Notts School Of Gymnastics – Guide to Nutrition

(Extract from British Gymnastics Club Coach Resource Pack)

1) Terminology

Terms which are associated with this area are:-

i. Food:- Obviously this is what we eat. However, food contains nutrients such as Carbohydrates, Fats, Protein, Vitamins, Fibre and Water. The amount of each of these nutrients varies widely within different foods therefore it is important to eat a variety of foods in order to fulfil the bodies requirements of all nutrients.

ii. Nutrition:- is the process by which chemicals are taken up by the body in order to provide the energy and nutrients to keep it alive and healthy.

iii. Diet:- a term often misinterpreted, is basically a pattern of eating habit and food consumption which results in a specific nutrient consumption (e.g. low fat diet, high carbohydrate diet) to have a particular desired effect.

iv. Energy:- When a person exercises they use energy. Not all the energy we need can be stored in the body therefore we have to continue replenishing the stores by eating food. The old unit of measuring the energy in food was 'Calories' or Kilo calories (Kcal). Now it is measured in Joules or Kilo Joules (1 KJ = 1000 Joules) 1 Kcal =4.2 KJ.

Each person has different rate of energy conversion (Metabolic Rate) which makes it difficult to place accurate figures on the needs of an individual. However, it is regarded that a useful guideline for a gymnast lies between 2500-3500 cals per day depending upon the degree and intensity of training.

Energy consumption also plays an important part in weight control. If a person consumes more energy than is required then the majority of excess energy will be stored in the body as fat and the person's weight will increase. Similarly, if a person uses more energy than is consumed then the body will call upon the energy stores and the person will lose weight. Therefore, it is important, particularly during exercise sessions, that the body consumes energy and produces energy at the rate at which it is being used.

2) Nutrients

i. Carbohydrates:-

Carbohydrates are important in order to maintain the energy stores in the body. They are classified as either Complex carbohydrates (those foods where the carbohydrate exist in the natural unrefined state) or Simple carbohydrates (refined foods where the carbohydrates have been extracted from their natural state and can be absorbed rapidly i.e. sugar).

The best type foods, high in carbohydrates are the complex carbohydrates e.g. Wholemeal bread, Pasta, Cereals, Pulses, Peas, Beans, Vegetables and Nuts.

The simple carbohydrates contain relatively small amounts of other nutrients and fibre or a lot of fat, and are therefore less nutritious. A typical amount of carbohydrate intake for a man would be approx. 250-350g per day and for a woman would be 150-300g per day.

It is recommended that we should try to provide 50% or more of the energy in our diet from carbohydrates.

ii. Fats:-
Fats are an important nutrient in our diet and are a source of energy. Fat storage is important for insulating the body against cold and protecting vital organs of the body. However, it is recommended that no more than 35-40% of the total energy intake is provided from this source in our diet.

iii. Protein:-
Protein is required by the body for the building and repair of body tissues e.g. muscle cells and haemoglobin. The amount of protein required is usually met from a normal balanced diet. In fact, we probably eat too much protein even during the heaviest of training and the danger is that it may result in an increase in body weight. Protein is readily available in meats, but as 'red meat' contains fats it is recommended that our protein should be obtained from 'white meats' such as chicken, turkey or fish.

iv. Vitamins:-
Vitamins generally cannot be made by the body, but are essential and are needed to perform specific functions e.g. carbohydrate and protein metabolism, help in healing and infection. There are a variety of vitamins and they are labeled A, B, C, D, E and K. They are obtained from foods such as liver, fruits, vegetables. dairy products.

v. Minerals:-
Minerals are chemicals needed by the body in small amounts. They are all essential for the normal functioning of the body and are important components of bones (Calcium), heamoglobin formation (Iron), tooth structure (Fluoride), to enable the transmission of signals from the nerves to the muscles (Sodium and Potassium). In a well balanced diet the food we eat will provide sufficient Vitamins and Minerals, however, over consumption by taking supplements may cause toxic accumulation which can be harmful.

vi. Water:-
Water is one of the most important nutrients required by the body. It is the main transportation mechanism in the body, carrying nutrients to the tissues and eliminating waste products. Water plays an important role in temperature regulation of the body. During exercise water absorbs the heat generated by energy production and carries it to the skin for cooling. Sweating also has a cooling effect on the body by evaporated heat loss. Just a small amount of water loss (2-3% of body weight) can seriously impair performance.

3) Recommended Eating Habits

The following are guidelines towards a good balanced diet:-

i. Try to eat a variety of foods since no one food contains all the nutrients – this will provide a balanced diet.

ii. Eat a good quantity of "high fibre" foods such as whole wheat cereal, whole wheat bread, fruit, vegetables, muesli, etc. High fibre foods are readily digested and pass quickly through the body.

iii. Eat only a small quantity of foods containing fats such as fatty red meat, fried chips, and fried foods, crisps etc.

iv. Avoid fast foods such as those containing flavourings, preservatives as these foods contain few nutrients.
v. Eat carbohydrate foods such as baked potatoes (not fried), pasta, rice, whole wheat bread, and little sugar.
vi. Grill foods rather than fry them – this reduces the fat.
vii. Take in low fat, low cholesterol foods such as low fat cheese, low fat yoghurt and skimmed (not creamed) milk.
viii. Take in regular quantities of liquid. This is very important to the gymnast.
ix. For snacks eat nuts, fruit, mixed fruit, low fat yoghurt and muesli bars – rather than sugar, sweets or chocolate bars.
x. Eat small quantities regularly rather than huge irregular meals.

4) Pre Event – Pre Training Meal

Gymnasts should rehearse their competition preparation during training sessions and if possible train at the time they will compete. This will regulate when and what to eat to establish a good sleep pattern. It also helps them to find out what best works for them.

Prior to competition most gymnasts taper off their training but it is important to keep to their normal diet as this will make sure that their carbohydrate stores are fully replenished.

Three to four hours before competition or training, gymnasts should try to eat a light carbohydrate meal accompanied by a relatively high level of fluid. Foods such as fats and meats should be avoided before exercise as these are very slow to digest. Large quantities of sugar (glucose) drinks just prior to an event may lead to feeling of heaviness and should not be encouraged.

5) During Event Nourishment.

During long events or training sessions, gymnasts should make sure to maintain adequate body fluids so as not to impede their ability to sweat, this is especially so in hot environments. Regularly sipping small quantities of water will prevent the body from overheating.

If a gymnast feels hungry during an event, drinking fluids containing carbohydrates will sustain both fluid levels and provide a source of energy.

6) Post Exercise Replenishment

After exercise, it is important to restore energy levels as soon as possible. It is best if the gymnast can consume fluids and carbohydrates within one to one and a half hours after exercise as this is when the muscles ability to replenish its glycogen store is greatest – one of the recommended foods that provides most of the required nutrients and fluids is Chocolate Milk! Glycogen is produced by the breakdown of carbohydrates in the digestive process so that they can be absorbed by the body. This is particularly important if the training takes place twice a day or if competing on a number of days.