

NUTRITION

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AIMS

- Provide an overview of nutrition
- Explain why nutrition is important to athletes and sports performance
- Demonstrate how nutrition can be incorporated into training programmes



NUTRITION

- Analysis of food and diet
- A 'balanced diet' provides the body with the right amounts of nutrients



NUTRIENTS

Macronutrients:

- Carbohydrate
- Protein
- Fat



NUTRIENTS

Micronutrients:

- Vitamins
- Minerals

BALANCED DIET

Average Person's Diet:

- Carbohydrate = 44-47%
- Protein = 14-18%
- Fat = 35-38%

BALANCED DIET

Recommended Diet for Athletes:

- Carbohydrate = 55-70%
- Protein = 15%
- Fat = 30% or less



BALANCED DIET

- Difficult to calculate percentage of diet coming from carbohydrate etc.
- Need to ensure enough calories are consumed to cater for all daily activities plus training
- Calculating required calories should be based upon individual's size and specific training performed



GENERAL GUIDELINES FOR CALCULATING NUTRIENT INTAKE

		Body Mass (kg)					
Daily Exercise	Nutrient (g)	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg
<1 hour moderate	Carbohydrate	250- 350	300- 420	350- 490	400- 560	450- 630	500- 700
	Protein	65	78	91	104	117	130
	Fat	<50	<60	<70	<80	<90	<100
1-3 hours intensive	Carbohydrate	350- 500	420- 600	490- 700	560- 800	630- 900	700- 1000
	Protein	75	90	105	120	135	150
	Fat	<50	<60	<70	<80	<90	<100
5-6 hours moderate intensity	Carbohydrate	500- 600	600- 720	700- 840	800- 960	900- 1080	1000- 1200
	Protein	90	108	126	144	162	180
	Fat	<50	<60	<70	<80	<90	<100

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NUTRITION & SPORTS PERFORMANCE

- Good diet = train harder/longer
- Train harder/longer = greater overload on body
- Greater overload = enhanced adaptation
- Enhanced adaptation = fitter athlete





CARBOHYDRATE

- Found in bread, pasta, potatoes, rice, cereals, honey
- Provides energy
- Stored in muscles and liver as glycogen, ready for use during exercise

CARBOHYDRATE & PERFORMANCE

- A high carbohydrate intake in diet enables athletes to train at a higher intensity, for longer duration and enhances recovery
- Athletes should consume 5-12g carbohydrate per kg body mass each day



PROTEIN

- Found in meat, fish, eggs, milk
- Involved in building body tissue
e.g. repairing muscle
- Helps to form antibodies which
are part of our immune system
- Cannot be stored in the body

PROTEIN & PERFORMANCE

- Adequate protein in diet is needed to ensure muscles and body stay healthy
- Athletes should consume 1.3-1.8g protein per kg body mass each day



FAT

- Found in cheese, butter, biscuits, meat, nuts
- Provides energy (low intensity exercise)
- Protects vital organs of the body
- Easily stored in the body

FAT & PERFORMANCE

- A high fat intake in diet should be avoided
- Athletes should consume less than 1g fat per kg body mass each day



FLUID INTAKE

- Fluid intake before, during and after exercise is important
- Dehydration as little as 2% body mass can impair performance
- Water should be consumed regularly to maintain hydration levels





FLUID INTAKE & PERFORMANCE

- Athletes should drink 1 litre per hour in the 2 hours before training
- During training, athletes should sip fluid regularly
- Athletes should drink 1 litre per hour after training to ensure adequate recovery

SPORTS DRINKS

- Most sports drinks contain both carbohydrates and electrolytes
- Sports drinks provide a source of energy and can replace salts lost in sweat
- Sports drinks are best consumed during exercise that is longer than 30 minutes

CONCLUSION

- A 'balanced diet' enables athletes to train hard, recover quickly and enhances adaptation
- A high intake of carbohydrate is particularly important for athletes
- Fluid should be regularly consumed before, during and after training, including sports drinks if required

RECOMMENDED READING

- Coleman, D. A. & Bird, S. R. (2003) Kent Sports Development Unit: Nutrition for Sports People Sports *sheet*. West Malling: KSDU, KCC
- Maughan, R. J., Burke, L. M. & Coyle, E. F. (Eds) (2004) Food, Nutrition & Sports Performance II. The IOC Consensus on Sports Nutrition

RECOMMENDED READING

- McArdle, W. D., Katch, F. I., & Katch, V. L. (1991) Exercise Physiology: Energy, Nutrition & Human Performance (3rd Ed). Philadelphia: Lea & Febiger