

**ATHLETES  
EAT AND TRAIN  
THEY DON'T  
DIET AND EXERCISE**



FORCEFITNESSPT.NET

# Main sources of energy during 2000 m competition

At the start phase rowers need an enormous amount of energy to accelerate and overcome the inertia of the boat. This period during the first 1-2 minutes is covered at great proportion by anaerobic lactic and alactic energy as it takes time for aerobic system to „switch on“ at maximum capability.

After that the „dominance“ for energy production comes from the aerobic system (Table1).

Table 1. The contribution of different energy systems during a 2000 m race

Energy system	Start – 20 sec	20 – 60 sec	60 sec – finish	Total
Anaerobic alactic	70%	15%	2%	10%
Anaerobic lactic	20%	35%	13%	10-20%
Aerobic	10%	50%	85%	70-80%





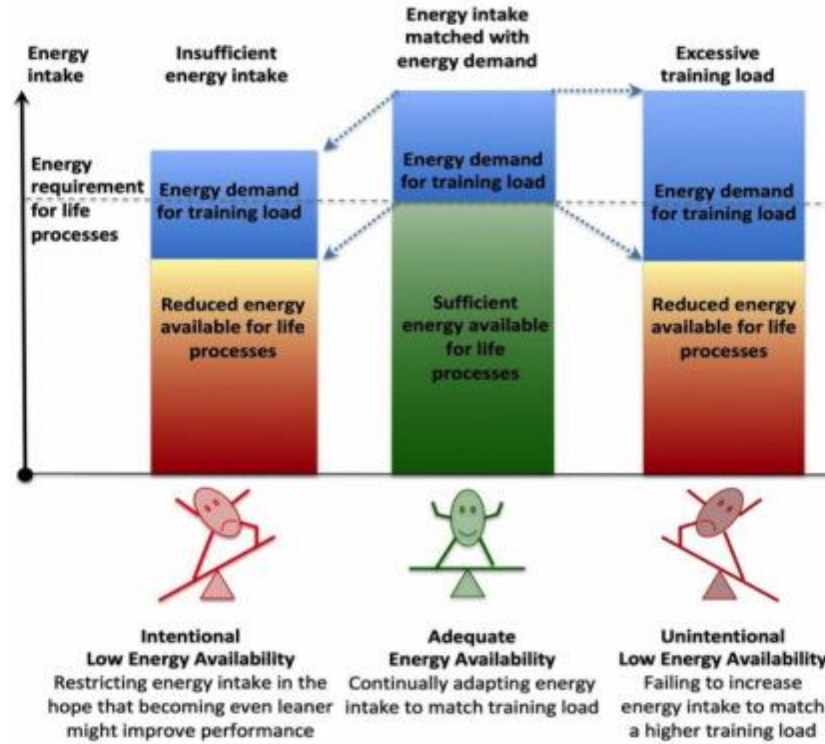
# Poor nutritional planning can cause a negative impact on such things as:

- Lethargy
- Fatigue
- Poor performance capacity
- Poor concentration
- Slow recovery from training and/or racing
- Increased incidence of injury or infection
- Excessive gains or losses in body weight



# Energy availability concept.

## Energy Availability Concept Matching Energy Intake with Energy Demand



**Low Energy Availability forces the body to trigger hormonal responses that adversely affect normal life processes, leading to negative health and performance consequences**

Dr Nicky Keay: [nickykeayfitness.com](http://nickykeayfitness.com)

Nicola Keay, and Gavin Francis Br J Sports Med doi: 10.1136/bjsports-2019-100611





# Relative Energy Deficiency in Sport



\*MENSTRUAL CHANGES ARE HIGHLY VARIABLE AMONGST INDIVIDUALS AND CAN OCCUR AT DIFFERING THRESHOLDS OF ENERGY DEFICIENCY



# GLUCONEOGENESIS



REFUEL: Carbohydrates

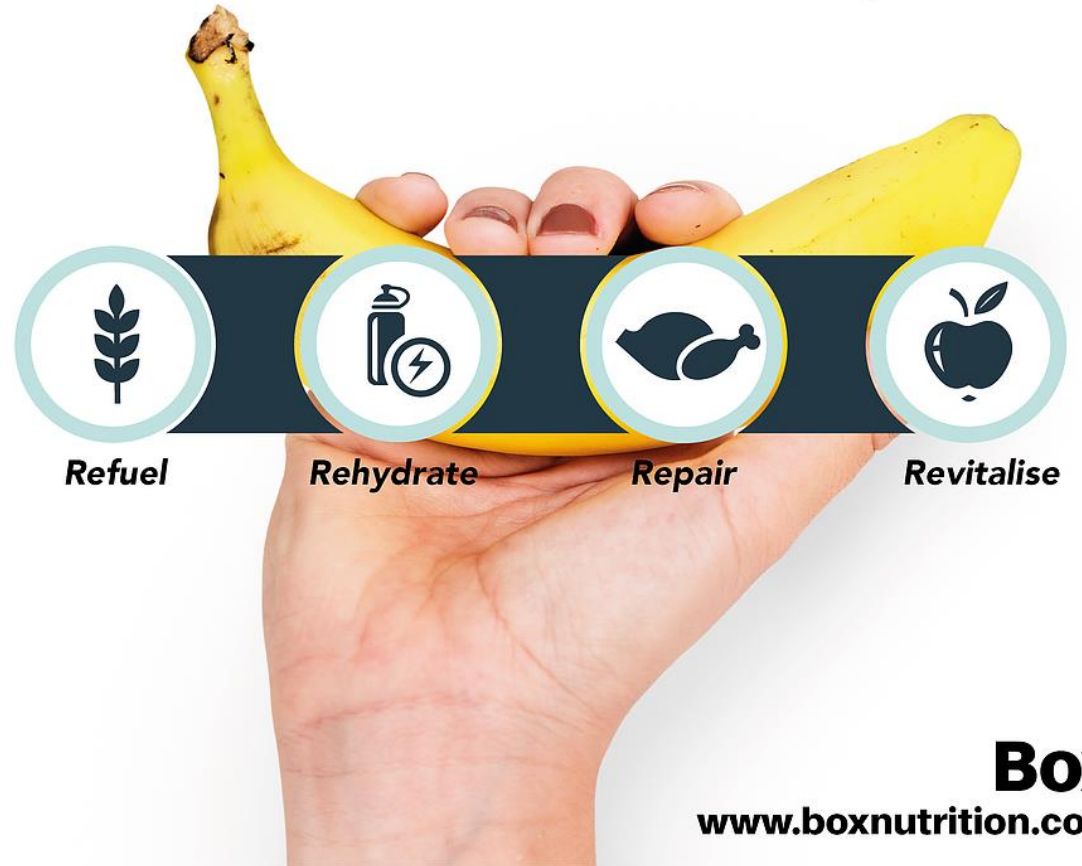
REHYDRATE: Fluid & Electrolytes

REPAIR: Protein

REVITALISE: Rest

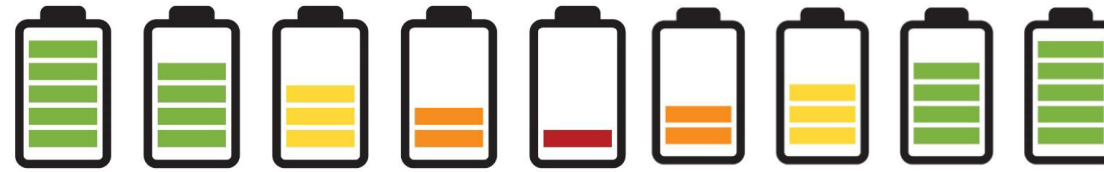
## 4 R's of Recovery

Perform better - Look better - Feel better



**Box.**  
[www.boxnutrition.co.uk](http://www.boxnutrition.co.uk)

# FUEL STORES

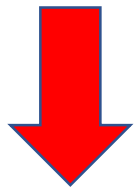


Limited storage capacity

- Less than 2 hours



Higher the exercise intensity



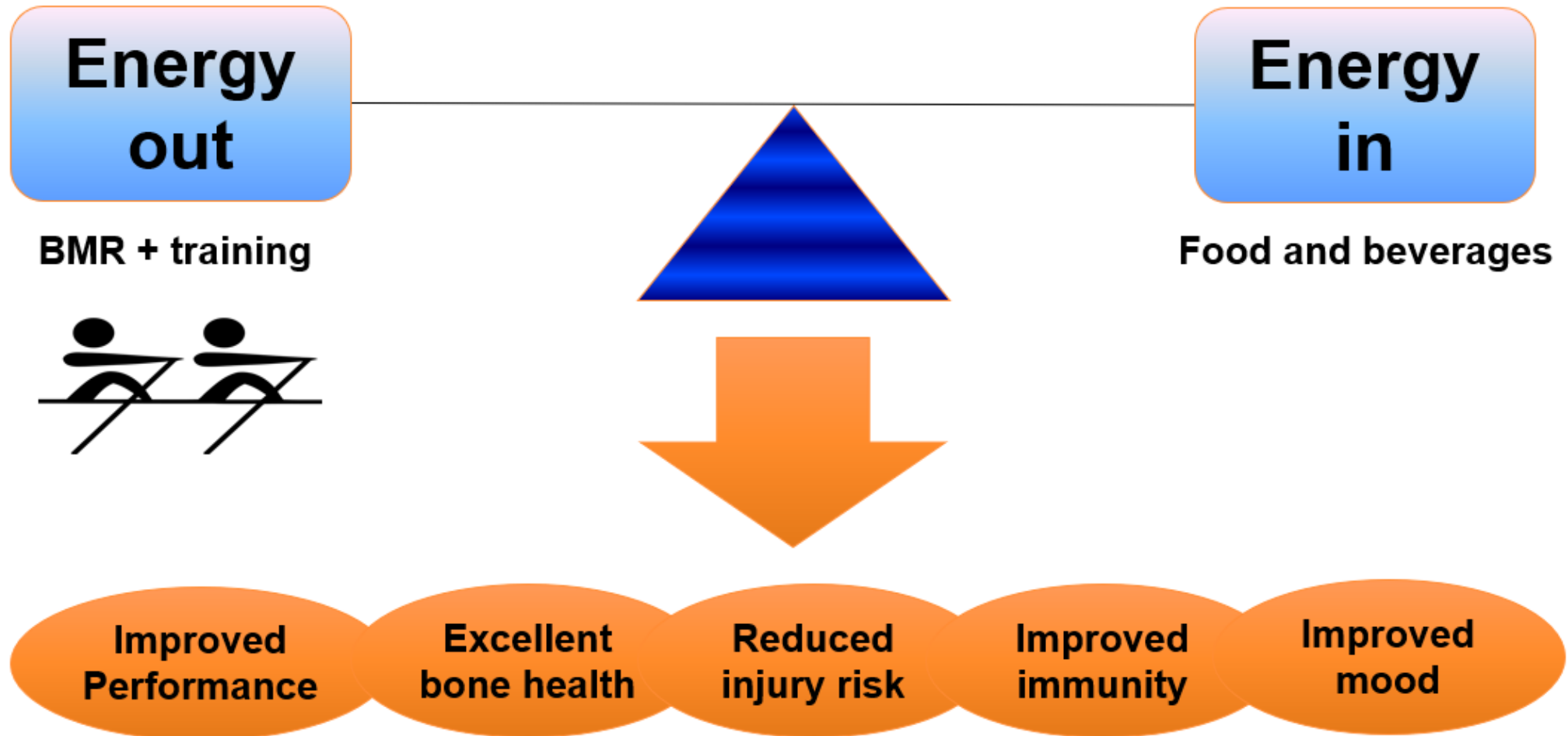
More fuel is required

Want to start training with a full tank of fuel/fully charged battery





# Are you eating enough for the training you are doing?



# Not all food is created equal



Nutrient dense food



Energy dense food







**An increase in training load is not an excuse to increase your intake of fried food, pastries, chocolate, pies.....**

# Regular Eating

- 3 meals a day + 3 snacks (at least)
- Timing of nutrition around training
- Eat every 3 – 4 hours



Before Training	Training	After Training	Mid Morning	Lunch	Mid Afternoon	Training	Dinner	Supper
								



# Protein Intake

- Athletes taking part in low intensity training 0.8g/kg/day
- Endurance training e.g. cycling, distance running 1.2 to 1.4g/kg/day
- Strength or power training e.g. shot put, weight training 1.6 to 1.7g/kg/day
- Adolescent athletes aim for 2g/kg/day

# How much Protein do you need?

Before Training	Training	After Training	Mid Morning	Lunch	Mid Afternoon	Training	Dinner	Supper
1g Carbohydrate per kg	 <p>30 – 60g Carbohydrate per hour</p>	1g Carbohydrate per kg + 20 – 25g Protein		20 – 25g Protein	20 – 25g Protein		20 – 25g Protein	20 – 25g Protein



# Carbohydrate Intake

- Inactive Lifestyle 2 – 3g/kg/day
- Low to moderate intensity activity (3-5 hours per week) 4 – 5g/kg/day
- Moderate to high intensity activity (10 hours per week) 6 – 7g/kg/day
- Moderate to high intensity activity (20 hours per week) 7 – 8g/kg/day
- Endurance training or ultra endurance training 8 – 12g/kg/day

**CAMP**



# Glycemic Index

Low GI (<55), Medium GI (56-69) and High GI (70>)

Grains / Starchs		Vegetables		Fruits		Dairy		Proteins	
Rice Bran	27	Asparagus	15	Grapefruit	25	Low-Fat Yogurt	14	Peanuts	21
Bran Cereal	42	Broccoli	15	Apple	38	Plain Yogurt	14	Beans, Dried	40
Spaghetti	42	Celery	15	Peach	42	Whole Milk	27	Lentils	41
Corn, sweet	54	Cucumber	15	Orange	44	Soy Milk	30	Kidney Beans	41
Wild Rice	57	Lettuce	15	Grape	46	Fat-Free Milk	32	Split Peas	45
Sweet Potatoes	61	Peppers	15	Banana	54	Skim Milk	32	Lima Beans	46
White Rice	64	Spinach	15	Mango	56	Chocolate Milk	35	Chickpeas	47
Cous Cous	65	Tomatoes	15	Pineapple	66	Fruit Yogurt	36	Pinto Beans	55
Whole Wheat Bread	71	Chickpeas	33	Watermelon	72	Ice Cream	61	Black-Eyed Beans	59
Muesli	80	Cooked Carrots	39						
Baked Potatoes	85								
Oatmeal	87								
Taco Shells	97								
White Bread	100								
Bagel, White	103								



# Regatta Nutrition

## High Density

- **Sandwich with grain bread**
  - edam cheese and marmite
  - half sandwich of a thin slice of roast red meat with greens (rocket, spinach etc) + basil pesto [put the pesto between the meat and greens so the bread does not get soggy]
- **Small tub of hummus with 2-3 rice crackers**
  - Place these things in your aid bag between two slicker pads - to keep them cold for as long as possible

## Medium Density

- savoury mini muffins
- yoghurt balls
- boiled new potatoes
- 1 square dark choc + 1 cherry tomatoes

## Light / Fast

- banana
- mango or pineapple slices
- dried apricots, prunes or dates
- rice balls
- rice crackers

- **High density** – 1 hour between races
- **Medium density** – 30/45 min from race
- **Light/Fast** – Less than 30 min from race



# Carbohydrate content of Foods

Food	Portion	Carbohydrate	Food	Portion	Carbohydrate
Pasta	1 cup	40 g	Oats (raw)	½ cup	25 g
Rice	1 cup	40 g	Weetbix	1	10 g
Couscous	1 cup	40 g	Muesli	½ cup	30 - 40 g
Kumara	1 cup	45 g	Milk	1 cup	10 g
Potato	1 medium	20 g	Yoghurt	1 pottle	20 g
Corn	1 cob	20 g	Muffin	1 medium	50 g
Bread	1 slice	15 g	Jam	1 tablespoon	15 g
Tortilla	1 medium	30 g	Honey	1 tablespoon	15 g
Banana	1	25 g	Sports drink	750 ml	50 g
Fruit (fresh)	1 handful	10 g	Gel	1	25 - 30 g
Fruit juice	1 cup	20 g	Raro	½ packet (40 g)	40 g

# Post-Training










The foods below provide 50g of Carbohydrates and at least 10g of Protein:

- 250 – 300ml of liquid meal supplement
- 250 – 300ml of milk-shake or fruit smoothie
- 500ml flavoured low-fat milk
- Sports bars (check label for carbohydrate and protein content)
- 60g (1.5 – 2 cups) breakfast cereal with half cup of milk
- 1 sandwich with meat/chicken filling and 1 large piece of fruit or 300ml sports drink
- 1 cup of fruit salad with 200g carton fruit flavoured yoghurt
- 200g fruit yoghurt and 30 – 35g muesli bar
- 2 crumpets or English muffins with thick spread peanut butter
- 200g (cup or small tin) of baked beans on 2 slices of toast
- 250g (large) baked potato with cottage cheese or grated cheese filling



# How much Protein do you need?



Before Training	Training	After Training	Mid Morning	Lunch	Mid Afternoon	Training	Dinner	Supper
<p>Fruit smoothie: made with 400mls blue milk, ½ cup yoghurt, 1 banana ½ cup berries, 1 Tbsn honey</p>  <p>85 g Carb 20 g Protein</p>	<p>5 Jet Plane lollies+ ½ pack Raro mixed with water</p>  <p>70 g Carb</p>	<p>4 Weetbix+ 1 cup blue milk + ½ cup yoghurt + 1 cup tinned or fresh fruit</p>  <p>90 g Carb 20 g Protein</p>	<p>Small tin of tuna or chop chop chicken + 2 rows rice crackers + piece of fruit</p>  <p>45 g Carb 25 g Protein</p>	<p>2 wholegrain meat and salad Sandwich</p>  <p>75 g Carbs 40 g Protein</p>	<p>150gm pot of yoghurt + muesli bar + piece of fruit</p>  <p>65 g Carb 20 g Protein</p>		<p>150gm steak + 1½ cups salad vegetables + 2 medium potatoes</p>  <p>70 g Carb 45 g Protein</p>	<p>Large glass (400ml) of milk + slice of toast with peanut butter</p>  <p>40 g Carb 20 g Protein</p>



# Sleep

I should have gone to bed earlier last night...



# Sleep

