NUTRITION FOR FOOTBALL

Football (or soccer) is a 90-minute game broken into 45-minute halves with a short half-time break. The physiological demands of football are intermittent in nature and involve bursts of high-intensity activity including sprinting, kicking, turning and tackling within an endurance framework. Football utilises both aerobic and anaerobic energy systems. Performance is not only comprised of physical and technical factors, but mental and tactical components as well.

Training

Pre-season training typically begins with general conditioning and strength training. Skill practice, as well as match practice and fitness are worked on as the season approaches. During the season, 2 – 4 training sessions are commonly scheduled between matches. Training sessions are usually 1-2 hours in length and will vary in intensity depending on the goals of the session and the weekly training schedule. At lower levels of competition, players may have extensive off-seasons sometimes leading to body fat levels being considerably higher at the beginning of the following season.

Competition

Football in Australia now sees year-round play, with the (National) A-League being conducted over the summer months and State/club competition continuing as winter sports. For most teams, the competitive season involves a weekly match played during the day on weekends or in the evening mid-week. At the elite level, extensive travel is usually required and some double-fixtures may be scheduled. Domestic or international tournaments of one to several weeks may also be played in addition to the regular season.

Football is a fast game of intensive play with light activity between bursts. Time-motion studies of football have determined that the average national and international player covers about ten kilometers in a match. Goal keepers typically cover about 4 kilometres. While tackling rules are strict, significant body contact occurs with the potential for contact injuries.

Physical Characteristics

Football players must be fast, agile, powerful and possess an adequate level of endurance. Players vary widely in body size, however most players tend to be well-muscled with a low body fat level to maximise speed, agility and endurance. The trend in elite footballers becoming taller and more linear in shape is seen as advantageous for heading (in attack and defense) as well as limiting opposition players' ability to pass the ball.

Common Nutrition Issues

The Training Diet - Week-Round Recovery

Footballers require a high carbohydrate intake on a daily basis to replenish muscle stores after each training session. On average, players will require between 5-8 grams of carbohydrate per kilogram of body weight each day. This means making carbohydrate foods such as bread, breakfast cereal, fruit, pasta, rice, vegetables, low fat milk and yoghurt the focus of meals and snacks. Players who fail to consume sufficient carbohydrate may suffer mid-week slumps and progressive fatigue over the season. Players in heavy training need to start recovery nutrition tactics immediately after each training session. Ideally, players should aim to have 50-100 grams of carbohydrate within 30 minutes of finishing training, along with some protein. Recovery snacks should be combined with fluid to replace any fluid lost during the session.

Nutritious carbohydrate-protein recovery snacks (containing 50g CHO + valuable source of protein and micronutrients)

- 250-300ml liquid meal supplement
- 300g creamed rice
- 250-300ml milk shake or fruit smoothie
- 600ml low fat flavoured milk
- 1-2 sports bars (check labels for carbohydrate and protein content)
- 1 large bowl (2 cups) breakfast cereal with milk
- 1 large or 2 small cereal bars + 200g carton fruit-flavoured yoghurt
- 220g baked beans on 2 slices of toast
- 1 bread roll with cheese/meat filling + large banana
- 300g (bowl) fruit salad with 200g fruit-flavoured yoghurt
- 2 crumpets with thick spread peanut butter + 250ml glass of milk
- 300g (large) baked potato + cottage cheese filling + glass of milk

Bulking Up

Players trying to increase muscle size and strength need a high-energy diet in addition to a quality training program that includes resistance or weights training. The nutritional requirements for increasing muscle bulk and strength not only includes protein to form new muscle tissue, but carbohydrate to fuel the training needed to stimulate muscle growth. Other nutrients such as vitamins and minerals are also beneficial. In short, increased energy from nutrient-rich food and fluids is required. Achieving a high-energy intake should not be seen as an excuse to fill up on energy-dense, nutrient-poor foods (i.e. high fat takeaway or 'junk food') and it may not be as easy as it sounds. Meeting energy requirements for growing, training *and* bulking up requires organisation and commitment. The following tips will help:

- Be organised. Have suitable foods available at all times. Make use of portable foods such as cereal bars, fruit, dried fruit, fruit buns, juice and milk in tetra packs.

- Increase the number of times you eat rather than the size of meals.
- Add extra kilojoules to meals without adding bulk by using foods such as jam, honey, syrup and sugar.
- Avoid *excessive* intake of fibre, and make use of foods with less bulk (white bread, Cornflakes, Rice Bubbles, tinned fruit).
- Drink high-energy fluids such as smoothies, milkshakes and liquid meal supplements such as PowerBar Protein Plus™.
- Include a protein containing food or fluid as part of your pre- and post-resistance training snack.

Body Fat Levels

It is important for football players to be aware of seasonal changes in energy requirements. For year-round weight control, it may be necessary for players to be more conscious of their food intake to match the decrease in training demands during the off-season. Alternatively, players may choose to take up a different activity or continue some fitness training to achieve/maintain a physique that is fit for the start of a new season.

Match Preparation

Ideally, an easily digested high-carbohydrate meal should be eaten between 2-4 hours before a match. Breakfast cereal with fruit, pasta with a tomato-based sauce, bread rolls or sandwiches, baked potatoes with low fat fillings and fruit salad with yoghurt are all good options. Don’t forget to include an adequate amount of fluid with this meal. It is important to experiment and find food and fluid choices that are familiar and enjoyable to you, but don’t leave it until game day to try something new. Many clubs like to organise the pre-game meal as a team activity, especially when they travel to an 'away' game. Eating together can be a good way to raise team morale and get focused on the match, as well as making sure that all players are well-fuelled.

Match Considerations - Fuel and Fluid

Football matches place reasonable demands on both fluid and carbohydrate stores of players. Studies have reported low muscle glycogen levels in players after a match – sometimes with significant depletion occurring by half-time. Players with depleted muscle glycogen stores had a lower average speed and covered less ground than their team-mates in the second half of the match. Studies show that strategies to increase carbohydrate supplies – both eating a high carbohydrate diet in the days before a match and drinking carbohydrate containing fluid such as sports drink during the match, keep players running faster and further in the second half. In another study, high carbohydrate eating/drinking tactics helped the players to make fewer errors.

Sweat losses of 1.0-2.5 litres over a 90-minute game in cool conditions and approximately 4 litres during hot conditions have been reported in some studies. However, the reported fluid intake of players is typically ***less than half*** of the sweat rate. It has been suggested that fluid intake during competition is limited by the rules of the game, which only allow players to drink at half-time when they leave the pitch.

Tips for better drinking during football:

- Drink well during warm up and half time breaks.
- In hot weather especially, be creative in finding ways to grab a drink during halves. Some players leave their bottles around the side of the pitch and dash for a drink whenever there's a stoppage in play.
- Drink sports drinks that encourage better fluid intake because of their taste, as well as supplying extra fuel for the match.
- Use pre-and post-weighing activities to monitor fluid losses over the game and try to keep these under 1 kg.
- Practice good drinking strategies in training sessions.

Post-Match Recovery

A team approach to recovery is the best way to ensure all players refuel and rehydrate immediately after matches. Organise to have suitable drinks and snacks available after the match so that everyone can enjoy the benefits. A post-match spread of sandwiches, soup, fruit and carbohydrate-containing drinks (e.g. low-fat flavoured milk, fruit juice) at the club or a box of supplies in the bus on the way back from 'away' matches can get recovery off to a good start. See the *Recovery Nutrition* fact sheet (under the 'Competition and Training' section) for more information.