

BRITISH
JUDO



1st4sport
Qualifications

1st4sport Level 3 in Coaching Judo

Module 10: Nutrition for the Young Judoka

Module 10: Nutrition

Module Outcomes

- Understand the energy demands of judo
- Identify what a healthy diet for a young judoka consists of
- Know the macro and micronutrient requirements of the young judoka
- Recognise the effects of dehydration
- Awareness of the Female Athlete Triad and REDS-S

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Energy Demands of Judo

- Repeated short bouts of high intensity exercise, primarily anaerobic
- Most of the energy required is taken from ATP/creatine phosphate systems and glycolysis reactions within muscles
- High caloric expenditure in short bursts
- Requires additional calories beyond the amounts needed for growth and basal energy of children and adolescences

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Macronutrients – Carbohydrate

- Carbohydrate fuels the muscle glycogen required for high intensity training/competition
 - Children lack the full development of glycolytic capacity so fat also plays a crucial role for the young athlete
 - Young athletes should consume at least 50% of total daily energy intake as carbohydrate
- Caloric restriction to reduce body weight effects growth and development, increasing risk of injury and eating disorders
 - Young judoka must increase their caloric intake to match expenditure to maintain body mass and encourage the development of lean mass
 - High-carbohydrate diets for young athletes controlling body weight are associated with enhanced performance
 - Adolescent judoka could increase their carbohydrate intake to 65-70% when reducing fat consumption

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Macronutrients – Protein

- Protein provides essential amino acids to support growth, particularly for lean body mass development
 - The body increases the usage of protein stores when glycogen stores are low
- Protein is essential for the muscle development required to excel in weight-class sports
 - The young judoka should consume 15-20% of total daily energy intake as protein (and no less than the general recommendation of 12-15% protein for adult athletes)

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Macronutrients – Fat

- Dietary fat provides energy for growth and development, aiding the absorption of essential fat-soluble vitamins
 - Restricting fat consumption in healthy weight children could impair this
 - For children, 25-30% of daily calories intake should come from fats
 - Unsaturated fats should make up most of this amount, with saturated fats accounting for no more than 10%
- Athletes often reduce fat intake for weight control purposes and decreasing fat consumption may be advisory for the adolescent judoka
 - As long their body fat levels do not drop below minimum recommendations for health and fitness (7% for males and 14% for females)
- Dairy products and red meats should not be eliminated from the diet as they provide essential minerals and vitamins for optimum growth

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Sources of Macronutrients

Macronutrient	Sources
Carbohydrate	Fast Release (High GI): Cereals, white bread, white rice, potatoes, bananas, chocolate, sweets, sports drinks/gels Slow Release (Low GI): Muesli, porridge, pasta, pulses, sweet potato, apricots, strawberries, oranges, apples
Protein	Lean meat, fish, dairy, eggs, Greek yogurt, nuts, seeds, beans, lentils
Fat	Unsaturated Fats (Poly & Monounsaturated): Oily fish, nuts, seeds, olive oil, avocado Saturated & Trans Fats: Fried foods, sunflower oil, fats on meat, poultry skin, butter, cheese

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Micronutrients – Iron, Calcium & Vitamin D

- Iron is important in producing red blood cells
- Calcium helps to build strong bones and teeth, ensures blood clots normally and regulates muscle contractions (including heartbeat)
- Vitamin D regulates the amount of calcium and phosphate in the body
- Young athletes in weight-class sports are often deficient in calcium and iron
 - Causing amenorrhea, reduced bone mineral density and growth rate
- Young judoka may often be deficient in Vitamin D, due to training and competing indoors all year round
 - Causing bone deformities and pain, muscle weakness and impaired immunity

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Sources of Micronutrients

Micronutrient	Sources
Iron	Liver, meat, beans, nuts, dried fruit (dried apricots), wholegrains (brown rice), fortified breakfast cereals, soybean flour, dark-green leafy vegetables (watercress and curly kale).
Calcium	Dairy foods (milk and cheese), green leafy vegetables (broccoli, cabbage and okra), soya beans and drinks with added calcium, tofu, nuts, bread made with fortified flour, fish bones (sardines, pilchards).
Vitamin D	Oily fish, red meat, liver, egg yolks, fortified foods (fat spread and some cereals).

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Hydration – Impact on Performance

- Hydration impacts almost every aspect of sports performance
 - Just 2% dehydration can impair sports performance; aerobic endurance, strength, power, speed, agility, reaction time
 - Reducing to just 1% dehydration for children
- Fluid restriction and ‘sweating-off’ are common strategies used in weight-class sports
 - Increased muscle fatigue and risk of injury
 - Deregulated blood pressure causing the heart to work harder
 - Impaired thermoregulation leading to cramps, heat exhaustion and heat stroke
- It is important for young judoka to avoid dehydration
 - Children experience greater heat stress, than adults - faster metabolic rate and lower sweating capacity

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Hydration – Staying Hydrated

- During exercise sweat rates can average between 0.5-2.5L/hr (outliers 4-6L/Hr)
 - To calculate sweat rate, measure weight before and after training sessions
 - Match sweat losses during training/competition with fluid intakes of around 1.5 times
- Water is generally sufficient to keep hydrated, sports drinks should be used in some situations
 - Sessions volume/intensity is intense
 - Training/competing in high heat/humidity
- Sports drinks and energy drinks are not the same
 - Sport drinks contain carbohydrates, minerals and electrolytes
 - Energy drinks contain stimulants (caffeine and guarana)



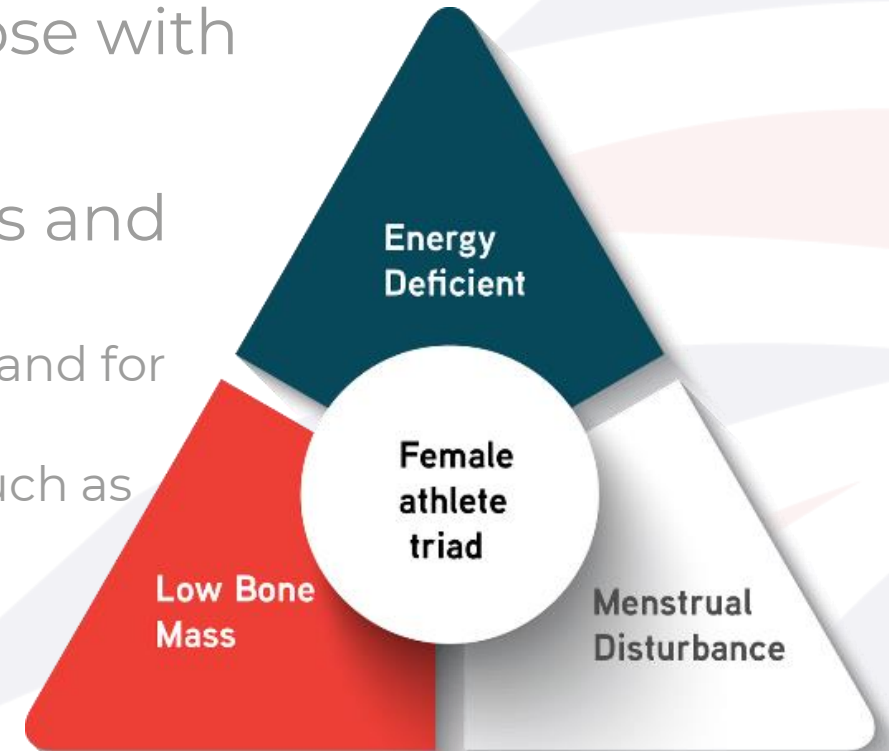
Are you drinking enough?		
Colours 1-3 suggest normal urine		
1		Check the colour of your urine against this colour chart to see if you're drinking enough fluids throughout the day. If your urine matches 1-3, then you're hydrated.
2		
3		
Colours 4-8 suggest you need to rehydrate		
4		If your urine matches 4-8, then you're dehydrated and you need to drink more.
5		
6		If you have blood in your urine (red or dark brown), seek advice from your GP.
7		
8		Please be aware that certain foods, medications and vitamin supplements can change the colour of urine.

Community Infection Prevention and Control, Harrogate and District NHS Foundation Trust
www.infectionpreventioncontrol.co.uk September 2018

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The Female Athlete Triad

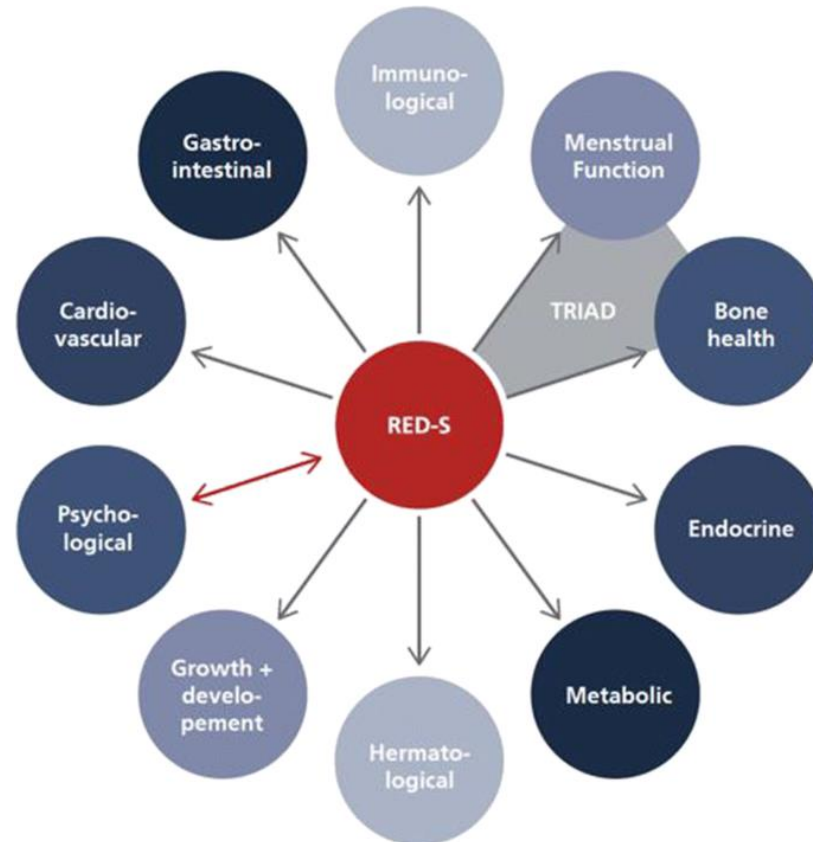
- Interrelationship of menstrual dysfunction, low energy availability and decreased bone mineral density
- Low energy availability doesn't just affect those with low body fat or diagnosed eating disorders
- Caused by an imbalance of training demands and food intake
 - The body is using all its energy for metabolic processes and for training/exercise/competition
 - Not enough energy left to cover other daily demands such as menstruation
 - Amenorrhea (absence of menstruation +3 months) > lower estrogen levels > decreased bone health as bones lose calcium > increased risk of fractures/breaks, bone mass loss, osteoporosis



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Relative Energy Deficiency in Sport (RED-S)

The impairment of physiological function caused by a deficit in a person's energy intake relative to the energy required to maintain optimal health, homeostasis, growth, the activities of daily living, and sport



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