Expedition Food

The importance of food on expeditions

Obviously everyone needs to eat but food should be far more than just fuel. Eating is one of the great pleasures in life, it is a sociable activity, brings people together and can be a great way to meet new friends. When visiting other countries and meeting people from different cultures, sharing a meal can be a good way to "break the ice" and trying unfamiliar foods is always interesting whether pleasurable or not!

The quality of food is always important. Having both enough to eat and making sure that meals are tasty and enjoyable goes a long way to ensuring good morale. A few luxury foods such as chocolate, sweets, cakes and if available, fresh fruit, usually outweigh their cost and weight by their positive effect on mood.

What to consider when choosing foods

Whatever type of expedition you are planning, there are a few points which should always be considered. Food should be:

HIGH ENERGY -average energy requirements will increase by 50% on an expedition and if weight and/or bulk is a problem then the food should be energy dense, e.g. cheese, dried fruit, nuts, tinned meat or fish, biscuits.

LIGHTWEIGHT -very important if you have to carry food yourself, either on your back or underground, pay for porters or travel by plane. Where possible choose dry foods; don't end up carrying water.

WELLPACKAGED -especially important if food has to be taken underground, carried by porters or handled by others who will not be as careful as you.

EASILY PREPARED -if you are the cook and there is limited time, fuel, cooking facilities, cooking skills or space, you will need food which can be cooked in less than 15 minutes or if underground in the time it takes to boil a pan of water.

TASTY, APPEALING AND VARIED -this is always essential because food is no good unless it is eaten. Take along plenty of herbs, spices, salt and pepper -three times more than you think you will need and it will probably then be enough! When using similar ingredients day after day meals can become monotonous so different flavours are essential. Boring food will reduce appetites, something which you cannot afford to happen when energy requirements are so high.

WITHIN YOUR BUDGET -if transport is not such a problem as lack of money, try to obtain food from sponsors. Companies will often give free food but remember what to give back in return - even if its just acknowledgement in the report and a big thank you. Buying in bulk is cheaper and foods such as rice, pasta and beans are generally cheap as well as being high in carbohydrate which is important for maintaining performance.

EASILY STORED AND/OR A LONG SHELF LIFE -buy dry goods if possible; tins, plastic bags and plastic containers with lids are useful.

NUTRITIONALLY BALANCED -this becomes more important as the length of the trip and /or the physical difficulty increases. For a week or two of easy caving, what you eat is of less importance than how much. For a long trip of more than six weeks, consider taking a multi-vitamin and mineral supplement. If the caving is particularly strenuous or long, having enough energy, carbohydrate and fluid is essential if you want to keep going well.

The influence of diet on caving performance

To put the role of diet into context, an inappropriate diet will not affect caving performance as much as a lack of endurance training, and an appropriate diet will not improve performance as much as training. Eating correctly will make the most of whatever fitness you have but it will not compensate for any months of idleness before a caving expedition!

Having enough to eat and therefore enough energy is the primary consideration. If this was all, then the best food to eat on an expedition would be lard. It has the highest calorific value, is the cheapest source of energy and you can spread it on your skin for insulation or burn it for heat and light at night. However there are good reasons why a 100% lard diet is not the best to choose.

Energy is stored in the body in three ways: CARBOHYDRATE is stored in the liver and muscles as GLYCOGEN (800 kcals) PROTEIN is stored in the muscles (24,000 kcals) FAT is stored in the adipose tissue (141,000 kcals). Protein is generally not used as an energy source because it is less readily available.

When exercising the body uses a mixture of fat and glycogen as fuel for energy. At low intensity exercise or at rest the body uses mainly fat, at high intensity exercise mainly glycogen is used. The body's glycogen store is relatively small and when it has been used up, fatigue sets in. So to delay the onset of fatigue you need to be using less glycogen and more fat as your energy source for any given exercise intensity. You also need to make sure that your glycogen stores are as full as possible for as much of the time as possible. The only way to increase the proportion of fat used for fuel at high intensity exercise (and therefore to spare the glycogen for as long as possible) is to train. However you can ensure that your stores of glycogen are kept full by eating plenty of carbohydrate foods. This is particularly important after exercise when the glycogen stores will be depleted. You need to eat lots of carbohydrate as soon after exercise as possible since this is the time when the body can replenish its glycogen store most quickly and to the highest degree.

If you need to be caving day after day and wish to delay the onset of fatigue, eat a high carbohydrate diet -plenty of bread, potatoes, rice, pasta, beans, cereals, sweets and sugary foods. In this way you are more likely to replenish glycogen stores or "refuel" fully -a low carbohydrate diet will lead to partial refuelling and therefore poorer performance than you would expect.

The importance of drinking plenty of fluid whilst caving cannot be overstated since fluid loss will reduce performance more than any other factor including diet. During a normal day the average water loss is 2 -2.5 litres. This is increased by exercise, a high calorie diet and hot weather. As the intensity of exercise increases so does the rate of water loss and if you wait until you are thirsty before you drink, you will never be able to replace all the water lost. At a water loss of 500mls per hour (e.g. easy prussiking), if you only drink when thirsty you will at best only replace water lost by 75%. For each litre of water lost and not replaced performance is reduced by 20%.

Ideally you should drink before you feel thirsty, about 200mls every half-hour. The best drink is a very weak solution of sugar and salt since this will lead to the most effective and rapid re-hydration -better than water alone. 50g sugar and 3g salt in a litre of water can be flavoured with a little fruit juice.

Suggestions for expedition foods

LOTS OF THESE -Porridge oats, rice, pasta, flour, bulgar wheat, instant mashed potato. Freezedried ready meals, dried soups. Tinned meat, tinned fish, cured ham, cheese, dried lentils and beans. Dried milk, tea bags, coffee, cocoa powder. Sugar, syrup, condensed milk, margarine, oil. Tinned fruit, muesli bars, toffees, chocolates, boiled sweets, dried fruit, nuts. Biscuits, crackers, jam, chocolate spread, peanut butter. Salt, pepper, herbs, spices.

A word about alcohol -its great for relaxing and having a good time. However since it is a diuretic and will leave you feeling dehydrated its not such a good idea before a long caving trip.