

# MANCHESTER UNITED



## NUTRITION PRE-LEARNING INFORMATION

### NUTRITIONAL CONCERNS

#### KEY POINTS:

1. To increase lean muscle tissue.
2. To maximise power output via increased power training.
3. An arbitrary weight needs to be assigned (x kg). Percent body fat should be calculated, and performance monitored to determine weight gain.
4. Careful dietary planning will help your performance. This should be carried out through a different eating philosophy. There are no wonder supplements or quick fix solutions that will help you increase muscle mass.
5. Increased power training will need to be matched by an increased carbohydrate and protein intake.
6. Energy balance and hence body weight follow a simple equation:-  
$$\text{Body Composition} = \text{Energy Input} - \text{Energy output}$$
7. Make changes to your lifestyle in terms of sensible eating habits and leisure activities and you will maximise the benefits. Do the things that keep up your motivation and well being.

## RECOMMENDED DAILY SERVINGS

FOOD GROUP	ATHLETE
MILK Semi-skimmed (1 cup) 90 calories per serving	4-6
MEAT GROUP Cooked lean meat, fish, poultry, low fat cheese, cottage cheese. 55-75 calories per serving	2-3
FRUITS Fresh or juice, 1/2 cup dried fruit, 1/4 cup 60 calories per serving	10-12
VEGETABLES Cooked or juice, 1/ cup raw, 1 cup 25 calories per serving	7
GRAIN GROUP Wholewheat bread, 1 slice cereal, 1/2 cup (dry or cooked) pasta, 1/2 cup (cooked) dried beans, peas, lentils, 1/3 cup (cooked) rice, 1/3 cup (cooked) 80 calories per serving	10-14
FAT Flora, oil, nuts or seeds, salad dressing 45 calories per serving	2-4

## NUTRITION FOR HEALTHY LIVING

Individuals should eat a well-balanced diet made up of a wide variety of foods in sufficient quantity to cover daily energy expenditures. Carbohydrate containing foods should provide about 60% of your daily energy intake, protein about 20% with the remainder being provided by fat.

The trick to maximising performance is to eat a diet that keeps your blood sugar level in balance and to eat less of the wrong fats. The following offers some important practical steps that are based on scientific developments. This means that it is not bullshit.

**1. Keep down your saturated fat intake but this does not mean cut out the essential fats.** In practical terms this means eating fish and flax seeds (Omega-3 fats) while avoiding cream, high fat cheese and red meat.

**2. Combine carbohydrates with protein-rich foods to stop hunger and reduce your tendency to store fat.** This means eating fish with rice, or tofu with vegetables or beans with pasta.

**3. Reduce stimulants such as tea, coffee, cigarettes and alcohol.** Sugar and refined carbohydrates aren't the only substances that disturb blood sugar balance. So too do stimulants and alcohol. These have a profound effect on stress hormones and blood sugar stability, effecting both energy and weight control. This means minimising alcohol and switching to caffeine free alternatives. Well at least try!

**4. Eat three meals a day - especially breakfast - and snack on certain fruit.** One of the most effective ways to stabilise blood sugar and control weight is to eat little and often. The easiest way to do this is to have three meals a day, never miss breakfast, and have a snack after each training session. In addition, Eating burns calories so the little and often approach makes sense. Spicy foods also raise body temperature and hence burn extra calories. Avoid heavy meals and some foods that make you feel sleepy. This encourages bad habits and a couch potato mentality.

**5. During the winter, there is a propensity to store fat in a manner similar to Johnnie Caveman.** You will therefore need to overcome environmental factors and a natural instinctive drive. Long term planning and a positive lifestyle change is the only answer.

**6. Adequate supplies of energy in the muscle are needed to support the demands of football and promote recovery for the next raining session.** Dietary carbohydrate is the primary energy source for a player. You can minimise the effects of fatigue by starting each session with fuel tanks full. It is also recommended that you top-up during the event with sports drinks and take other carbohydrate and protein foods such as smoothies, muffins and fruit to consume as soon as possible after the session.

**7. Immediately following exercise, it is within your control to retool your body for more lean muscle and less fat.** Drink a liquid carbohydrate supplement that contains protein, and you will jump start the muscle building process. This is the 'Critical window of opportunity'.

Factors affecting this window:

- Injury
- Energy stores
- Delaying intake.

## **HI-CARB MEALS & SNACKS**

**Baked potato & baked beans & mushrooms = 30g carbs**

**200 ml Low fat yoghurt + 1 portion dried fruit = 35g carbs**

**Fruit smoothie (200 ml low-fat milk + banana) = 37g carbs**

**Breakfast cereal (1 cup) + 150 ml low-fat milk + tinned peach (1 whole) = 40g carbs**

**Raisin bread (2 slices) + ricotta cheese + jam = 45g carbs**

**Ham & salad roll + fresh fruit = 50g carbs**

**Spaghetti or baked beans (1 cup) + 2 slices toast = 55g carbs**

**Breakfast cereal (2 cups) + 200 ml low-fat milk + tinned fruit (1/2 cup) = 70g carbs**

**Toast (2 slices) with honey, jam or marmalade + fruit juice (1 glass) = 70 g carbs**

**Steamed rice (1.5 cup) + stir-fried vegetables = 85g carbs**

## VITAMINS AND MINERALS

How the body uses fat and carbohydrate depends upon vitamins and minerals. While I do not advocate the excessive use of supplements and pills, the following information can be used in addition to a well balanced solid diet. Indeed, to tune up your metabolism for fat-burning it is essential to consume optimal amounts of vitamins and minerals (N.B. These do not have to be in the pill format). For the body to make insulin, you need zinc and vitamin B6. Insulin's ability to control blood sugar levels is helped by the mineral chromium. To turn glucose into energy, rather than fat, you need B vitamins, magnesium and vitamin C. To burn fat you need all of these, plus the B vitamin biotin. The important vitamins are the B complex, which are essential for making energy.

The minerals iron, calcium, magnesium, chromium and zinc are also vital for making energy. Calcium and magnesium are perhaps the most important because all muscle cells need an adequate supply of these to be able to contract and relax. A shortage of magnesium, so common in people who don't eat much fruit or vegetables, often results in cramps, as muscles are unable to relax. Magnesium is also vital for the body to use carbohydrates.

Zinc, together with vitamin B6, is needed to make the enzymes that digest food. They are also important in producing insulin, which controls blood sugar. A lack of zinc also disturbs appetite control and causes a loss of sense of taste and smell, which can lead to over-consumption of meat, cheese and other strong tasting foods.

Chromium is found in wholefoods and therefore higher in wholewheat flour, bread or pasta than refined products, as well as in beans, nuts and seeds. Asparagus and mushrooms are especially rich in chromium. Since it works with insulin to help stabilise your blood sugar level, appetite and weight, the more uneven your blood sugar level the more chromium you use up. Hence, a chocoholic is most at risk of deficiency. Recent research has shown that chromium supplementation helps to build muscle and burn fat. In addition, chromium helps to lower cholesterol and stabilise blood sugar levels. Whether or not you can achieve an optimal intake of chromium from diet alone is debatable. When purchasing minerals, avoid metallic as these have a low absorption rate and will pass straight through your gut.

Although not a vitamin Hydroxycitric acid (HCA) found in the tamarind plant, could help you lose weight. HCA has no apparent toxicity or safety concerns. It works by inhibiting the enzyme that converts sugar into fat. In addition, HCA reduces the synthesis of fat and cholesterol.

## **FAT BURNING SUPPLEMENTS:**

### **Vitamins**

Vitamin A  
Vitamin B1 (thiamine)  
Vitamin B2 (riboflavin)  
Vitamin B3 (niacin)  
Vitamin B5 (Panthothenate)  
Vitamin B6 (Pyridoxine)  
Vitamin B12 (cobalamine)  
Folic Acid  
Biotin  
Vitamin C  
Vitamin D  
Vitamin E (d-alpha tocopherol)

### **Minerals**

Calcium  
Magnesium  
Iron  
Zinc  
Manganese

**Chromium Picolinate**

### **Other**

**HCA (Hydroxycitric acid)**

**The following nutrients which may be of particular relevance to you.**

1. Vitamin C acts as a free radical scavenger and can be found in most fruits and vegetables including citrus fruits, strawberries, green peppers and tomatoes.
2. Vitamin E acts to prevent oxygen free radical interaction with acids. It can be found in sunflower oil, wholegrain breakfast cereals and bread, dark green vegetables, eggs, cheese and margarine.
3. Vitamin A (Beta-carotene) is present in yellow and orange fruit (carrots, apricots etc).
4. Vitamin B12 (riboflavin).
5. Copper is present in seafood, nuts, seeds and pulses.
6. Zinc
7. Manganese is present in foods such as wholegrain cereals and bread.
8. Selenium can be found in fish, liver, cheese, eggs and bread.
9. The amino acids cysteine and glutathione are also antioxidants which help protect against pollution, alcohol and infections. These can be found in white meat, fish (especially tuna) and beans and seeds.

## IDEAL FOODS FOR A PROGRAMME

1. Fruit and Vegetables are high in nutrients. They have high fibre and high potassium, but contain very little waste and very few calories. Raw foods contain higher levels of dietary fibre.

### FRUIT LIST

Apples	Apricots	Bilberries	Blackberries	Blackcurrants
Blueberries	Cherries	Cranberries	Currants	Damsons
Dates	Figs	Gooseberries	Grapefruit	Grapes
Greenages	Guavas	Kiwi fruit	Lemons	Limes
Loganberries	Lychees	Mangoes	Melons	Mulberries
Nectarines	Passion fruit	Paw-Paw	Peaches	Pears
Pineapple	Plums	Pomegranates	Prunes	Quinces
Raisins	Raspberries	Redcurrants	Rhubarb	Strawberries
Sultanas				

### VEGETABLE LIST

Artichokes	Asparagus	Aubergines	Beans (French, runner, broad, butter)	
Brussels	Bean sprouts	Beetroot	Broccoli	
Chicory	Cabbage	Carrots	Cauliflower	Celery
Leeks	Courgettes	Cucumber	Fennel	Kohlrabi
Parsnips	Lettuce	Marrow	Okra	Onions
Pumpkin	Peas	Peppers	Plantain	Potatoes
Squashes	Radishes	Swede	Sweetcorn	Sweet potatoes
	Turnips	Watercress	Yams	

### NUTS

Although high in calories, nuts are high in nutrients and an excellent source of essential fats., and are rich of potassium and fibre. They should be eaten raw, unsalted and fresh.

### NUT LIST

Almonds	Brazils	Cashews	Chestnuts	Hazelnuts
Macademia	Pine nuts	Pistachio		

## **PULSES, SEEDS, HERBS AND SPICES**

Pulses and seeds are high in nutrients and once they are freshly sprouted the nutrient content becomes even higher.

### **PULSES, SEEDS, HERBS AND SPICES LIST**

Alfalfa	Basil	Chick peas	Chillies	Coriander	Dill
Fennel	Ginger	Lemon grass	Marjoram	Parsley	Pepper
Pumpkin seed	Rosemary	Sage	Sesame seed	Sunflower seed	
Tarragon	Thyme				

## **NON DAIRY**

This process is different from that used in cow's milk production. This means that goat's and sheep's products are much easier to digest than cow's.

### **NON DAIRY LIST**

Goat's cheese	Sheep's cheese	Goat's milk	Sheep's milk
Goat's yoghurt	Sheep's yoghurt	Soya milk	Rice milk

## **FISH**

All fish contain essential proteins, but oily fish such as herrings, mackerel and salmon has the added benefit of the oils. Fresh fish is always best.

### **FISH LIST**

Cod	Crab	Haddock	Halibut	Herring	Lemon sole	Lobster
Mackerel	Monkfish	Pilchards	Plaice	Prawns	Salmon	Salmon
Sardines	Scampi	Shrimp	Skate	Trout	Tuna	Tuna

## **MISCELLANEOUS**

These are essential as they add nutrients, variety and flavour.

Balsamic vinegar	Cider vinegar	Grapeseed oil	Mustard
Olive oil	Olives Quorn	Rice cakes	Seaweed
Sesame oil	Tofu	Walnut oil	

## **FOOD TO AVOID**

Avocados	Caffeine	Peanuts	High Sugar drinks/food
Cream sauces	Full fat products.		

THE FOLLOWING IS AN EXAMPLE OF A HIGH-CARBOHYDRATE LOW FAT MENU.

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**BREAKFAST**

4 Weetabix  
200ml semi-skimmed milk  
2 slices wholemeal toast and jam  
Dried apricot

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**LUNCH**

4 slices turkey breast  
4 slices of bread  
2 tsp. mustard, lettuce, tomato  
2 fresh plums  
2 oatmeal cookies (low fat)  
Black grapes

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**DINNER**

Chicken stir fry:  
3 ounces chicken  
1 cup diced vegetables  
2 tsp. olive oil  
2 cups brown rice  
1 cup orange and grapefruit sections  
1 cup yoghurt (low fat)  
Water

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**SNACK x 2/3 per day**

3 cups popcorn  
1 apple  
1 banana

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**Approximately 500g carbs per day.**

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## **Glycaemic Index**

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A variety of carbohydrates are available and selecting the most appropriate for the situation requires careful consideration. Carbohydrates are classified in terms of their Glycaemic Index. The Glycaemic index of a food is determined by the rate at which carbohydrate is available for the muscle and liver. Foods are compared to white bread or glucose in terms of their rate of availability.

### **The Glycaemic Index of some foods:**

<b>HIGH</b>	<b>MODERATE</b>	<b>LOW</b>
<b>White Bread</b>	<b>Pasta/Noodles</b>	<b>Apples/Pears</b>
<b>Wholmeal Bread</b>	<b>Popcorn</b>	<b>Cherries</b>
<b>Nutrigrain</b>	<b>Porridge</b>	<b>Peaches</b>
<b>Cornflakes</b>	<b>Crisps</b>	<b>Apple Juice</b>
<b>Weetabix</b>	<b>Special K</b>	<b>All-bran</b>
<b>Potato</b>	<b>White Rice</b>	<b>Baked Beans</b>
<b>Melon</b>	<b>Sweetcorn</b>	<b>Lentils</b>
<b>Raisins</b>	<b>Sponge Cake</b>	<b>Peanuts</b>
<b>Bananas</b>	<b>Oranges</b>	<b>Yoghurt/Ice Cream</b>
<b>Sugar/Honey</b>	<b>Orange Juice</b>	<b>Fructose</b>
<b>Sports Drinks</b>	<b>Chocolate</b>	<b>Brown Rice</b>
<b>Glucose</b>		<b>Milk</b>

Foods with a high or moderate Glycaemic index are recommended for rapid replenishment of muscle energy following exercise.

## **OPTIMUM 24-HOUR NUTRITIONAL PACKAGE.**

<b>Pre-Training/Match</b>	<b>Consume a meal 2-3 hours before training and allow sufficient time for digestion.</b>
<b>Final Boost</b>	<b>Drink a carbohydrate sports drink 15-20 minutes prior to training/match to ensure adequate blood glucose levels.</b>
<b>During Training/Match</b>	<b>During training lasting an hour or less, hydrate with water drinking 1 cup every 15 to 20 minutes. During match play, hydrate with a sports drink that contains electrolytes.</b>
<b>Post Training/Match</b>	<b>Between 10 and 60 minutes post training, consume carbohydrate and protein. Optimal ratio of Carbohydrate to protein 4:1. This may consist of a pre-packaged recovery drink or whole foods with appropriate recovery nutritional balance. The sooner this is taken, the better.</b>
<b>Follow up Meal</b>	<b>2-4 hours post training, another meal should be taken with approximately the following ratio: 65% Carbohydrate, 15% protein, 20% Fat. Carbohydrates should rank high to moderate on the glycaemic index scale.</b>
<b>Eating for Recovery</b>	<b>Over the next 18 hours, the 65/15/20 ratio should be adhered to. Water should also be periodically taken. Adequate sleep and massage will further increase the recovery process.</b>