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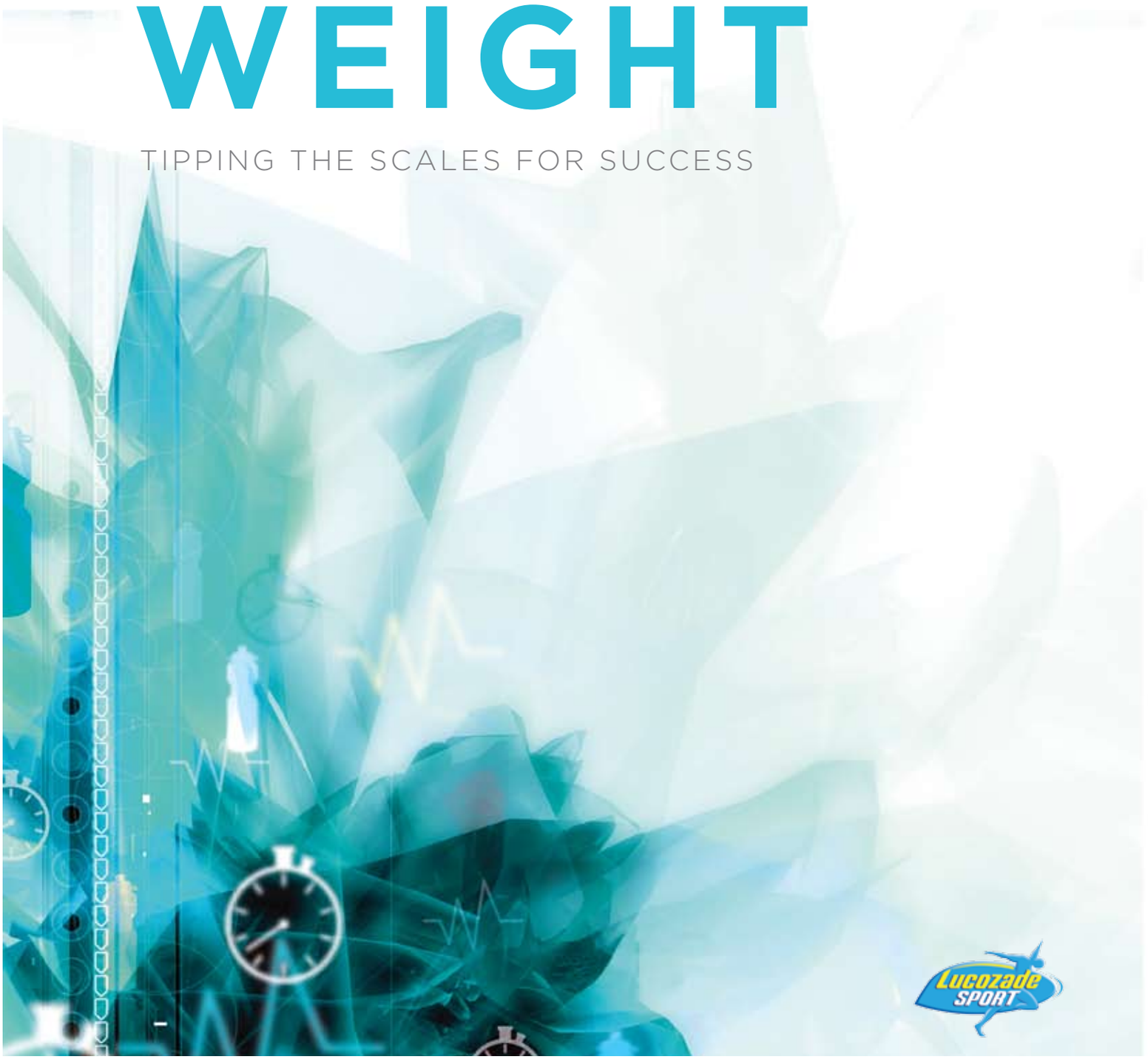
MAKING WEIGHT

TIPPING THE SCALES FOR SUCCESS



Lucozade SPORT

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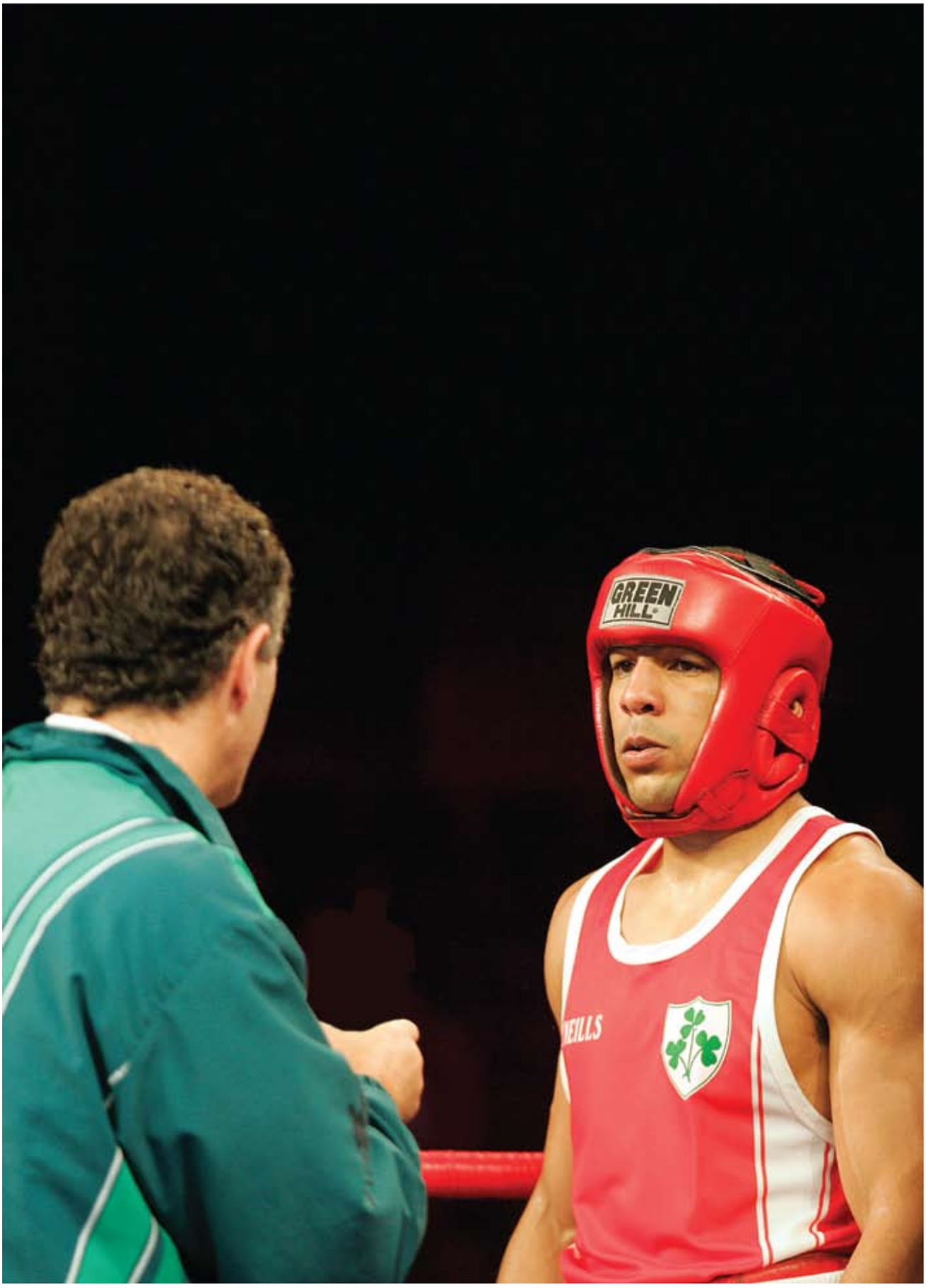
GREEN HILL

MAKING WEIGHT:
TIPPING THE SCALES FOR SUCCESS

"You can't scream success when you lose muscle."

- Tammy Mapes

Athletes will always try to modify their body weight in order to gain a competitive edge. Some athletes will need to "make weight", as they have to weigh in at a certain weight prior to competition (boxers, light weight rowers, jockeys). If they are unable to do this they cannot compete and they are required to lose weight.

Other athletes will feel that they need to lose weight in order to improve their competitive edge. In distance running and cycling excessive weight may slow down the athlete. In aesthetic sports such as gymnastics and ice-skating, athletes are expected to have a certain "look", thus often need to monitor their weight.

It is important that these athletes lose fat weight rather than muscle weight as, unlike muscle, fat will have no positive effect on performance. To lose body weight effectively, appropriate training, eating and drinking plans are required.

ONE:
FAT: DOES IT MAKE ME FAT?

A small amount of fat in your diet is necessary for normal body functions. The fat soluble vitamins (A and D) are derived from fat. Fat is also important for the production of cell membranes and some hormones, as well as giving our organs protection.

For most sports, only small quantities of fat are used to fuel the muscle and excess fat intake is more likely to be stored as fat in the body. High body fat levels slow you down and do not improve your strength. If you are watching your weight and eating a lot of high fat foods it makes the job much more difficult.

Why?

Fat is the most energy dense nutrient (9 calories for every 1 gram) therefore you only require small amounts. High fat foods include: chips, butter and some spreads, mayonnaise, fried foods, sausages, Indian takeaway or sauces, pastry foods or pies, burgers, nuts etc. These foods are also high in saturated fat, which has been associated with health problems such as heart disease, cancer and high blood pressure.

Other types of fat such as polyunsaturated and monounsaturated fat are better for you and should be part of a healthy diet. Good sources of these are nuts, spreads for bread, avocado, and oily fish which should be included as part of a healthy diet for any athlete.

TWO:
CONSIDERATIONS FOR WEIGHT LOSS

- Keep a food diary to see where and when you are eating especially in relation to training and competition.
- When eating fast food be aware that it generally will be higher in fat than food that you make yourself. When having Chinese food always have boiled rice, no fried meat or chicken and avoid prawn crackers. Indian food tends to be high in fat because of the addition of clarified butter (ghee) and some curries will have coconut milk added to make them creamy.
- Portion sizes are important. Eating small amounts regularly especially when training will help with recovery. Some studies have shown that weight loss is more successful when you eat the required calories over 6 small meals rather than 3 main meals, as you use calories to break down food. This is a process known as thermogenesis and is why people often feel warm after eating.
- Watch mayonnaise, spreads and butter. Even low fat alternatives can be higher in calories than you need.
- The harder you train, the more calories you use. Consider your recovery plans to allow you to train well at all sessions.
- Sports drinks will add to your overall calorie intake. If weight loss is a priority then they may not be needed; water, sugar free squash and low calorie sports waters may be more appropriate.
- Weight loss will only happen over time. How long has it taken to put on the weight? If an athlete has been injured for 10 months and has gained 10kg, then it is likely that it will take up to 10 months for the athlete to lose all the fat weight again.
- Cooking techniques; frying foods adds considerable fat and therefore calories, also when you fry you seal in the fat that is already present in foods.

The following table shows you ways that you can substitute some foods with others to reduce the amount of fat that you eat:

Food Swaps to reduce Fat in the Diet

1 gramme of fat = 9 calories/kcals

Food Swap	Fat Saving
2 Digestive Biscuits for 1 Banana	6 grammes
A packet of Crisps for 1 Banana	13 grammes
2 Chocolate Digestives for 2 Jaffa Cakes	6 grammes
A Doughnut for 2 slices of Malt Loaf	10 grammes
A 50g bar of Dairy Milk for a bar of Turkish Delight	22 grammes
Pilau Rice for Boiled Rice	
2 slices Bread with Butter or ordinary Margarine for 2 with low Fat Spread (the same quantity)	11 grammes
1 Big Mac exchanged for 2 regular Hamburgers	7.5 grammes
1 slice of ordinary Cheddar Cheese for 1 slice of Reduced Fat Cheddar	7 grammes
Swapping Creamy Sauce for Tomato based Pasta Sauce (200g)	27 grammes
1 Cornish Pastie swapped for a Ham Sandwich	37 grammes

THREE:

NEGATIVE CONSEQUENCES OF MAKING WEIGHT

There are a number of methods that athletes use to make weight including mild to severe food and fluid restriction, exercise, sauna sweating and layering clothes with exercise. The effects on performance will vary according to the extent of some of these practices and other factors, such as the frequency of the activity (a tournament situation where the athlete weighs in on successive days will be harder than a once off fight).

A reduction in food intake to lose weight will have a negative effect on carbohydrate stores, especially if this is combined with exercise during the food restriction period and/or dehydration. Well trained athletes usually have carbohydrate stores that will allow approximately 70 minutes of medium intensity exercise, if stores are completely full. If stores are depleted then exercise intensity will be affected and fatigue will result. This can affect athletes in the preparation phase leading up to competition.

Restriction of carbohydrates is a favourite method of achieving quick weight loss, but it is not something that elite athletes should consider as a routine way of achieving weight loss. Every gram of carbohydrate is stored along with 2.7g of water, meaning that reducing carbohydrate is an effective weight loss strategy, but adds to the dehydration conundrum.

Another common way of making weight is to “dry out”, or dehydration. Dehydration is well known to affect concentration and cognitive skills, especially in the heat. Another side effect of dehydration is that athletes will use up carbohydrates quicker and therefore deplete their stores, leading them to fatigue more quickly. Refer to the hydration fact sheet for more details on hydration and dehydration.

Other problems occur in “making weight” sports. Disordered eating behaviours effect mood and also leads to low intakes of certain nutrients (calcium and iron), which are crucial for bone development, good health and to prevent anaemia.

Although all of these issues are of concern, the main issue for most coaches and athletes is: “does making weight affect performance?” The evidence is not conclusive. There appears to be some individual tolerance to “making weight” strategies, however, athletes should be encouraged to look at their practice and ensure that they have good recovery plans following weigh in.

FOUR:
RECOVERY

The potential for full recovery following weigh in will depend on a number of factors:

- How long from weigh in to competition? The shorter the time available between recovery and competition, the more limited the types and amounts of food/fluids that an athlete can consume with comfort.
- How much weight loss was achieved in a short period of time leading up to the competition?
- Individual requirements for specific competitions need to be addressed; for example, does an athlete weigh in and then have 40 hours to competition or will he or she have to compete directly after weight in, or will there only be one weigh in over the duration of the competition or on subsequent days.

Recovery is Crucial between Weigh in and Competition

The main aim following weigh in will be to replace any of the fluid that has been lost and to ensure that the fuel stores are replaced / topped up prior to the competition. Practiced techniques are essential here. If athletes do not know how they are going to react to something, it should not be used for the first time during competition.

If an athlete only has a small amount of time, then the practical challenge of getting food and fluids into them is the main problem. Small amounts of fluids, taken regularly, that contain carbohydrates, sodium, fluid and protein are essential. Milk based drinks, along with sports drinks, offer athletes a simple way of doing this. The quantities will depend on their weight. It is also important that athletes sip on small amounts of fluid after weigh in rather than taking one large amount.

During recovery, replace any fluids lost along with extra. If an athlete has lost 1kg then 150% of the losses (1.5L) should be the target fluid intake. Sodium replacement along with this fluid will maximise the uptake of the fluid. This can be achieved by using an oral rehydration solution in combination with the recovery meal / drink. Fuel stores need to be replaced or topped up, as some athletes may have gone for a run, paddle or had a warm up to aid the making weight process and they will have used up some of their carbohydrates stores.

For athletes who will only compete a few times in the year, it is probably easier for them to live at a different weight than their competition weight. While athletes who are weighing in regularly will need to consider living as close to their competition weight as possible.

FIVE:
WEIGHT GAIN

Many athletes from a range of different sports are keen to gain weight as muscle. Training should include proper individualised resistance training programmes, aimed at producing the microscopic muscle damage that stimulates muscle growth and increases in muscle mass and overall body weight.

It is crucial that athletes consume enough calories to meet the demands of extra training and maintaining the new muscle mass that they have gained. The exact amount of calories that need to be consumed to do this is often difficult to measure, as calculating the requirements of the individual is a very difficult task. Some athletes will use most calories through their training and competition, as they have very inactive occupations. Other

athletes may have very labour intensive jobs on top of their training programmes.

Will increasing Protein intake enhance Performance?

Most athletes believe that they need extra protein to meet the demands of their training and to gain muscle mass. Compared to the general population (0.8 g protein per kg body weight per day), strength and power athletes, or athletes at an early phase of training do have increased needs for protein (between 1.2g to 1.7 protein per kg body weight per day). However, because overall intake of food is usually increased, most of these athletes have no problem meeting these needs.

Timing and availability of protein intake is very important. The key message is that athletes spread their protein intake out throughout the day, rather than having it in one or two meals.

Just before and directly after resistance training, athletes should consume a snack/drink with protein and carbohydrate providing:

- 1g carbohydrate per kg of body weight
- 10 to 20g of protein.

Athletes should be aware of the need to consume enough calories on all days of the week to promote muscle gain. If an athlete does not manage to consume enough calories on a given day, the weekly average intake must meet their requirements.

Sports Supplements

Athletes use sports supplements most widely in order to gain weight. The popular belief is that they will aid weight gain as muscle. The range of products that are available is huge and the claims that they make are wide ranging. The marketing tactics used include testimonials from athletes and word of mouth between athletes. Many supplements are sold on the premise that there is a scientific theory behind their promise. Athletes eating a well balanced diet, not avoiding any specific food groups and consuming sufficient calories to maintain weight should have limited need for nutritional supplements.

It is important to remember that, while there are some supplements that have been proven to work, the vast majority have no scientific support. Athletes and coaches should remember that, often, it is the simple things that are done well on a regular basis that will result in the biggest gains. Sports supplements are often used to replace food intake rather than act as an “add on” and often the expensive method does not give the best returns. Remember: if it sounds too good to be true, it often is not true.

SIX:
FREQUENTLY ASKED QUESTIONS

Why is Dehydration a problem?

Adequate fluid intake will prevent dehydration in athletes and the general public. Most of us do not drink enough, but for elite athletes, dehydration is a major problem. It can lead to a lack in concentration and reaction time, reduce physical performance and increase the risk of injury.

If you are dehydrated your brain is also dehydrated. This is very important for boxers, because if they take a blow to the head it can result in a serious head injury. Drying out to make weight may allow you to compete in one fight, but you are likely to under perform and you certainly will have difficulties making the weight again at the next weigh in. In a tournament situation this will be a major problem.

Dehydration affects concentration and reaction times and, as mentioned earlier, it will also result in carbohydrate stores being depleted at a faster rate. This can lead to fatigue setting in faster.

What is the most important type of Weight to lose?

If you need to lose weight, you want to lose fat. The difficulty with fat is that you will only lose this in the long term. Drying out and starvation diets over a short period of time will cause dehydration and loss of muscle mass, therefore losing the assets that will help your performance rather than the dead weight that is fat, which will slow you down. More muscle also means that more calories are required to keep it alive. Therefore, if there are gains in muscle mass, athletes can potentially eat a little more also.

Athletes in weight category sports need to have long term plans for fat loss. Using scales to monitor weight is often not enough for elite athletes. Other body composition assessments need to be used. Skin fold measures (by well trained sports scientists or nutritionists) or DEXA scanning should be considered, as athletes will be able to see how much of their weight is fat mass and how much is muscle mass. This will help ensure that the proposed target weight is realistic and achievable. Individual fat loss strategies can then be considered.

Some athletes may not physically be able to achieve the necessary weight, especially if their fat mass is already very low. They should then consider a different weight category.

Does Making Weight Impair Performance?

It is suggested that the acute loss of moderate amounts of weight can be coped with, as long as the athlete has an aggressive recovery strategy. This may be especially useful for larger athletes who struggle to make weight. The athlete and coach need to be aware that this weight loss will be from the fat free mass and it is still not fully understood what impact this might have on performance.

What other Dietary Strategies can Athletes use leading up to Competition?

Athletes should practice switching from their normal dietary intake of moderate/high fibre to a low residue diet for 24hrs before a competition. This involves replacing wholegrain foods with low fibre alternatives; use liquid replacement meals, tinned fruit etc.

Athletes need to know what suits them. “Practical and practiced” are key concepts. Foods or drinks that will not cause stomach upsets (shakes, small snacks) are important. If athletes are trying out new ideas, they should keep a record of what works and what does not. Record how you feel after trying a new nutritional strategy and this information can be used at a later stage to fine-tune the nutrition plan.

EIGHT:
FACT SHEET SUMMARY

This fact sheet has highlighted a number of methods and issues related to the practice of making weight. As highlighted throughout the course of this fact sheet, athletes should be very careful in deciding on strategies for making weight.

Any weight lost should be in the form of fat, as opposed to muscle or water, and it is important that weight gained is put on as muscle instead of fat. A well designed recovery programme between making weight and competition is also essential. Athletes considering any aspects of the above should consider seeking professional help to achieve their goals.

“It is crucial that athletes consume enough calories to meet the demands of extra training and maintaining the new muscle mass that they have gained.”

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