

# BRITISH SWIMMING WORLD CLASS PROGRAMME

## FACT SHEET

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### Competition & Training

#### Nutrition in Rehabilitation & Recovery from Injury

No one wants to get injured, but unfortunately injuries do happen. What you eat when you are injured plays a vital role in your recovery. Whilst the correct nutrition won't cut rehabilitation from weeks to days, if used effectively it can ensure the healing process is optimal and help you make a strong return.

#### Energy Expenditure

An important consideration when you are immobilised due to injury is your total energy intake (i.e. calories consumed). Your total energy expenditure is likely to decrease due to immobility. Depending on the injury, a substantial decrease in energy expenditure is likely, especially if training and even everyday activities are limited. Therefore it is tempting to dramatically reduce your energy intake to avoid weight gain. However, it is important to ensure your decrease in energy intake is not at the expense of your recovery. Adequate carbohydrate, protein, vitamins and minerals are needed to aid muscle healing and prevent muscle protein loss. Similarly, bone collagen synthesis (an important aspect of bone healing) also responds to our diet - adequate calcium intake and vitamin D during healing from fractures are important for optimal bone formation. Therefore it is important to find a balance to make sure you get the calories you need for recovery without gaining weight.

#### Important nutrients for recovery

- **Vitamin C** helps your body form collagen (collagen is a protein needed for strength and flexibility; it repairs tendons and ligaments and strengthens bones). The concentration of vitamin C in your body decreases when your body is under stress.
- **Vitamin A** is needed for cell growth and development, bone development, and to help immune function, so is essential for healing.
- **Zinc, iron and magnesium** are important for the healing process and formation of new cells.
- Quick recovery from soft tissue damage, such as muscle tears, could require increased **protein** intake to support new cell growth and repair. This can be achieved through including more meat, fish, legumes, eggs, milk and nuts in your diet.
- Reducing inflammation during injury needs careful consideration; inflammation is a sign of damage and taking an anti-inflammatory to continue training and competing is not a wise move. **Omega-3** oils are a natural anti-inflammatory so can help during injury.
- **Vitamin D** is recommended for bone strength and maintenance. Most people will get enough vitamin D from some sun exposure, especially in the winter, or eating fish, eggs oils or in some cases a supplement may be taken if advised by your GP.
- **Calcium** will also help with bone strength and maintenance so having 3 servings of low-fat dairy products per day, for example milk, yoghurt and cheese, will help keep calcium intake up.

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Examples of good food sources of nutrients needed to assist in recovery from injury.

Sources of Vitamin C	
<ul style="list-style-type: none"> <li>• Citrus fruits</li> <li>• Green leafy vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Tropical and berry fruits</li> <li>• Tomatoes</li> </ul>
Sources of Vitamin A	
<ul style="list-style-type: none"> <li>• Green, orange and yellow fruits and vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Liver and dairy products</li> </ul>
Sources of Zinc	
<ul style="list-style-type: none"> <li>• Red meat</li> <li>• Fish</li> <li>• Poultry</li> </ul>	<ul style="list-style-type: none"> <li>• Wheatgerm</li> <li>• Fortified cereals</li> </ul>
Sources of Magnesium	
<ul style="list-style-type: none"> <li>• Seeds</li> <li>• Leafy green vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Nuts</li> <li>• Tomatoes</li> <li>• Legumes</li> </ul>
Sources of Iron	
<ul style="list-style-type: none"> <li>• Red meat</li> <li>• Eggs</li> <li>• Salmon</li> </ul>	<ul style="list-style-type: none"> <li>• Whole grains</li> <li>• Leafy green vegetables</li> </ul>
Sources of Omega-3	
<ul style="list-style-type: none"> <li>• Olive oil</li> <li>• Nuts</li> </ul>	<ul style="list-style-type: none"> <li>• Oily fish (tuna, salmon and mackerel)</li> </ul>

