

# EATING DISORDERS IN SPORT

A guideline framework for practitioners working with high performance athletes



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# 01

EXECUTIVE  
SUMMARY



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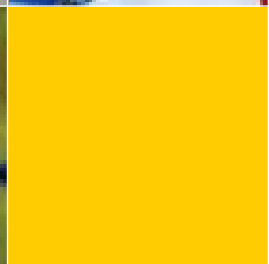
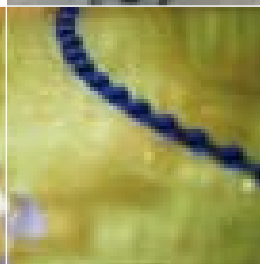
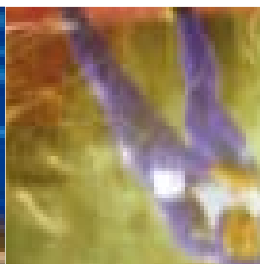


# 01

## EXECUTIVE SUMMARY

Eating disorders are complex, serious and multi-faceted medical conditions. Whether or not they occur in a sporting context, they will seriously compromise the health of the sufferer and can be life-threatening.

Complex problems seldom have simple solutions or explanations. Nonetheless, measures can be incorporated into the support that athletes receive that will reduce the risk of problems developing. These are principally described in the sections on coaching practice, nutritional advice and making weight (sections 5, 6, 7 and 8).

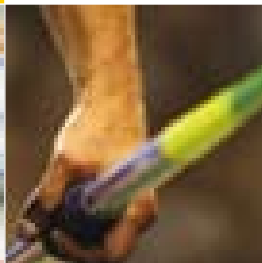


Alert sports professionals are also in a position to detect possible eating problems at an early stage – perhaps before a full-blown clinical syndrome has evolved. All practitioners should familiarise themselves with the key features of eating disorder syndromes and what to look for, and should particularly refer to sections 3 and 4.

Practitioners can also be instrumental in helping athletes to seek treatment although they should seldom, if ever, be directly involved in providing this treatment. However, athletes who are too ill to train or compete are likely to need support in adjusting their training and competitive programmes appropriately and in returning to sport during recovery. These topics are covered in sections 9, 10, 11 and 12.

What follows is not an exhaustive ‘to do’ list, nor even a set of instructions to deal with every eventuality. Instead, UK Sport have tried to produce a document that will help the reader to understand why eating disorders might be a problem in sport, how the risks of developing an eating disorder can be reduced by good practices, how problems can be identified at an early stage, and what could be done once a problem is identified. The document should be read as a source of information and as a guideline for prevention, detection and risk management in the area of eating disorders in high performance sport.

UK Sport hope that you find it helpful.



# 02

## EATING DISORDERS AND SPORT



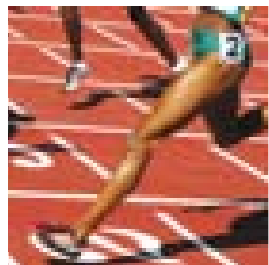


## 02 EATING DISORDERS AND SPORT

Elite athletes would be viewed by most of the general population as 'healthy'. However, the eating behaviours of some athletes may be associated with harm (disordered eating) or may even be part of a clinical condition such as anorexia or bulimia nervosa (see section 2 for a detailed description of these conditions).

Whilst most athletes follow a training regime accompanied by a diet that supports health and performance, some will struggle with their weight. Some athletes like to train at one weight and then compete at another, possibly lower, weight. In most cases the athlete will lose weight safely, preferably in consultation with a nutritionist or dietitian, and without long-term effects. Athletes who follow unsupervised diets and excessive training programmes are at greater risk of developing disordered eating patterns that might lead to eating disorders such as anorexia nervosa or bulimia nervosa.

Until the early 1980s, most people, including professionals in mental health, had only a vague notion of bulimia nervosa, yet anorexia nervosa had been known about since the 1800s. Eating disorders in sports were even less well documented, and although people were aware of some athletes being 'too thin to win' or 'fit but fragile', little was done about these athletes. There were circulating beliefs that you had to be thin and of a certain body type to succeed at sport. Some athletes and coaches held the belief that a reduction in weight would always enhance performance. Traditions were handed down from generation to generation in certain sports about the best way to lose weight. Prior to the onset of a developed sports science programme, there was little information about the best weight for sport or about nutrition practices that enabled refuelling and energy for sport.



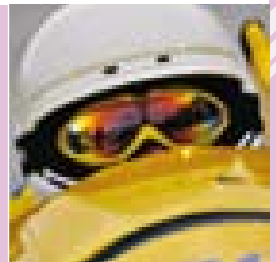
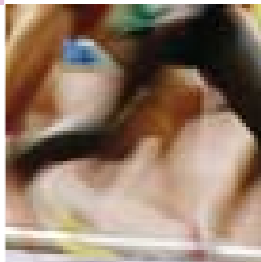
Many early research studies described variable prevalence rates ranging from 1% to 50% and many studies did not focus on high performing athletes. The most recent, largest and best designed study of elite athletes has found a high overall prevalence of eating disorders (13.5%). The prevalence rate was highest in female athletes (20.1%) but the male athletes' prevalence rate of 7.7% represents a huge increase compared to a non-athlete's.

## 2.1 Prevalence of eating disorders

High risk sports have been identified as:

- › Swimming
- › Running (track & field and cross country)
- › Gymnastics
- › Diving
- › Synchronised Swimming
- › Wrestling
- › Judo
- › Lightweight Rowing

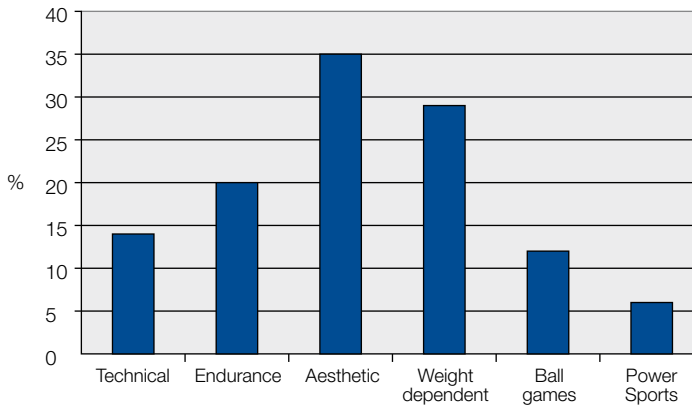
A 2001 study of distance runners in the UK found that of 184 female athletes, 29 (16%) had an eating disorder. Of these, 3.8% had anorexia nervosa, 1.1% had bulimia nervosa and 10% had a sub-clinical disorder or EDNOS (eating disorder not otherwise specified).





Other research has grouped sports according to the characteristics that may increase the prevalence in certain types of sport. For example the pursuit of a certain body aesthetic in gymnastics, the need to be in a certain weight categorisation in order to compete in judo or endurance sports such as running where weight and performance are closely linked (see chart below).

**Sundgot – Borgen, (1993)**



Athletes can, and do, develop eating disorders. Men are also at risk and although the prevalence rates are lower than in women, it is, none-the-less, a problem.

1. Sundgot-Borgen and Torstveit. *Clin J Sport Med*, 2004; 14(1):25-31
2. Sundgot-Borgen. *Med Sci SportsExerc.* 1994; 26(4):414-419
3. Hulley & Hill. *Int J EatDisord.* 2001; 30(3):312-7

# 03

## CHARACTERISTIC FEATURES OF EATING PATTERNS AND CLINICAL SYNDROMES





## 03

### CHARACTERISTIC FEATURES OF EATING PATTERNS AND CLINICAL SYNDROMES

The normal dietary concerns and eating habits of an elite performer may appear unusual or extreme to the non-athlete but for the most part are functional and productive in enhancing performance. More unusual or extreme eating attitudes and behaviours merge into disordered and potentially harmful eating, which in turn greatly increases the chances of a full-blown eating disorder syndrome developing (such as anorexia nervosa, anorexia athletica, the female athlete triad, or bulimia nervosa).

#### Normal athlete dietary concerns

- Meticulous attention to diet and weight
- Goal directed
  - Aim is performance enhancement
  - Emphasises adequate intake rather than restriction
  - Likely to revert to normal at end of sporting career

#### Disordered eating

- Use of potentially harmful weight control measures
  - Excessive exercise
  - Extreme, restrictive or faddy diets
  - Self-induced vomiting
  - Laxatives, diuretics, enemas, diet pills and stimulants

#### Anorexia Nervosa - core symptoms

- Weight is 85% or less of expected
- Intense fear of fatness/weight gain (even though underweight)
- Body image disturbance
- Amenorrhoea

### Bulimia Nervosa - core symptoms

- › Recurrent binge eating (excessive amounts and loss of control)
- › Compensatory purging (fasting/over exercising) - at least twice a week for three months
- › Self evaluation and self-esteem are over-influenced by weight/shape

### Eating disorder not otherwise specified (EDNOS)

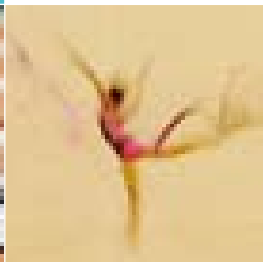
- › Meets some/most clinical criteria for specific disorder
- › But fails to meet full criteria for specific disorder

### Anorexia Athletica

- › Fear of weight gain although lean
  - Weight is 95% or less of expected (muscular development maintains weight above usual anorexic threshold of 85%)
  - Distorted body image
- › Restricted calorie intake
  - Often broken by planned binges
- › Excessive or compulsive exercise
  - Often with other pathological weight control measures
- › Menstrual dysfunction
  - May include delayed puberty
- › Gastrointestinal complaints

### Female Athlete Triad

- › Disordered eating (as defined above)
- › Oligomenorrhea or amenorrhea (reduced or absent menstrual periods)
- › Osteoporosis (or osteopenia)



### 3.1 Recognising an eating disorder

#### Anorexia Nervosa

Anorexia is characterised by a psychological need for thinness and an intense fear of becoming fat. Sufferers from anorexia restrict their food intake or exercise excessively in order to lose weight.

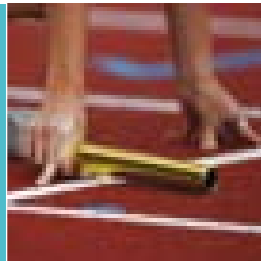
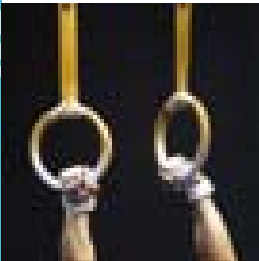
It is the combination of fear of fatness, distorted body image and extreme weight loss behaviours that enable a diagnosis to be made, not just the fact the athlete has lost weight.

#### Physical Signs

- › Severe weight loss (adults) or failure to grow and gain weight (children)
- › Dizzy spells and fainting
- › Swollen stomach, face and ankles
- › Downy hair on body
- › Poor circulation, always feeling cold
- › Dry, rough discoloured skin
- › Disrupted menstrual cycles (women) or loss of libido (men)
- › Loss of bone mass and, eventually, osteoporosis
- › Loss of hair on head when recovering

#### Psychological Signs

- › Intense fear of gaining weight
- › Distorted perception of body shape/weight
- › Denial that a problem exists
- › Changes in personality and mood swings
- › Obsession with improving performance, or setting unrealistically high standards



### Behavioural Signs

- Rituals attached to eating, cutting food into small pieces and moving around the plate
- Refusing to eat in company
- Secrecy
- Restlessness and hyperactivity
- Wearing big baggy clothes
- Vomiting using laxatives
- Over exercising - more than coach recommends for sport

### Bulimia Nervosa

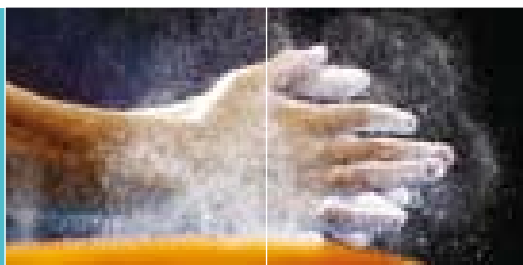
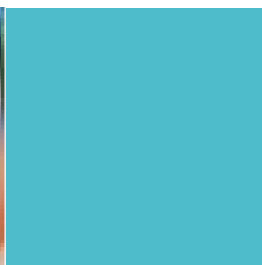
Bulimia is characterised by the search for the perfect body; an over concern with body size. There is a cycle of restricted eating, bingeing, and purging by laxatives, vomiting and diuretics to get rid of the food.

The athlete with bulimia can be of any weight and may be difficult to identify.



### Physical Signs

- Frequent weight changes
- Self-induced vomiting
- Sore throat, tooth decay, abraded knuckles through excessive vomiting
- Swollen salivary glands making face look round
- Constantly dehydrated (little saliva)
- Poor skin condition
- Irregular periods (women)
- Muscle cramps, lethargy, and tiredness



### Psychological Signs

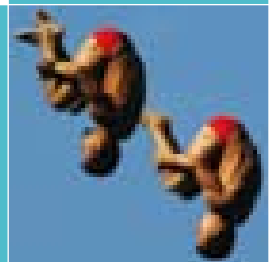
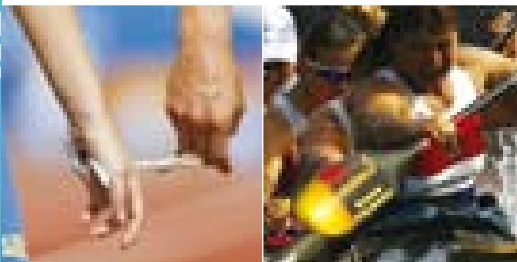
- Uncontrollable urges to eat vast amounts of food
- An obsession with food
- Distorted perception of body weight/shape and performance
- Emotional behaviour and mood swings
- Anxiety, depression, low self-esteem, shame and guilt
- Isolation, feeling helpless and lonely

### Behavioural Signs

- Frequent trips to the toilet after eating
- Bingeing and vomiting
- Excessive use of laxatives, diuretics or enemas
- Periods of fasting or excessive dieting
- Excessive amounts of exercise
- Secrecy and reluctance to socialise
- Shoplifting for food; abnormal amounts of money spent on food
- Food disappearing unexpectedly

## 3.2 Recognising disordered eating, the female athlete triad and anorexia athletica

These problems can be thought of as types of EDNOS where there are clearly problems but not sufficient to meet the full diagnostic criteria for anorexia or bulimia nervosa. For example, an athlete may only have missed two menstrual cycles (not the three needed to reach a diagnosis of anorexia nervosa) or bingeing and purging may only occur once a week (and therefore not constitute the full bulimia nervosa syndrome). Whilst these conditions may not show the same degree or extent of physical, psychological or behavioural signs they can be just as serious and should not be ignored.

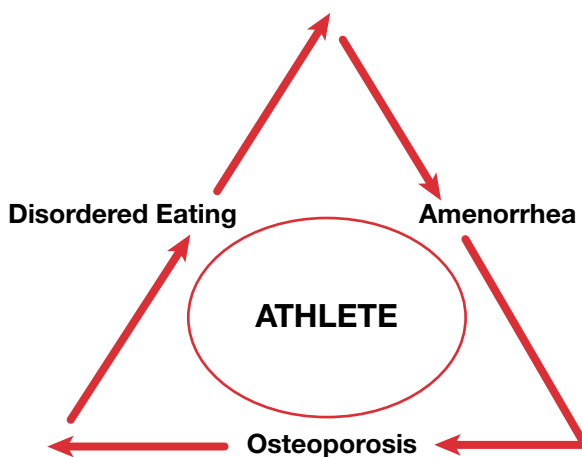


### Disordered eating

In an athlete with disordered eating, watch particularly for the behavioural signs of excessive exercise, vomiting and the use of purgatives.

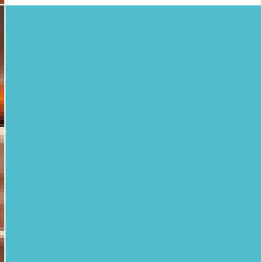
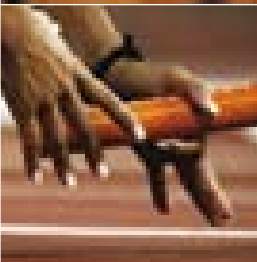
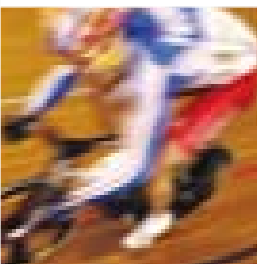
### The female athlete triad

If a female athlete displays one of the symptoms of the triad, it is important to check whether other symptoms are present and therefore whether the athlete may have an eating disorder.



### Anorexia athletica

This condition can be thought of as an EDNOS. The weight loss criteria are less stringent than for anorexia nervosa in order to take account of the sporting context in which the disorder occurs. Muscular development might maintain the athlete's weight above the usual anorexic threshold in the presence of otherwise severe eating disorder symptoms (see section 3).





### 3.3 Risk factors

Eating disorders usually arise via a complex interaction between vulnerability factors and triggering events. A vulnerable athlete who has been exposed to some of these risk factors may experience an adverse event that triggers a change in behaviour or feelings. Once into the cycle of disordered eating, maintaining factors such as initial rewards, compliments, improved performance, or a sense of order from weight loss and eating restraint can cause continuation of dieting behaviours and establishment of an eating disorder.

#### General vulnerability factors

- Concern re: weight and shape
- Emotional attitudes to food
- Eating restraint
- Social context and pressures
- Childhood traumas and adversity
- Biological/genetic factors

#### Family influences

- Parental dieting and obesity
- Parental eating attitudes
- Family dynamics
- Criticism and high expectations
- Parental ill health
- Divorce

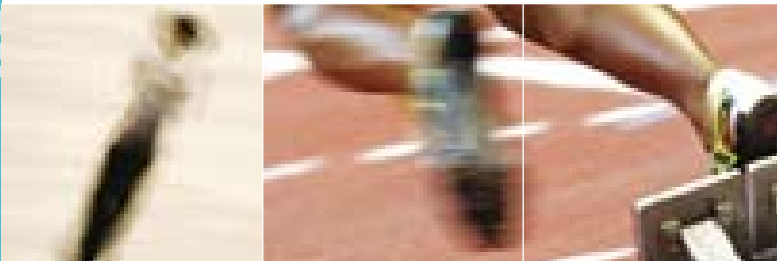
#### Individual factors

- Low self-esteem
- Perfectionism
- Obsessive behaviour
- All or nothing thinking
- Self control
- Self drive
- Self sacrifice
- Goal orientation

#### Sports specific factors

- Sport-specific training from a young age
- Increased training volume
- Loss of coach
- Injury/illness
- Sporting environment
- Will to win

Many of the individual factors listed will also promote sporting excellence.



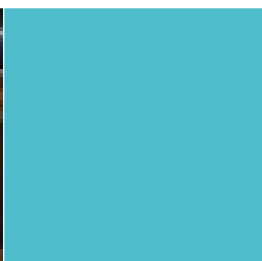
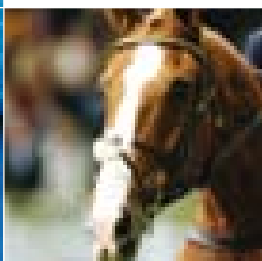
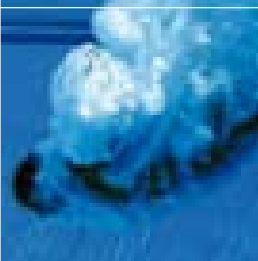
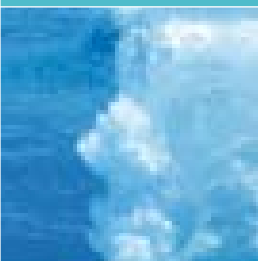
### Example of the development of an eating disorder

*Sally is a distance runner; she doesn't feel good about herself and has concerns about her weight, although this is well within the range for her height and sport. Sally is a perfectionist and looks to be the best or win at everything. Her peer group of athletes are unusually slim.*

*Sally leaves home for university; she has problems adjusting to campus life and is unhappy. She decides to go on an unsupervised diet. She has initial success; her running performances improve, and she gets compliments on her new, leaner look. This initial success leads to more dieting.*

*The underlying problems of Sally's unhappiness are unresolved, and she becomes unhappier. Sally now has increased resolve to diet and weight loss is still seen as a solution – especially as it seems to improve her running. Further weight loss leads to lowered mood, which leads to more unhappy feelings, which leads to lower self-esteem and Sally attempts to boost this by looking better and performing better, which involves more dieting. This then causes her performances to drop off and increases her misery.*

*Sally's case illustrates the interaction between vulnerability factors (which need not be excessive), trigger factors, such as life events or unsupervised diets, and maintaining factors such as initial success and/or increasing unhappiness.*



### 3.4 Athletes with physical disabilities

Athletes who have disabilities can also develop eating disorders and disordered eating. Whereas with an able-bodied athlete physiologists will be able to make suggestions about good weight:height ratios and what training weight/competing weight might aid optimum performance, little research has been done with athletes who have disabilities. 'Norms' for different disabilities are not available.

Coaches who work with disabled athletes would be advised to be aware of the signs, symptoms and risk factors as they apply to a range of athletes.

# 04

SCREENING FOR  
EATING DISORDERS





## 04 SCREENING FOR EATING DISORDERS

Many athletes will deny having a problem with an eating disorder. Everyone else may see the problem, but the athlete is not ready to admit they have a problem nor are they yet ready to seek help.

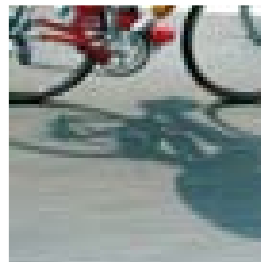
There are many questionnaires around that may help in screening and assessment, but athletes have been known to lie in their answers and to try and influence the questionnaire scores! One of the simplest and most practical to use is the 'SCOFF' test.

### The SCOFF questionnaire

- › Do you make yourself **S**ick because you feel uncomfortably full?
- › Do you worry you have lost **C**ontrol over how much you eat?
- › Have you lost more than **O**ne stone (7Kgs) in a three month period?
- › Do you believe yourself to be **F**at when others say you are too thin?
- › Would you say that **F**ood dominates your life?

If you have answered yes to two or more questions then you may have an eating disorder. Please note that the questionnaire is only a guide. If you think you have an eating disorder, it is important to get advice from your GP, counsellor or the Eating Disorders Association helpline. (See information and advice section)

Morgan JF, Reed F, Lacey JH. The SCOFF Questionnaire: assessment of a new screening tool for eating disorders. *British Medical Journal*, December 1999;319:1467-1468.



When the test score threshold is set at two or more positive answers then the SCOFF questionnaire is highly sensitive at detecting both anorexia and bulimia nervosa with almost 100% of actual cases identified. At this threshold the specificity is also acceptably high (87.5%), representing a false positive rate of 12.5%. The SCOFF questionnaire should therefore be used as a screening tool rather than as a diagnostic instrument.

The SCOFF questionnaire can be used by sports doctors, sports dietitians and sport and clinical psychologists as part of a routine screening. If there are concerns or the athlete requests further help, then further assessments can be made by a clinical psychologist or psychiatrist.

### Other assessment tools and questionnaires

There are many assessment tools that allow qualified clinicians to further assess eating disorders, formulate the problem and determine what therapy might be needed. Qualified practitioners can access the various tests although the publishing companies usually restrict the use of assessment tools to appropriately qualified clinicians such as clinical psychologists.



# 05

NUTRITION  
– GOOD PRACTICE



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## 05

### NUTRITION – GOOD PRACTICE

Good nutritional practice is a key strategy in the prevention of eating disorders. All practitioners should encourage an ethos of appropriate nutrition within their squads. The ideal diet of an athlete must fulfil two criteria:

1. To maintain health
2. To ensure nutrition for performance

To maintain health the diet must be adequate in all nutrients. This is especially important when considering an individual who has, or may have, an eating disorder. Individuals in this situation may be eating a grossly inadequate diet that does not even match the requirements for health. Those with bulimia may be consuming an appropriate intake but eliminating it by vomiting or through laxative abuse.

Nutrition for performance must meet the demands of, and adaptations to, training. It must also aid recovery from training and preparation for competition. To ensure nutrition for performance, each athlete should have their own individual strategies before, during and after training and competition for food and fluid intake. These criteria can only be met by including appropriate amounts of energy, carbohydrate, protein, fat, vitamins, minerals and fluid in the diet.



## 5.1 Achieving the ideal diet

### Energy

Energy intake must match energy requirements. When this happens not only can performance be optimised, but requirements of the essential nutrients for health and performance will also be met. Individuals who regularly consume an inadequate energy intake can put both health and performance at risk.

### Carbohydrate

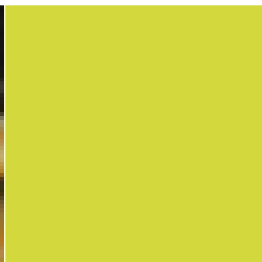
Carbohydrate is the most important nutrient for sporting performance. Carbohydrate is stored in the body as glycogen, a readily available source of energy for the working muscles. Carbohydrate requirements will be determined by the amount, intensity and duration of training, body size and daily non-sport activity.

### Protein

Protein is important for the growth and repair of muscle, however it is important to remember that training is the key factor in the development of muscle. Protein requirements for athletes are higher than those of non-athletes, although many athletes will consume more than they need. However, those athletes who regulate energy intake because of their sport may be at risk of an inadequate protein intake. Athletes who compete in weight category sports or sports where a lower body weight is desirable should be aware of this possibility.

### Fat

Whilst excessive fat intakes are not desirable in the diet of the athlete, fat is still a vital part of an 'optimum' diet. Fat-soluble vitamins and essential fatty acids are provided by the fat in the diet.



## Vitamins and minerals

Vitamins and minerals are only needed in very small amounts but they play a vital role by supporting all the major systems within the body, including energy production. By including foods from the four major food groups: meat, chicken, fish or a vegetarian alternative such as beans; fruit and vegetables; cereal foods such as bread, rice, pasta, etc.; dairy foods and an appropriate amount of suitable polyunsaturated and monounsaturated fat, the whole range of vitamins and minerals will be included, provided energy requirements are being met. When working with individuals at risk from eating disorders there are two minerals in particular that do merit extra attention – iron and calcium. There is a risk of these minerals being deficient in the diets of those with eating disorders and both can have a major impact on health and performance. Supplementation may be needed as part of treatment for anaemia or osteoporosis as it may not be possible to correct deficiencies through dietary measures alone.

## Fluid

Adequate hydration is essential for the maintenance of health, as well as to support performance. It is vital for the athlete to have appropriate fluid strategies to support training and competition.

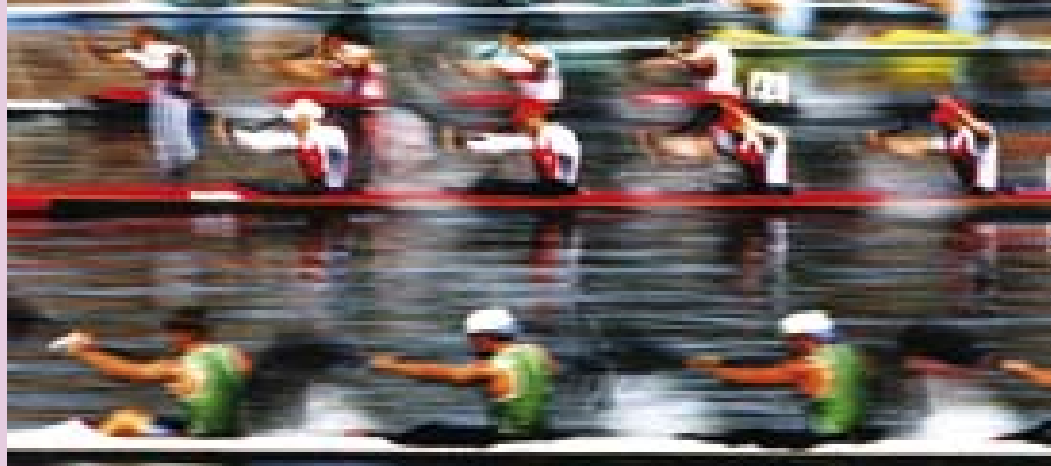
## 5.2 Summary

Further information regarding nutrition for health and performance can be obtained in the recommended further reading. Athletes should take advice from a registered sports dietitian or sports nutritionist if they need help to ensure that the content, quantity and timing of their diet are appropriate.

# 06

GOOD PRACTICE - STRATEGIES FOR  
PRACTITIONERS WORKING WITH  
HIGH PERFORMANCE ATHLETES





## 06

### GOOD PRACTICE - STRATEGIES FOR PRACTITIONERS WORKING WITH HIGH PERFORMANCE ATHLETES

#### 6.1 Preventing and minimising risk

Good practice can reduce the risks of potentially vulnerable athletes developing one of the eating disorder syndromes listed in section 3. The implementation of universal good practice is therefore one of the key strategies that sports organisations can pursue to minimise the likelihood of problems developing. However, while good practice can help reduce risks, eating disorders are invariably complex multi-faceted clinical conditions. Practitioners on their own do not 'cause' eating disorders.

- Avoid public weighing. Offer privacy from other team members, staff, the public, etc. This includes not publicly displaying weight measurements
- Do not pass derogatory remarks concerning the weight or body composition of individuals
- Be sensitive to the feeling of athletes and how they may respond to comments concerning their body
- Remember that there are limitations to the use of body fat measurements (see section 8 on making weight). Measurements should be undertaken with caution as there is the potential to initiate or exacerbate unhealthy eating concerns
- Remember that the relationship between weight and performance is complex and that decreasing weight will not guarantee improved performance
- Any weight loss programme should be carefully supervised by someone qualified to do so (e.g., a nutritionist/dietitian and/or physiologist)



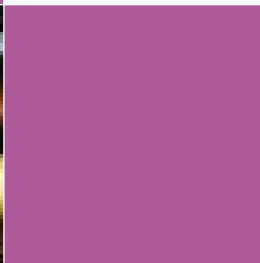
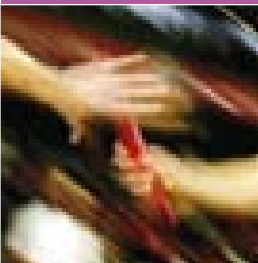
- Do not impose standards of weight, body fat or nutritional intake on one athlete because of the success of a different athlete. The optimum training and competition weight will be individual to the athlete
- Encourage an education programme within the squad or team that promotes the role of nutrition in supporting training and performance. For example, encourage sensible, regular meals for athletes with appropriate snacks to support training
- Do not recommend extreme or faddy diets such as those that are deficient in fat and/or carbohydrate
- Remember that young athletes can be especially influenced by role models and by the behaviour of those that they respect and aspire to emulate. Often this influence can be positive, but occasionally an inappropriate role model will promote unhealthy eating habits and attitudes

## 6.2 Approaching an athlete

A coach should expect to practice in a manner that minimises the risk of overuse or contact injury and should also know how and where to seek help for an injured athlete. In the same way, a coach should know that certain practices increase the risk of an eating problem developing and should know how to get help for an athlete about whom (s)he is concerned.

By reason of his or her close proximity to the athlete, the coach may be the first person to be aware of a problem, but all practitioners should be familiar with the characteristics of eating disorders listed in section 3.1.

Approaching athletes who may have a problem is never easy. The athlete is likely to deny the problem (at least initially). The suggested way to approach an athlete is to do so early, directly, confidentially and supportively.



- Early:** Denial will not diminish as time passes and it may increase. Physical health and performance will continue to deteriorate if there is a delay.
- Directly:** Honesty is important and will reduce the risk of unhelpful collusion with the athlete's secrecy and denial.
- Confidentially:** The initial approach may be made with another member of the support team (e.g., a nutritionist/dietitian) but the athlete's confidentiality in respect of other team members is important.
- Supportively:** A critical or blaming approach is unlikely to be helpful. Gently mentioning that there appears to be a problem and inviting the athlete's views is a good way to start, although considerable resistance can be expected.

Some athletes will openly acknowledge a problem and welcome an opportunity to get help. However, many will deny a problem and resist seeking help. The most important thing is to make the athlete aware that there are concerns. A second or third approach may be necessary and at some point (which may be reached early if concerns are serious) a decision will need to be made about whether to allow an athlete to continue full training without a proper assessment of his or her health. This is best decided in consultation with other members of the support team including the sports physician, nutritionist and others.

Although practitioners might find themselves well placed to detect a problem and to prompt an athlete to seek help, they should not put themselves in the position of being the athlete's therapist nor of taking full responsibility for the athlete's health.

# 07

OPTIMUM PERFORMANCE  
WEIGHT



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The 'ideal' weight for performance can be difficult to decide. It may be lower than the weight that the athlete normally lives at; however it must not endanger the health of the athlete. Each member of the support team may see the optimum performance weight differently and the final figure will be a compromise of several potentially competing factors. Those involved in the decision should include the nutritionist/dietitian, physiologist, sports physician, coach, psychologist, physiotherapist (depending on accessibility or availability of each) and, of course, the athlete.

- An optimum performance weight might not be an ideal long-term weight
- It might not be sustainable
- Any risk must be managed/minimised by the support team
- Maintaining a weight which is too light for too long will endanger health and performance

#### Example – making weight for competition

The typical scenario for an individual losing weight for competition then returning to normal weight might be a martial arts competitor making weight for a fighting category.

They may live and train outside their competitive weight but need to reduce their weight prior to competition. The competitive weight might be dictated at 58kg and they may normally live at 60kg. This would necessitate losing 2kg. Losing 2kg for the competition then returning to 60kg may give a slight risk that is eliminated when the weight returns to normal. However, if that individual normally lives at 67kg and has never trained at a weight lower than 63kg, they would be placing themselves

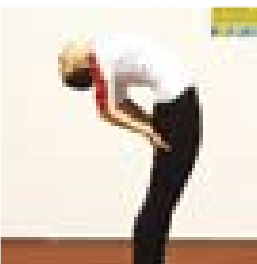


under considerable risk by aiming for 58kg. Even for a short period of time this is unlikely to be beneficial to performance and may not even be achievable for that individual.

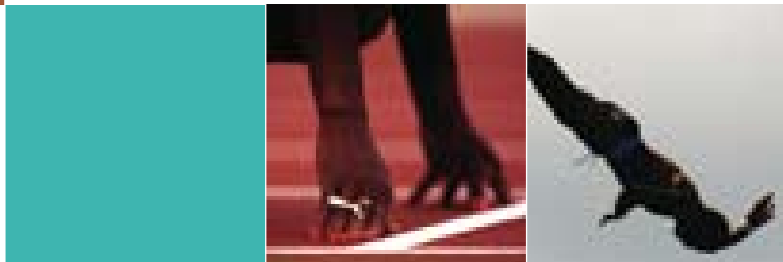
### Example – problems with prolonged weight reduction

Longer-term weight reduction may occur in, for example, an endurance athlete. Endurance athletes will not benefit from carrying excess body fat and may aim to reduce body fat in order to improve performance. However, if the target is too low there are a number of long-term risks to the athlete:

- › Females may suffer problems with menstruation
- › Bone density may be affected resulting in early osteoporosis or osteopenia
- › There may be medical risks if there is an inappropriate target weight or means of achieving that weight which will precipitate an eating disorder. Some athletes are more vulnerable than others in this respect. The key medical complications of eating disorders are summarised in appendix vi
- › The ability of the athlete to train will become affected if energy intake is not sufficient to fuel training and aid recovery
- › Micro-nutrient intake may be compromised, resulting in deficiencies of vitamins and minerals. This could result in a spectrum of disorders including, for example, anaemia, which would further hinder performance and training



The optimum performance weight for each individual needs to take account of these factors. The diet of the individual must ensure that training can be safely maintained.





# 08

MAKING  
WEIGHT



  
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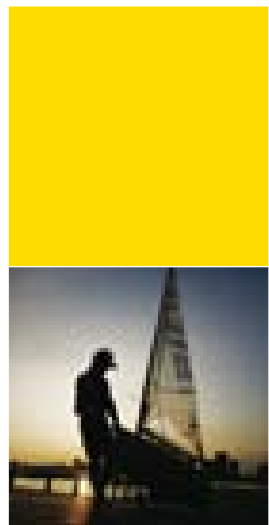
## 08

### MAKING WEIGHT

The term 'making weight' is used in sports where athletes have to meet weight criteria for competition. Weight is sometimes lost rapidly in the days leading up to a competition and is often allowed to increase again after the competition. This cycle of weight loss and gain and the techniques sometimes employed to lose the weight can threaten the health of the athlete as well as performance.

In order to minimise the threat to health and performance, all sports should have a code of practice for making weight. The following list may be used or sports should consider including the following points:

- The ultimate aim should be to achieve desired weight loss through safe and realistic changes to body fat levels well in advance of competition
- Nutrition that supports training must be maintained
- Weight loss immediately before competition should be minimised
- Techniques such as dehydration through voluntary fluid restriction or excess sweating, starvation, self-induced vomiting, laxative abuse, or diuretic use, should be considered as high-risk methods to be avoided
- Weight loss should be supervised by a registered dietitian or nutritionist
- Those athletes who have to lose excessive amounts of weight to make categories should consider their reasons for competing at that weight



## 8.1 Strategies

- › Expert advice should be sought on ideal weight targets for the individual. This must be consistent with long-term health and performance as well as shorter-term competition goals
- › The rate of weight loss, as well as the intended target weight, needs careful consideration. In general, a weight loss of more than 1kg per week is not recommended because of the potential detrimental effect to health of an excessively restricted diet and to performance as a result of loss of lean muscle mass
- › An energy decrease of 500kcal to 1,000kcal a day is needed to achieve an appropriate weight loss
- › A minimum energy intake must be maintained. If intensive training is to be undertaken, it is likely that athletes will need a minimum of between 1,500kcal and 2,000kcal a day. A minimum of 1,200kcal to 1,500kcal might be considered the lowest level possible to provide all basic nutrition for the body, but reductions below 1,500kcal can hinder the ability of the athlete to train
- › In some cases it may be necessary to introduce, in conjunction with the coach, extra exercise into the programme to assist weight loss – particularly in athletes where non-training activity is low
- › Athletes must provide accurate food records, as failure to do so will result in inappropriate advice. This could result in a cycle of inappropriate advice, therefore poor compliance, and then inappropriate weight loss techniques
- › An emphasis on reducing fat intake is useful in weight reduction, encouraging the athletes to consume carbohydrate that will aid training
- › Foods forming the weight management diet must be nutrient dense to ensure balanced nutrition
- › Meals should not be missed



- Minimal weight losses might be achieved prior to a competition by dehydration but the implications of this must be seriously considered. There is no absolute 'safe limit' to the amount of weight or percentage of body weight that can be lost. Factors to consider include the rapidity of weight loss, the athlete's initial starting weight and the likely effects on strength and endurance (which may be different). These factors vary from sport to sport and guidelines on safe limits based on a percentage of body weight may be incorporated into a code of practice for individual sports
- If body weight and body composition measures are to be employed, the athlete must understand how these results are to be used and interpreted
- Weight must be taken on the same scale in the same clothes (or minimum of clothes) at the same time of day. Weight scales must be calibrated regularly
- Measurement of body fat using callipers has several limitations:
  - There will be a wide variation in results if different people take measurements: there can even be an element of intra person error. Appropriate training and good standardisation procedures will reduce variation
  - For accuracy, values should be used from tables that have been established for specific populations – e.g., same gender, age range, ethnicity, etc.
  - Body fat percentages or totals (some practitioners provide a sum of skinfold measures rather than convert this to a percentage of body fat) can be misused
  - Body fat measurements should not be used in isolation. They can be helpful alongside other physical measurements e.g., upper arm/thigh circumference and maximal power output. This may be more appropriate in considering body composition changes and how these relate to performance
  - Bioelectrical impedance is a quick technique of body composition measurement but needs considerable experience, expertise, and strict control of environmental conditions. At best, the results may be less reliable than using callipers and at worst can be very unreliable. Their use is not recommended in this field

# 09

EVIDENCE-BASED TREATMENTS,  
THE NHS AND ACCESSING  
THERAPISTS





## 09

## EVIDENCE-BASED TREATMENTS, THE NHS AND ACCESSING THERAPISTS

Conditions such as eating disorders require specialised treatment, often for lengthy periods. It will usually be necessary for an athlete to receive his/her treatment outside of sport, most commonly in the NHS. Many specialist NHS clinics are some distance away, have long waiting lists and/or complex referral routes. Some sports organisations refer to private clinics (run along similar lines to NHS facilities) at an early stage.

### Psychological treatments

Cognitive Behavioural Therapy (CBT) and Interpersonal Therapy (IPT) are two evidence-based psychological treatments that have been shown to work with people who have eating disorders. Cognitive therapy can provide a formulation for the client's problems that they can use as a means of helping themselves with their problems.

### Medication

Medication is occasionally recommended and some antidepressants are helpful in bulimia nervosa. Medication may also be recommended to treat co-existing conditions (see appendix iii). All medications have side effects that need to be balanced against the likely benefits. Athletes are advised to discuss this with their team doctor before embarking on a course of treatment.

### Referral routes

Unless the athlete has access to a clinical psychologist working in the area of their sport, the referral will either be through the NHS route or through a private therapist.



## NHS

When a diagnosis has been made or is strongly suspected, a medical doctor (GP) can refer an athlete to a therapist. These may be counsellors who have a qualification in counselling; a community psychiatric nurse (CPN); a clinical psychologist; or a cognitive behaviour (CBT) therapist. If the referral is via a GP to these professionals, it can be assumed they have training and experience in eating disorders and receive supervision for their work. They will be accredited with their own professional bodies.

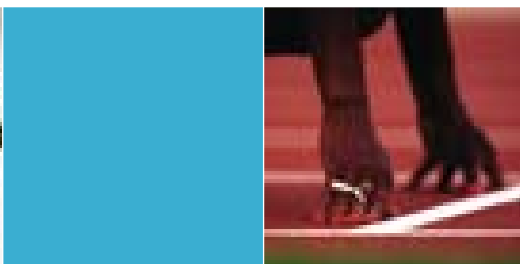
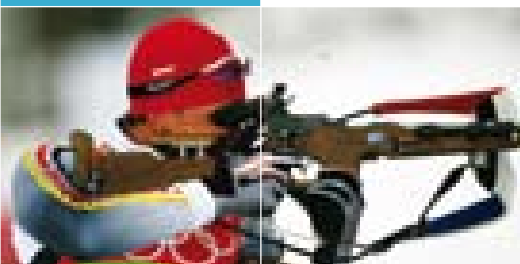
For more severe problems (and especially anorexia nervosa), a number of professionals working in a therapy team are likely to be involved - for example, a clinical psychologist or nurse therapist working closely with a clinical dietitian and psychiatrist.

## Private clinics

Some areas of the country are well served by private clinics, although cost can be considerable and not all insurance schemes will cover eating disorders. As with the NHS, most private clinics are run by multi-disciplinary therapy teams offering a range of out-patient, day-patient or intensive in-patient treatment programmes.

## Private therapists

These therapists usually accept self-referrals. It is important to check the qualifications of the therapist. If they are accredited with the British Association for Counselling and Psychotherapy (BACP) or the British Association for Behavioural and Cognitive Psychotherapy (BABCP), the therapists will have undertaken suitable extensive training and receive supervision for their work. Both bodies have lists of therapists in different geographical areas, their training, availability, fees and experience in



# 10

PROFESSIONAL COMPETENCIES  
AND THE SUPPORT TEAM





## 10 PROFESSIONAL COMPETENCIES AND THE SUPPORT TEAM

### Guiding principles

An athlete and all members of his or her support team should be clear about the following:

- Who is responsible for what? Where do an individual's responsibilities (and professional competencies) begin and end?
- How do individuals relate to each other?
- Are there clear lines of communication and accountability? Confidentiality issues need to be clear. Does the athlete know how information may be shared and for what purpose? Is this clearly stated in any contract the athlete may have with the team or institute?
- If an athlete refuses for information to be shared, the athlete and practitioner should try to agree limits on what needs to be shared. For example, can a problem be described in general terms without the need to mention sensitive personal information?
- There may be times when confidentiality needs to be over-ridden, for example, if there is an immediate serious health risk. These times will be rare.
- Who has overall co-ordinating responsibility e.g., for ensuring that a health problem is identified and addressed? On occasion, this role will fall to the team physician but professional background is less important than identifying an appropriate individual able to take on this role.

The following table lists the usual qualifications and basic competencies of the practitioners who are likely to be working with high performance athletes. Not all support teams will include each one. For example, some organisations have clinical psychology input and others do not, whilst some have specialist strength and conditioning advisors on their coaching staff. The final column is a broad overview of the roles and responsibilities of each in relation to high performance athletes with eating disorders.



Practitioner	Qualifications	Eating Disorder Competencies	Roles and Responsibilities
<b>Sports Physician</b>	<ul style="list-style-type: none"> <li>› Medical degree</li> <li>› Postgraduate qualification in sports medicine</li> </ul>	<ul style="list-style-type: none"> <li>› Medical assessment</li> <li>› Provisional diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>› Liaison with other members of support team</li> <li>› Medical assessment if concern for athlete's nutritional state or eating behaviours</li> <li>› Referral to outside agencies for treatment</li> </ul>
<b>Sports Psychologist</b>	<ul style="list-style-type: none"> <li>› Sports science or sports psychology degree</li> <li>› Postgraduate qualification in sports psychology</li> <li>› Accredited with BASES or chartered with BPS</li> </ul>	<ul style="list-style-type: none"> <li>› Basic awareness of eating disorders and their effects</li> </ul>	<ul style="list-style-type: none"> <li>› Using psychological techniques to enhance performance</li> <li>› Liaison with sports physician or clinical psychologist if concern for athletes psychological health</li> </ul>
<b>Sports Nutritionist</b>	<ul style="list-style-type: none"> <li>› Sports science or nutrition degree</li> <li>› Postgraduate qualification in sports nutrition</li> </ul>	<ul style="list-style-type: none"> <li>› Basic awareness of eating disorders and their effects</li> </ul>	<ul style="list-style-type: none"> <li>› Nutritional advice and support for optimum performance</li> <li>› Liaison with sports physician if concern for athlete's nutritional state or eating behaviours</li> </ul>
<b>Sports and Exercise Physiologist</b>	<ul style="list-style-type: none"> <li>› Sports science or physiology degree</li> <li>› Postgraduate physiology qualification</li> <li>› Accredited with BASES</li> </ul>	<ul style="list-style-type: none"> <li>› Basic awareness of eating disorders and their effects</li> </ul>	<ul style="list-style-type: none"> <li>› Collect and analyse objective measures relating to performance</li> <li>› May help athlete set and attain optimum performance weight</li> <li>› Liaison with sports physician and nutritionist if concern for athlete's nutritional state or eating behaviours</li> </ul>

Practitioner	Qualifications	Eating Disorder Competencies	Roles and Responsibilities
<b>Sports Coach</b>	<ul style="list-style-type: none"> <li>› Senior qualification with national body in specific sport(s)</li> </ul>	<ul style="list-style-type: none"> <li>› Able to recognise eating disorder and effect on performance</li> </ul>	<ul style="list-style-type: none"> <li>› Avoid higher risk practices (public weighing, derogatory comments etc.)</li> <li>› Liaison with sports physician and/or nutritionist/dietitian if concern for athlete's nutritional state or eating behaviours</li> </ul>
<b>Sports Dietitian</b>	<ul style="list-style-type: none"> <li>› Degree in dietetics/nutrition</li> <li>› Postgraduate qualification in sports nutrition</li> <li>› Registered with HPC</li> </ul>	<ul style="list-style-type: none"> <li>› Clinical knowledge of eating disorders and complications</li> <li>› Nutritional assessment in eating disorders</li> <li>› Nutritional support as part of eating disorder treatment</li> </ul>	<ul style="list-style-type: none"> <li>› Nutritional advice and support for health and optimum performance</li> <li>› Liaison with clinical psychologist and sports physician if concern for athlete's nutritional state or eating behaviours</li> </ul>
<b>Clinical Psychologist</b>	<ul style="list-style-type: none"> <li>› Psychology degree</li> <li>› Postgraduate (often doctoral) qualification in Clinical psychology</li> <li>› Chartered with BPS</li> </ul>	<ul style="list-style-type: none"> <li>› Psychological assessment of psychological and psychiatric conditions – specifically eating disorders</li> <li>› Use of specific psychological therapies for these conditions</li> </ul>	<ul style="list-style-type: none"> <li>› Accepting referrals from other team members for assessment and some therapy</li> <li>› Referring, in liaison with team physician, to outside agencies for treatment</li> </ul>
<b>Sports Physiotherapist</b>	<ul style="list-style-type: none"> <li>› Physiotherapy degree or Graduate Diploma in Physiotherapy</li> <li>› Sports physiotherapy qualification Registered with CSP or HPC</li> </ul>	<ul style="list-style-type: none"> <li>› Basic awareness of eating disorders and their effects (especially in relation to injury risk, recurrent and non-healing injuries)</li> </ul>	<ul style="list-style-type: none"> <li>› Assist in monitoring athlete's exercise programme (especially if recovering from injury)</li> <li>› Liaison with sports physician and nutritionist if concern for athlete's nutritional state or eating behaviours</li> </ul>

# 11

RETURNING TO TRAINING AND  
COMPETITION DURING RECOVERY  
AND REHABILITATION





# 11

## RETURNING TO TRAINING AND COMPETITION DURING RECOVERY AND REHABILITATION

There are a number of factors to be considered when making the decision with an athlete as to when and how to return to training and competition during recovery. In order of priority these are: medical stability, nutritional stability, abstinence from eating disorder behaviours, and the presence or absence of significant stressors.

### Medical stability

Above all else, the sports physician (and by extension the other practitioners supporting the athlete) have to be satisfied that the athlete is medically stable. The foundation of this includes an assessment of the athlete's state of hydration and any electrolyte or ECG abnormalities that might make even light training inappropriate or inadvisable. Haematological abnormalities including deficiency anaemias also need evaluation. In addition, the extent of any reduction in bone density (osteopenia or osteoporosis) has to be considered, especially in relation to training load and injury risk. The presence or absence of any injuries and the likelihood of recurrence will also be a factor and the sports physician and physiotherapist will need to liaise closely in such cases (see appendix vi and reference for a full description of medical complications of eating disorders).



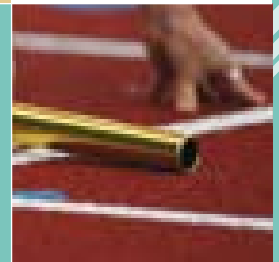
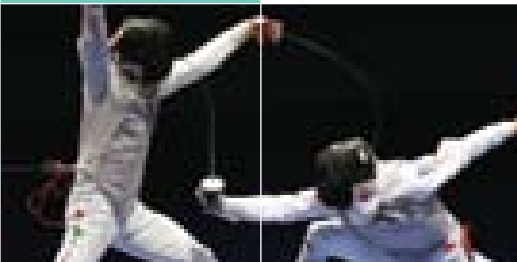
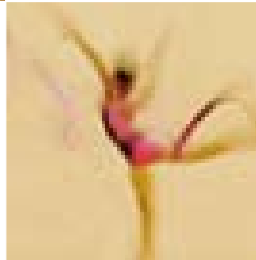
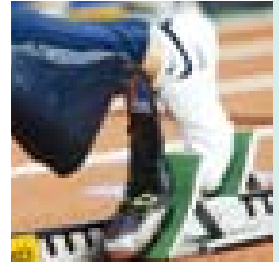


### Nutritional stability

Is the athlete able to maintain a stable enough weight and nutritional intake to cope with the increased energy demands of training?

### Abstinence from eating disorder behaviours

Eating disorder behaviours can include such things as restricting intake, undertaking extra or secret training, vomiting after meals or using laxatives and/or diuretics. Their continued presence would suggest incomplete recovery and would greatly influence the decision to return to training. In many circumstances it will be appropriate to allow a graded return alongside a graded reduction (rather than complete abstinence) from these behaviours.



### **Will sport exacerbate stress?**

This is among the most difficult judgements to make. If returning to sport is likely to exacerbate other problems in the athlete's life, for example, personal or family problems or academic pressures, then there is a higher risk of eating disorder behaviours resurfacing.

A useful approach can be to consider what steps are necessary to support the athlete with these pressures and to monitor the impact on the athlete's stress levels and the general state of their mood during the process.

### **Multi-disciplinary collaboration**

Clearly, a multi-disciplinary and collaborative approach is required to assess these variables and their likely impact. This is likely to involve any or all of the following: clinical psychologist, dietitian/nutritionist, physiotherapist, physician, psychiatrist and other members of the therapy team, whether NHS or private. Liaison with the therapy team may need to be indirect via the team doctor and would require the athlete's consent.

The decision making process is also a dynamic one and there is a need for ongoing evaluation of the athlete's stability as training is increased.

Holding an athlete to a pre-existing contract or agreement can be a useful way of ensuring that the right support and monitoring arrangements are in place and that the athlete is clear about what is expected of them.

# 12

DE-SELECTION  
AND EXCLUSION FOR  
MEDICAL REASONS





## 12 DE-SELECTION AND EXCLUSION FOR MEDICAL REASONS

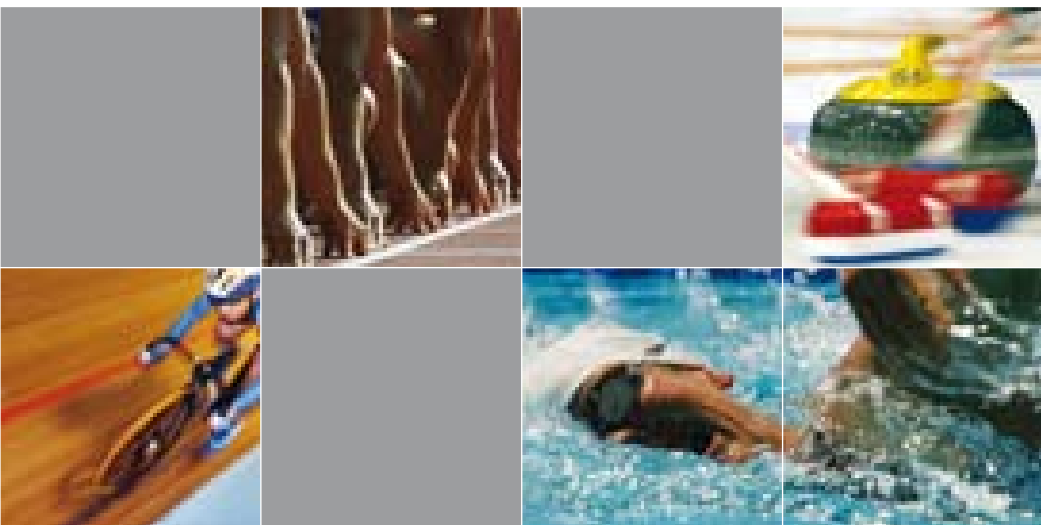
Although rare, athletes can, and should be, excluded from training and competition if there is an immediate danger to their health because of their medical condition. A physician (normally a team physician) can advise the team manager or performance director that the athlete is not fit to participate. In the case of eating disorders, there may be acute medical problems that would lead a doctor to make this decision. These might include electrolyte or ECG abnormalities or symptoms such as dizziness or fainting. In addition, more chronic problems related to an eating disorder, such as non-healing injuries, may reach a critical stage and necessitate an athlete being declared unfit to compete. (N.B. Whilst it is within the sports physician's and physiotherapist's remit to comment on medical fitness to train and compete (s)he is not in a position to comment on an athlete's likelihood of performing well.)

Decisions such as this are invariably taken in good faith and with the protection of the athlete as the highest priority. It can be helpful if the processes which lead to decisions such as this are made explicit to athletes in advance. Organisational codes of practice or individual athlete contracts can be useful ways of doing this.

Athletes may also be excluded from (official) training and competition if they break a 'Team Agreement'. The 'Team Agreement' may be generic or personal to the athlete and can cover any areas including their performance and their approach to maintaining weight. Such an agreement should be drafted to protect the best interests of the athlete with a view to optimising both their health and performance. The agreement may also be limited to selection.

There are two important principles in any such agreement. Firstly, that appropriate support should be made available to the athlete in the first instance and sanctions only implemented if this process is unsuccessful. Appropriate support could include arranging for a further assessment by, for example, a clinical psychologist, team doctor, dietitian/nutritionist, etc., and might include a recommendation that the athlete is helped to seek treatment. Secondly, any agreement should be consistent across a range of health problems and the criteria for deselecting an athlete who is injured should not differ substantially from the criteria used to de-select an athlete with an eating disorder (e.g., poor performance, health risks or not complying with an agreed treatment plan).

Thus, an athlete may be de-selected for immediate health reasons, when they under-perform secondary to an illness such as an eating disorder, or if they fail to reach pre-agreed pre-determined sports specific performance tests. N.B. At the Olympics an athlete can only be de-selected on medical grounds after the official Team Notification to the IOC.



# 13

APPENDICES



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# 13

## APPENDIX I: READING LIST AND WHERE TO GET HELP

### ➤ Nutrition for sport - further reading

#### Nutrition - Science

##### **The International Olympic Association Consensus Statement.**

Journal of Sports Sciences; 22(1), p1-146, January 2004.  
ISSN 0264-0414

##### **Sports Nutrition.**

##### **An Introduction to Energy Production and Performance**

Asker Jeukendrup  
Human Kinetics  
ISBN 0-7360-3404-8

#### Nutrition - Practice

##### **Food For Sport**

Jane Griffin  
Crowood  
ISBN 1-86126-216-7

##### **Fuelling Fitness for Sports Performance**

Samantha Stear  
Available through [publications@boa.org.uk](mailto:publications@boa.org.uk)  
or [www.trainforsport.co.uk](http://www.trainforsport.co.uk)  
ISBN 0-9501443-1-2

## ▶ Eating disorders & sport - further reading

### **Helping Athletes with Eating Disorders**

RA Thompson & RT Sherman (1993)

Human Kinetics

ISBN 0873223837

### **Disordered Eating Amongst Athletes: A Comprehensive Guide for Health Professionals**

KA Beals (2004)

Human Kinetics

ISBN 0736042199

### **Overcoming Anorexia**

Christopher Freeman (2002)

Robinsons

ISBN 0814727131

### **Bulimia Nervosa & Binge Eating: A Guide to Recovery**

Peter Cooper (1995)

Robinsons

ISBN 0814715230

### **Overcoming Low Self Esteem**

Melanie Fennell (1999)

Robinsons

ISBN 081472714X

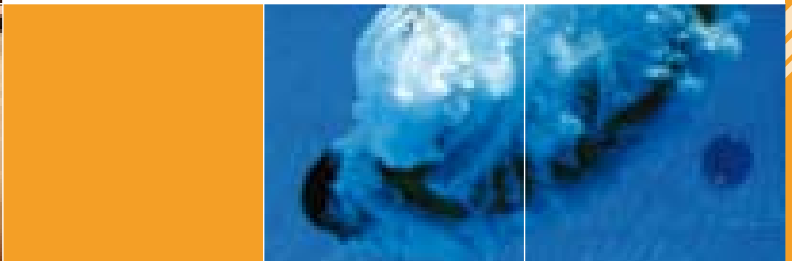
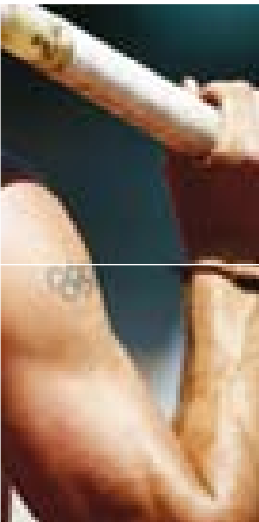
### **Getting Better Bit(e) by Bit(e)**

Ulrike Schmidt & Janet Treasure (1996)

Psychology Press

ISBN 0863773222

Leaflets written for Athletes, Coaches & Family and Friends available from EDA website at [www.edauk.com](http://www.edauk.com).





## Where to get help

### **Eating Disorders Association**

First Floor Wensum House  
103 Prince of Wales Road  
NORWICH NR1 1DW

Youth Helpline (Under 18 years): **0845 634 7650**

Telephone Helpline: **0845 634 1414**

**[www.edauk.com](http://www.edauk.com)**

**[www.something-fishy.org](http://www.something-fishy.org)** is an extensive resource often used by sufferers, carers and others.



## APPENDIX II: SCOFF SCREENING QUESTIONNAIRE

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Do you make yourself **Sick** because you feel uncomfortably full?

YES  NO

---

Do you worry you have lost **Control** over how much you eat?

YES  NO

---

Have you lost more than **One stone (7Kgs)** in a three month period?

YES  NO

---

Do you believe yourself to be **Fat** when others say you are too thin?

YES  NO

---

Would you say that **Food** dominates your life?

YES  NO

---

If the answer is yes to two or more questions, there is a possibility of an eating disorder. Please note that the questionnaire is only a guide. If an eating disorder is suspected it is important to seek further advice from your GP, a suitably qualified counsellor or the Eating Disorders Association (youth helpline for under 18s is **0845 634 7650**; regular helpline is **0845 634 1414**. Website address is **www.edauk.com**).



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## APPENDIX III: CO-EXISTING MEDICAL CONDITIONS AND ALTERNATIVE DIAGNOSES

From a medical and psychiatric perspective there are common clinical conditions that need to be considered in the clinical evaluation of a suspected eating disorder. The conditions listed below are alternative diagnoses to consider but can also co-exist with eating disorder syndromes as co-morbid disorders.

### Depressive disorders

Clinical depression is characterised by low mood, loss of interest, guilty thoughts and feelings, and hopelessness. The symptoms are persistent (lasting more than two weeks) and pervasive (occurring across a range of situations).

### Obsessive-compulsive disorder (OCD)

The key features of this condition are recurrent intrusive thoughts and compulsive behaviours or rituals, which extend beyond food, weight and body image. There is invariably considerable anxiety, especially in trying to resist the intrusive thoughts and prevent the compulsive rituals. There is also usually significant impairment of daily functioning.

### Substance misuse

Someone with a substance misuse problem will develop tolerance to the drug of misuse (e.g., alcohol) resulting in increasing use. They may experience cravings and will find it difficult to cut down. Withdrawal symptoms may also be present and drug use will begin to dominate and take over daily life. In the case of eating disorders, drug use will extend beyond the use of weight control drugs.

### Exercise dependence

Someone who is exercise dependent will lose the focus and goal orientation in their training programme that typifies an elite athlete. Secret and extra training will be undertaken and exercise will become an end in itself. The athlete is unlikely to be able to stop training even when this is clearly necessary (e.g., when injured).

### Body dysmorphic disorder

An inaccurate or exaggerated perception that a specific body part is ugly, often accompanied by a desire for surgery.

### Borderline personality disorder

Disorders of personality are enduring attitudes and behaviour patterns usually obvious in some form from adolescence onwards and persisting throughout adult life. The manifestation of a 'problem' may depend on the environment in which an individual finds himself or herself. For example, certain circumstances or occupations may benefit or worsen symptoms.

Borderline personality disorder is characterised by many or all of the following features:

- A poor and unstable self-image with chronic feelings of emptiness and low mood. There may be an irrational and unrealistic fear of being abandoned or let down by others and dramatic steps to prevent being 'abandoned' will be taken
- Multiple types of damaging impulsive behaviours. These can include impulsive eating as in bulimia, binge drinking or recurrent suicidal and self-harming behaviours (e.g., cutting)
- An unstable mood, particularly a tendency to becoming angry or even apparently 'paranoid', perceiving persecution or mistreatment when there is none
- Unstable relationships. Characteristically either idealising or devaluing others (never anything in between). Individuals may enter easily into relationships, which quickly become intense and just as quickly turn sour

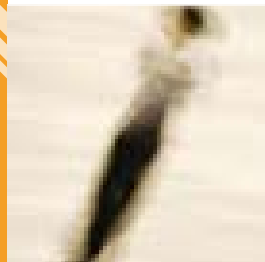


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## APPENDIX IV: INITIAL GENERAL MEDICAL WORKUP FOR EATING DISORDERS

Recommended screening investigations

- Full blood count
- Urea and electrolytes
- Glucose (random)
- Ionised calcium, magnesium, phosphate and zinc
- Liver function tests
- Thyroid function tests
- ECG esp. if electrolyte abnormality
- Oestrogen, Progesterone, LH, FSH (only necessary in bulimia if menstrual cycle is irregular)
- DEXA scan if amenorrhoea for more than one year





## APPENDIX V: GLOSSARY

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<b>AN</b>	Anorexia Nervosa
<b>BASES</b>	British Association of Sports & Exercise Scientists
<b>BMI</b>	Body Mass Index
<b>BN</b>	Bulimia Nervosa
<b>BPS</b>	British Psychological Society
<b>CBT</b>	Cognitive Behavioural Therapy
<b>CMHT</b>	Community Mental Health Team
<b>CPN</b>	Community Psychiatric Nurse
<b>CSP</b>	Chartered Society of Physiotherapists
<b>DEXA</b>	Dual-energy X-ray Absorptiometry (a special x-ray technique to measure bone density)
<b>ECG</b>	Electrocardiogram (a reading of the electrical beat of the heart)
<b>EDNOS</b>	Eating Disorder Not Otherwise Specified
<b>FSH</b>	Follicle Stimulating Hormone (hormone - varies cyclically in a normal menstrual cycle)
<b>GP</b>	General Practitioner
<b>HPC</b>	Health Professions Council
<b>IOC</b>	International Olympic Committee
<b>IPT</b>	Interpersonal Therapy
<b>LH</b>	Lutenising Hormone (hormone - varies cyclically in a normal menstrual cycle)
<b>NHS</b>	National Health Service



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## APPENDIX VI: MEDICAL COMPLICATIONS OF EATING DISORDERS

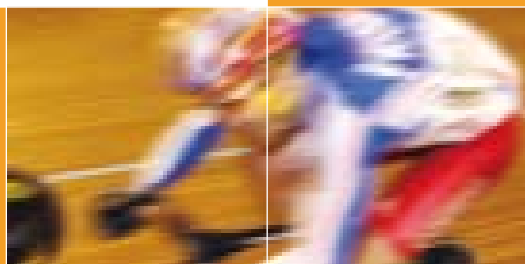
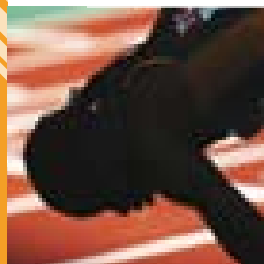
The medical complications that are associated with eating disorders are the result not just of weight loss but also of the type of weight control measures that are employed (for example vomiting, using laxatives or diet pills). Some complications are extremely medically serious, others merely uncomfortable, and some are a helpful pointer to a possible diagnosis for the careful and informed observer. A brief summary of some of the more important complications is given here. For a detailed account of all known medical complications please see the reference below.

### Cardiac complications

These can be serious and include cardiac arrhythmias, a slowing of the heart rate, and low blood pressure. These problems may be silent and only detected by ECG tracing or may present as dizziness, fatigue or faints.

### Gastro-intestinal complications

These are often uncomfortable rather than serious but may alert the careful observer to an otherwise hidden diagnosis. Constipation is common and vomiting can erode the dental enamel on the backs of teeth.



### Renal and electrolyte problems

These are particularly common if vomiting or laxative abuse is used as weight control behaviour. Acute electrolyte imbalance can be very serious and cause or precipitate cardiac arrhythmias. More chronic problems such as renal failure can also result.

### Osteoporosis

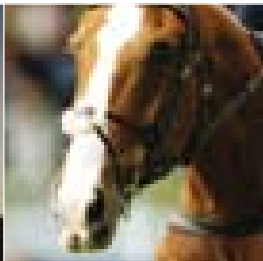
Loss of bone density is largely determined by the hormonal imbalance associated with calorie deficiency and amenorrhoea, rather than by specific deficiencies in calcium, for example. Bone density may never fully recover after prolonged spells of amenorrhea. In addition, exercise is only a partial compensation as it increases bone density to some degree in load bearing areas (e.g., the tibia in runners) but leaves the remainder of the skeleton unprotected.

### Haematological

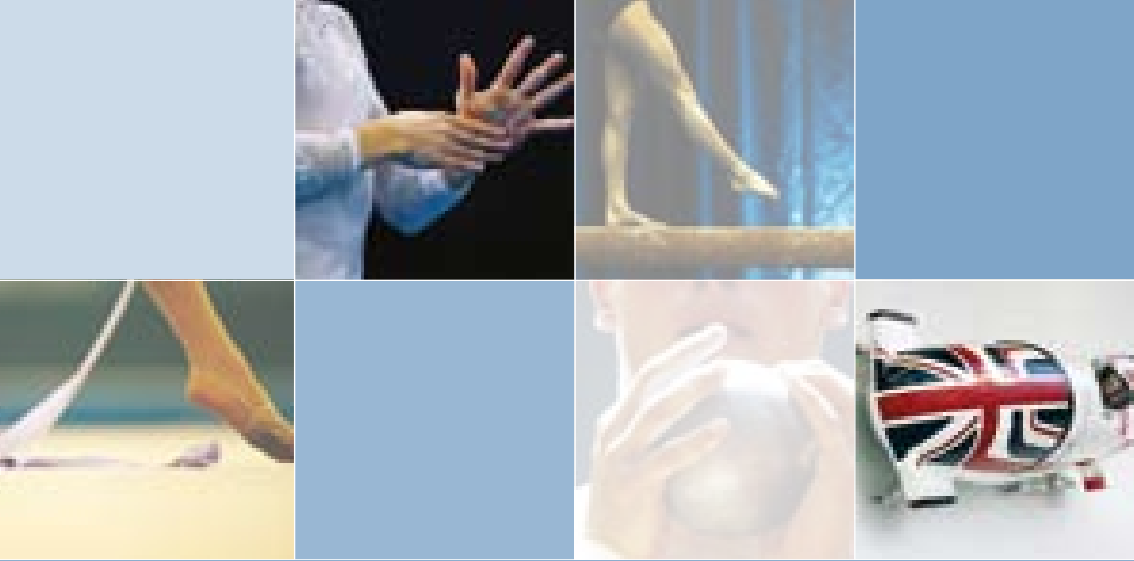
Other complications include low blood counts. About a third of anorexia sufferers have at least some degree of anaemia, about a third have low platelet counts and as many as two thirds may have low white blood cell counts with impaired immunity.

### Further reading

Sharp CW, Freeman CPL. The medical complications of anorexia nervosa. *British Journal of Psychiatry*, 1993; 162(4):452-62.







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