

MAINTAINING MUSCLE MASS

Maintaining muscle mass can be a challenge for athletes undertaking a range of different training activities and particularly team sport athletes that require strength, speed, anaerobic and aerobic training all to be completed in the same training cycle. It is not at all uncommon for athletes to undertake strength training and aerobic conditioning work on the same day presenting a considerable challenge to provide the body with sufficient quality nutrients to maintain body weight and muscle mass. A similar concern often faces experienced senior athletes who are currently competing at an ideal or optimal body weight that no longer requires them to strive for ongoing increases in lean body mass. For some athletes, such as boxers, MMA or other sports that involve weight classes, gaining body weight may even be detrimental to their career and as such we would class them as maintainers for the purposes of this manual. Essentially athletes that are required to maintain body weight whilst exercising should ensure nutritional intake is consistent with the energy expended during training. A realistic energy intake recommendation (and this is only an estimate) of approximately 2500 - 4500 kcal/day for males and about 2200-3500 kcal/day for females depending on variables such as the volume and intensity of training and the athletes basal metabolic rate (BMR).

Energy requirements will also be determined by variables such as:

- **Daily occupation.**
- **Environmental conditions / Temperature / Humidity / Altitude.**
- **Digestion & absorption.**
- **Height / Gender / Age.**
- **The BMR is the minimum level of energy required to sustain the body's vital functions in a waking state.**

ENERGY REQUIREMENTS

- Males: $1\text{cal/kg/hr} \times 24\text{hrs} = \text{calories/day}$.
 - Females: $0.9\text{cal/kg/hr} \times 24\text{hrs} = \text{calories/day}$.
 - RMR (resting metabolic rate) – Harris Benedict equation commonly used. Similar to BMR however proportional to body surface area.
 - Men: $66.473 + (13.751 \times \text{body weight}) + (5.0033 \times \text{Height}) - (6.755 \times \text{age})$.
 - Women: $655.0955 + (9.463 \times \text{body weight}) + (1.8496 \times \text{Height}) - (4.6756 \times \text{age})$.
 - Activity factor - 1.3-1.6 sedentary, 2.0-4.0 light, 3.0-5.0 moderate, 5.0-9.0 strenuous, 7.0-13.0 very strenuous.
- The main reasons that some individuals find it difficult to maintain muscle mass are that they:

- Consume insufficient energy intake.
- Consume an inadequate number of meals and snacks during the course of the day.
- Train excessively or expend energy used in other activities such as physical work or other sports.
- Are physically immature and are yet to reach adolescence or are experiencing high growth rate periods of development such as early-late teens where the natural process of musculoskeletal growth is placing a demand on energy stores through an increased metabolic rate.
- Employ inadequate rest and recovery between sessions. As a general rule the following principles should be followed to maintain muscle mass.
- Follow a well-planned resistance training program that is suitable for the individual's age, physical maturity, training history and individual needs.



- Ensuring adequate rest.
- Consuming at least 5 or 6 meals/snacks per day in order to achieve positive energy balance.
- Consuming moderate serves of protein at each meal to facilitate muscle repair and growth – this can be in the form of food and nutritional supplements.
- Careful consumption of sugars to add extra kilojoules and be wary of high GI carbohydrates.
- Consuming a protein-supplement before any weights or strength session. This will assist in attaining positive protein balance.
- Consuming carbohydrate and protein within 90 minutes of exercise. Protein will provide amino acids for growth and repair.
- Monitoring body fat levels to ensure that gains in body weight are due to increases in lean muscle tissue rather than fat.
- Plan food intake for the day to complement training sessions – avoiding large periods without food or a large intake of food at one time.
- Follow a balanced eating plan ensuring adequate energy for training, and meeting at least the minimum requirements for carbohydrate intake in order to maintain glycogen stores.
- Consume the majority of the carbohydrate intake around the time of exercise - avoiding large servings late in the evening.
- Ensure adequate protein intake in most meals and snacks. Protein has a high satiety (fullness) value and also assists in maintaining lean body mass.
- Decrease consumption of saturated fats, excess refined sugars and alcohol, all of which provide the highest kilojoule content for the lowest nutrient value.



DAILY RECOMMENDATIONS TO ACHIEVE RESULTS:

1.

200- 350g of carbohydrates - achieved by eating porridge/muesli at breakfast, moderate portions of bread/potatoes/rice/pasta at lunch and large serves of vegetables/salad at dinner.

2.

200-300g of protein - 600g of meat/fish = 150g protein. Milk and eggs can also be a good source of protein (approximately 30g of quality protein from BSc WPI).

3.

80-100g of fat – from fish, nuts, cheese, red meat.

4.

2-4 litres of water.

For any individual with a goal to maintain their body weight the key is to aim to increase/hold lean body mass (LBM), or muscle mass rather than fat mass through a combination of the right type of training and the correct nutritional intake. Being organized is the key. Muscle tissue comprises of approximately 70% water, 22% protein and about 8% fatty acids & glycogen. The key to maintaining muscle mass is ensuring energy intake is equal to energy expenditure and this means consuming nutritious foods and supplements at frequent times throughout the day.

MAINTAIN CALORIC INTAKE BY:

- Supplementing meals with quality nutritional supplements.
- Eating adequate portions at meal time.
- Eat frequently.
- Eat more Low G.I foods.
- Protein requirement 1.0-1.5g/kg when attempting to maintain lean body mass.
- Consider a reduction in aerobic training.

THE MAIN REASONS THAT SOME INDIVIDUALS FIND IT DIFFICULT TO MAINTAIN MUSCLE MASS ARE THAT THEY:

- Consume insufficient energy intake.
- Consume an inadequate number of meals and snacks during the course of the day.
- Train excessively or expend energy used in other activities such as physical work or other sports.
- Are physically immature and are yet to reach adolescence.
- Use inappropriate training practices.
- Employ inadequate rest and recovery between sessions.
- Over indulge in the wrong food choices.



IMPORTANT STEPS FOR MUSCLE MAINTENANCE



STEP 1 TRAINING

- Effective weights training program, tailored to individual requirements.
- Find the right balance between aerobic, power and strength based training.



STEP 2 INCREASE ENERGY INTAKE (Kilojoules/calorie)

- Don't skip meals.
- Snack on high carbohydrate, low fat food.
- Ensure adequate protein intake with each meal.

MUSCLE MAINTENANCE MEAL PLAN

BREAKFAST

- 1 piece of fruit 2 cups /125gr wholegrain cereal / porridge.
- 2 cups/500 mls reduced-fat milk.
- 2 whole eggs with 2 slices wholegrain or white toast with a scrape of butter or spread.
- BSc WPI / 300ml water / Triandrol

SNACK

- 1 sandwich or a piece fruit and a low-fat yogurt or 1 muffin (low-fat).
- BSc WPI / 300ml water or skim milk.

LUNCH

- 1 serve chicken, fish(tuna) or lean beef.
- 1 serve rice, potato or pasta.
- 1 serve vegetable or salad.
- Or 3 salad sandwiches or rolls with lean meat, chicken /reduced-fat cheese, egg, canned tuna in springwater.

SNACK (1 – 2 Hours before training)

- 1 serve chicken, fish(tuna) or lean beef.
- 1 serve rice, potato or pasta.
- 1 serve vegetable or salad.
- Pre-workout K-OS or WPI/Nitrovol Lean Muscle with 300ml water.

SNACK (after training)

- BSc WPI + 300ml water / 1.5 scoops Essential Amino BCAA Fuel with 300ml water.

DINNER

- Large serving lean meat (155 g) skinless chicken (185 g) or fish (250 g) – grilled or cooked with minimal oil.
- Small serving cooked rice, pasta or potato.
- Medium serving vegetables or tossed green salad (no oil Dressing).

SUPPER

- Body Science WPI in 300ml water / Triandrol.

SUITABLE FOR:



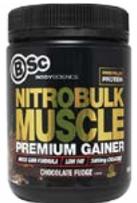
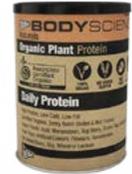
RECOMMENDED PRODUCTS



LEAN MUSCLE GAINER

Timing is everything when it comes to maintaining muscle mass. Low carb fast proteins like whey & plant based protein solutions are available. If you struggle to hold weight products like Nitrovol with smart carbs, creatine & glutamine make life simple. Buy now.

[BUY NOW](#)



NATURAL TESTOSTERONE BUILDER

This natural testosterone booster supports the natural production of testosterone. Build muscle & libido. Buy Now.

[BUY NOW](#)



OFFSET MUSCLE SORENESS

Minimise muscle soreness and maximise muscle repair. [Learn More](#)

[BUY NOW](#)

