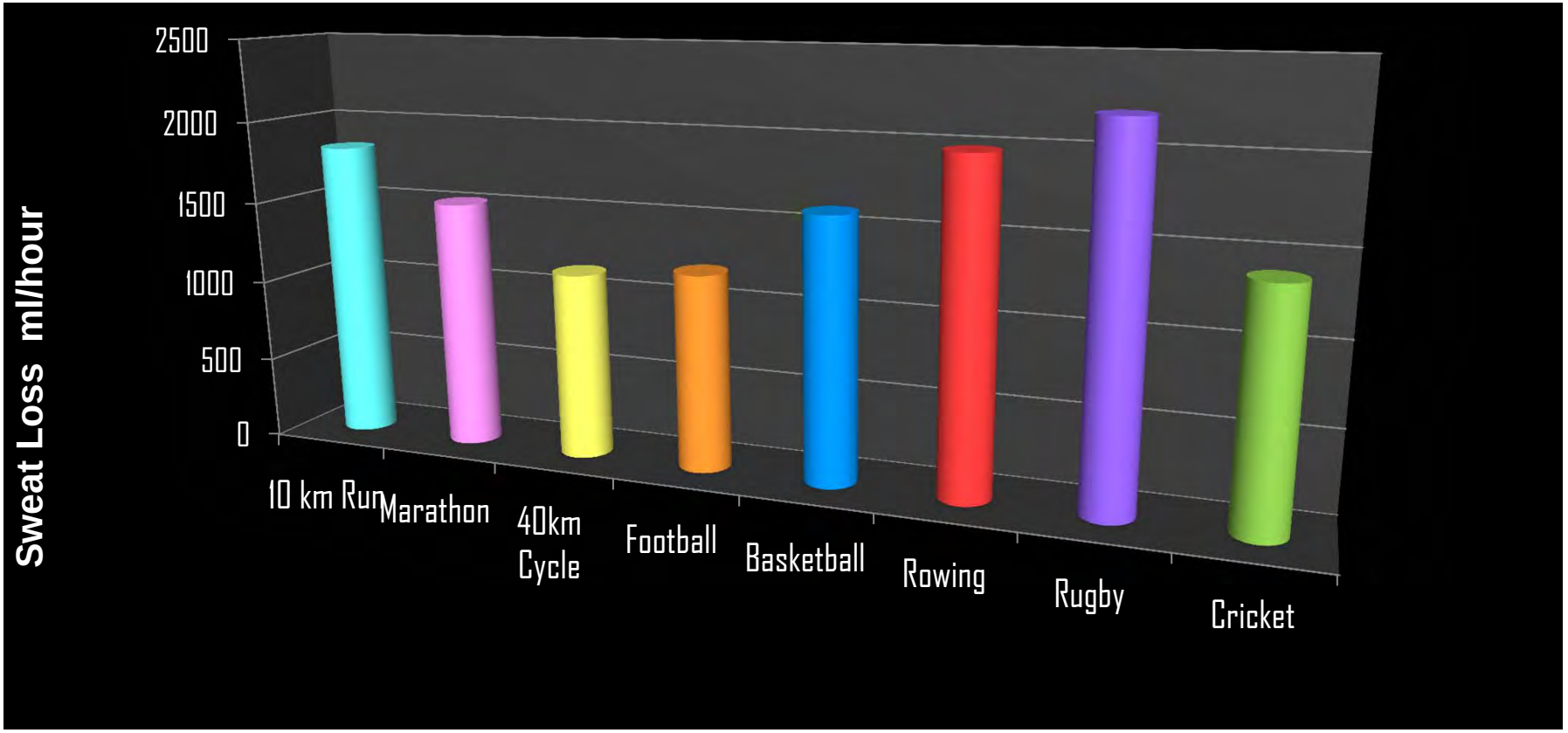
During exercise, you lose fluid and electrolytes as you sweat:

- **The key electrolyte in sweat is sodium**
- **Both fluid and sodium** need to be replaced – to avoid dehydration

Increase of fatigue during exercise as a result of dehydration:

- Inadequate fluid and sodium make your heart work harder and make exercise much more difficult.
- Dehydration also impairs mental performance (concentration, alertness)
- In a **hot environment** the **drop in performance** is worst and as the level of dehydration increases.

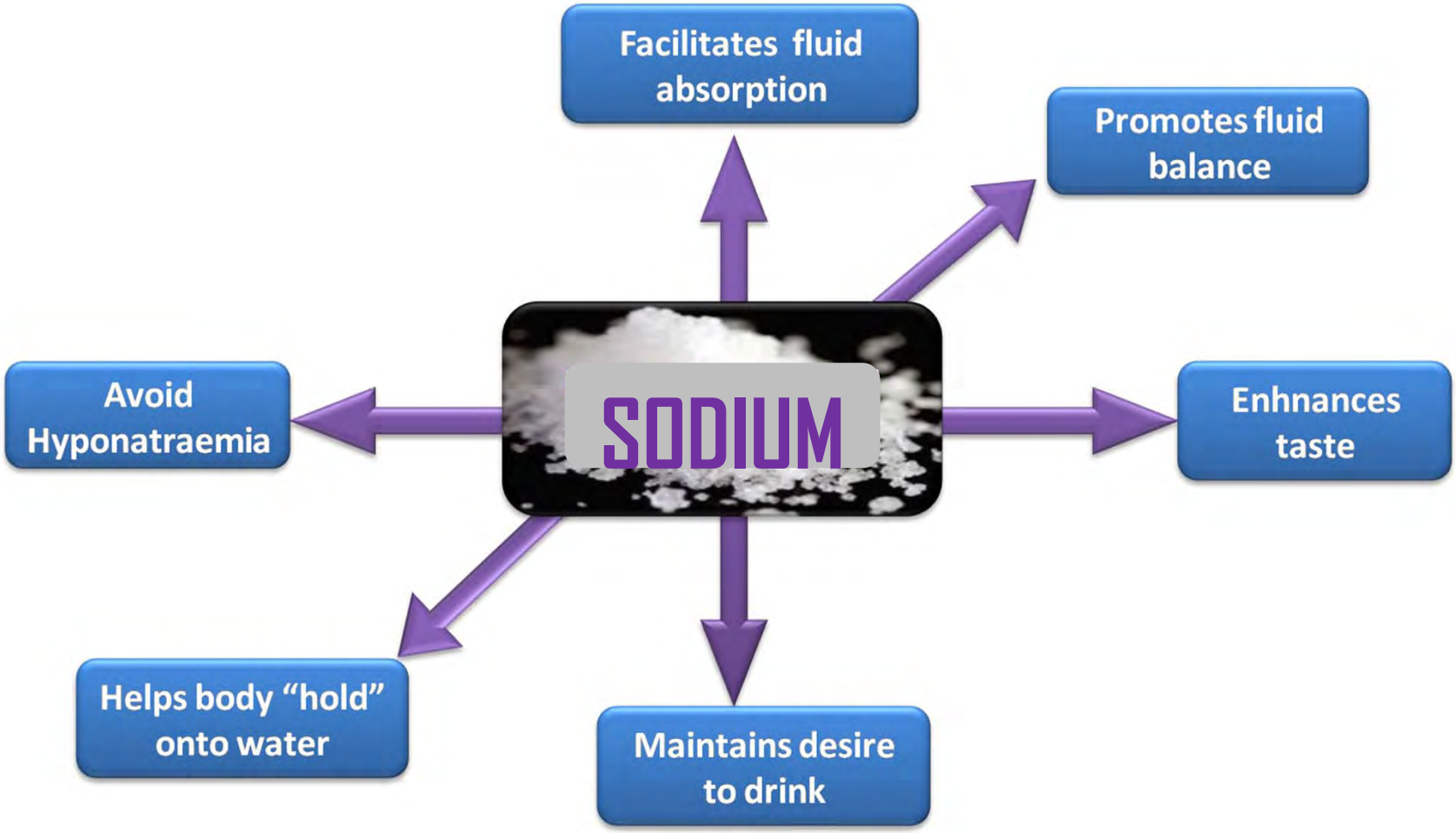
Sweat losses: different sports



Values for temperate environment 19-24°C

Data taken from ***Rehrer and Burke. Aust J Nutr Dietet 1996;53 (Suppl 4):S13–S16.***

The Role of Sodium in sports drinks



The Fluid Formula: What Athletes Should be Drinking

- The ideal beverage may not be plain water

Look for:

- Carbohydrates
- Electrolytes (sodium and potassium)
- Flavour

Water vs. Sports Drinks

- **Water isn't enough**

- **Water is a great thirst quencher, but not ideal as a rehydrator**
  - ✓Water ***doesn't have the performance benefits of a sports drink***
  - ✓Water ***doesn't have flavour***
  - ✓Water ***shuts down thirst before you've replaced the fluid*** your body has lost through sweat
  - ✓Water ***doesn't have enough electrolytes***
  - ✓Water has ***no carbohydrates***

- *Noakes et al. Eur J Appl Physiol 1988*
- *Iuliano et al. Int J Sports Nutr 1998*
- *Below et al. Med Sci Sports Exerc 1995*

Water vs. Sports Drinks
Flavour and Sweetness

- **Research shows drinks that are lightly sweetened and lightly flavored taste better so athletes drink more and avoid dehydration**

- **Studies show adults who had walked in 40 degree heat drank 50% more flavoured water than unflavoured water** (Hubbard RW, Sandick BL, et al. Voluntary dehydration and alliesthesia for water, J Appl Physiol 1984; 57:868-875)

- **"Most humans prefer - and drink more of - beverages that are flavoured and sweetened"** (Greenleaf J Appl Physiolo 1971;30:847-853)

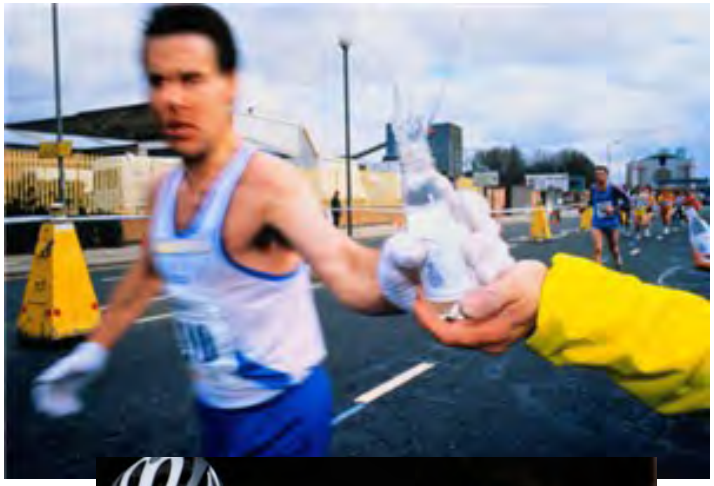
- **A lightly flavoured beverage helps people drink more than plain water** (Passe, D.H., Horn, M., Murray, R. Appetite (2000) 34: 219-229.)

Hydration Needs DURING Exercise

- Fluid intake should match sweat and urine losses in order to prevent dehydration.

- How much fluid an individual needs depends on:
  - individual sweat rate,
  - exercise duration
  - opportunities to drink.

- Isotonic sports drinks is the preferred drinks for endurance based exercise (>60min).



Sports drinks: specially formulated products

Type	Content	Need
Hypotonic	▪Lower concentration than blood ▪Small amount CHO (under 4%, i.e. < 4g/100ml) ▪Electrolytes & Fluid ▪Low calorie	When hydration is the focus
Isotonic	▪Provide a good source of carbohydrate, 4%-8% (4-8g/100ml) carbohydrate ▪Electrolytes and fluid ▪Optimally absorbed	A good 'all rounder' (fuel and hydration)
Hypertonic	▪drinks containing over 8% (> 8g/100ml) carbohydrate ▪Slowly absorbed vs to iso and hypo-tonic	When energy & carbohydrate needs are high and sweat rates are lower.

The BASIS of the Powerade ION4

Composition	Minimum quantities	POWERADE	Maximum quantities
Carbohydrate	At least 75% of the ene metabolizable	3.9 g Carbohydrate	in the form of carbohydrates
Sodium	460 mg/	510 mg/L	1,150 mg/L
Energy	80 kcal/L	200 kcal/L	350 kcal/L
Osmolality	200 mOsm/kg water	275 mOsm/kg water	330 mOsm/kg water

Powerade Zero – a new category - Fitness Drinks

- NATURAL FLAVOURS
- NO ADDED PRESERVATIVES

KEY BENEFITS of ZERO

- The first zero sugar, calorie free fitness drink enhanced with an advanced mineral system including sodium that hydrates the body - without adding back the calories.
- Powerade ZERO is developed with sports scientists for optimum fitness hydration
- Designed for less intense exercise sessions < 60 minutes, where refuelling is not required

Powerade Product Range – Elite (non-commercial)

‘Powerade PRO’ - Powder

Sachet (25g) with 500ml water

- Developed in association with the Olympic Medical Institute (BOA), for Athens Olympics 2004.
- ‘Powerade Pro’delivers our recommended hydration formula for elite athletes.
- Developed specifically for elite athletes performing in hot conditions and those with high sweat rates.

Composition	Powearde PRO
Carbohydrates	4.0g /100ml
Sodium	92mg/100ml (40mM/Litre)
Energy	18 kcal/100ml

BUILDING CREDENTIALS IN HYDRATION WITH PROFESSIONAL ATHLETES SINCE 2008

Powerade Pro Hydration was launch at the Athens Olympics in 2004 – developed in association with Olympic Medical Institute to support elite athletes.

The principal aim: a quality hydration product and to build credibility as a sports brand.

Since then Powerade Pro Hydration has been provided ‘free of charge’ and used successfully with several of our key sporting associations: mainly in the UK but also across many other EUG countries.

Summary

- The needs of elite sports people and recreational athletes cover a great breadth of territory – fuelling, hydration and recovery.
- The regulatory environment has catered well for sports products in the past, but it is changing, and will most likely make the communication of benefits more challenging. Claims are likely to be scrutinised.
- Innovation in the sports portfolio is more than just physiological functionality, but this is key – credibility is required by elite athletes and looked for by recreational athletes.
- Any product is only valuable if the taste and physical attributes are right.

Thanks for your attention

- **Any questions?**