An overview of anorexia nervosa, bulimia and binge eating disorder

The term ‘eating disorder’ (ED) is used to describe problems associated with a person’s eating pattern. The most common EDs include anorexia nervosa (AN), bulimia nervosa (BN) and compulsive eating disorder (also known as binge eating disorder (BED)).

EDs are life-threatening conditions and this article will concentrate on the three major EDs mentioned above: AN, BN and BED. It will look at their characteristics, incidence, common triggers and factors, and the role the school environment and school nurses can play in early diagnosis and management.

Background
‘Eating disorders are characterised by an abnormal attitude towards food that causes someone to change their eating habits and behaviour’ (NHS Choices, 2013). EDs affect a person’s body, behaviour and thoughts. Many people with an ED are unhappy with their physical appearance. Some may feel driven to lose weight because they perceive themselves as being overweight, even when they have a normal body weight.

The populations most commonly affected by EDs are girls and young women aged between the ages of 15 and 25 years (Jongsma et al, 2012; Gilbert, 2013; Fairburn, 2013). EDs are popularly believed to affect only young females, but can also affect males and adults (Morgan, 2008). However, people within these populations are less likely to be diagnosed because of a lack of awareness or because they are less likely to come forward as a result of the stigma (Beat, 2010). While EDs often begin around adolescence when a lot of changes are happening in the body, some will develop it earlier or later in life—EDs have been found in children as young as 6 years of age and in adults in their seventies (Hoek and van Hoeken, 2003). People’s personality and past experiences, and societal influences are some of the factors that can increase the likelihood of a person developing an ED (Warbrick, 2008; Gilbert, 2013).

EDs interfere with people’s normal day-to-day living, such as: work, education, relationships and family life (Fairburn, 2008; 2013).

EDs are not an indication of poor parenting (Treasure, 2009), nor lifestyle choices, but serious life-threatening conditions, which can affect a person’s emotional and physical health, social life and achievement (Bendelius, 2005; Jongsma et al, 2012). People with EDs may set and follow procedures and rules around food which can be comforting on the one hand and destructive on the other hand (National Eating Disorder Association (NEDA), 2012).

Incidence
Though there is a lack of data with regards to the exact figure of people suffering from ED in the UK, the National Institute for Clinical Excellence (NICE, 2004) suggested that around 1.6 million people in the UK are affected by ED, of which 11% are male (however, this proportion might be much higher as suggested by a 2007 survey (Beat, 2010)).

An estimated 10% of people with ED have anorexia, 40% have bulimia and the other 50% have BED or other EDs (Beat, 2010). It has been estimated that EDs affect up to 6% of adolescents (Hoek and Van Hoeken, 2003).

According to the NICE (2004) guidance, approximately 1 in 250 females will suffer from AN in their lifetime in comparison to 1 in 2000 males; while 5 times those numbers of men and women will develop BN.

The incidence of eating disorders has been increasing since 1950, according to Hudson et al (2007). Since 1930, each decade has seen a rise in AN in young women aged 15 to 19, and between 1988 and 1993, BN in women aged between 10 to 39 years tripled (Hoek and Van Hoeken, 2003).

Anorexia nervosa
AN is a condition characterised by a compulsive need to achieve a low body weight by avoiding certain foods...
Table 1. Warning signs

<table>
<thead>
<tr>
<th>Anorexia nervosa</th>
<th>Bulimia nervosa</th>
<th>Binge eating disorder</th>
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<tr>
<td>Interest in diet books</td>
<td>Binge eating</td>
<td>Eating faster than usual</td>
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<td>Sudden decision to become vegetarian</td>
<td>Disappearance of large amounts of food in short periods of time</td>
<td>Eating past the point of fullness</td>
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<td>Visiting pro-anorexia or ED websites</td>
<td>Finding food and laxative packages/wrappers in bins</td>
<td>Eating in secret—when sad, bored, anxious, happy, stressed</td>
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<td>Increased picky eating and eating healthy foods/eliminating certain type of foods like carbohydrates, meat and so on</td>
<td>Frequent trips to bathrooms after meals</td>
<td>Restricting foods that are thought to be fattening</td>
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<td>Rigid exercise regime</td>
<td>Signs or smells of vomit in bathroom</td>
<td>History of exposure to negative messages about shape, eating and weight</td>
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<tr>
<td>Sudden onset of loss of appetite</td>
<td>Rigid exercise regime</td>
<td>Feeling upset/guilty after over-eating</td>
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<td>Refusal to maintain body weight</td>
<td>Discoloration of the teeth</td>
<td>Over-compensating for over-eating by dieting</td>
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<td>Intense fear of gaining weight or becoming fat</td>
<td>Withdrawal from social circles</td>
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<tr>
<td>Bad sleeping habits</td>
<td>Compulsion to calculate calorie intakes</td>
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<tr>
<td>Withdrawal from social circles</td>
<td>Unusual food rituals (e.g. cutting into tiny pieces, chewing very slowly)</td>
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<tr>
<td>Frequent trips to bathrooms after meals</td>
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<tr>
<td>Source: Lock and Le Grange, 2005; Costin, 2007; Coker-Ross, 2009; Jade, 2009; Grilo and Mitchell, 2010; Jade, 2010; Fairburn, 2013</td>
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that are deemed to be fattening (Treasure, 2009). AN can be linked to low confidence, perfectionism and other life stressors; it can also be ascribed to both cultural and personal factors such as family conflicts, high pressures to succeed and poor communication (Costin, 2007; Jade, 2009; Treasure, 2009).

To avoid weight gain, individuals with AN may use food restrictions, excessive exercise and self-induced vomiting (Bendelius, 2005). The body is denied essential nutrients that are needed to function normally, hence the body slows down all its processes to conserve energy (Lask and Bryant-Waugh, 2007; Treasure, 2009). Individuals with AN may undergo specific rituals when eating such as chewing very slowly and cutting food into very small pieces (Warbrick, 2008; Gilbert, 2013).

**Bulimia nervosa**

BN is an eating disorder distinguished by bouts of overeating (when someone with the condition feels they have lost control over their eating) followed by self-induced vomiting, dietary restrictions or excessive exercise to avoid weight gain (Bendelius, 2005; Jongsma and Bruce, 2012). BN can be accompanied by self-harming and risk-taking behaviours like cutting, alcohol/drug abuse and overdosing (Lask and Bryant-Waugh, 2007).

People with BN may binge on junk foods until the urge to eat is gone, the tension is reduced or they are interrupted; they often eat to the point of feeling pain (Lask and Bryant-Waugh, 2007). They may enjoy the food but it is often consumed very quickly; this will then be followed by attempts to get rid of the calories ingested through laxative use and vomiting (Costin, 2007; Mehler et al, 2010).

**Binge eating disorder**

BED is characterised by habitual eating and is the most common type of ED (Fairburn, 2008). Sometimes people with BED feel they have no will-power around food and may therefore eat in secret because of a sense of guilt. They may also pick continuously at small amounts of food (Coker-Ross, 2009; Fairburn, 2013).

According to Grilo and Mitchell (2010), BED is a blend of genetic, biological and environmental factors. The condition is diagnosed by the number of binge-eating days not episodes. People with BED tend to be overweight or obese, hence it is imperative that assessment and treatment should look at obesity associated illnesses in order to manage coexisting issues as well (Coker-Ross, 2009; Grilo and Mitchell, 2010; Fairburn, 2013).

**Factors and triggers**

There are a number of social, emotional and psychological risk factors that may contribute to the development of an eating disorder in children and young people (Table 2). These may be general and widespread factors linked to cultural and societal influences. For example, stress related to racial, ethnic, prejudice or other forms of discrimination and narrow interpretations of beauty, which only include men and women of certain body weights and shapes, are social factors that may contribute to the development of an eating disorder (NEDA, 2012).

Factors can also be specific to the individual and linked to his or her personal history. For example, life events such as bereavement, parental divorce, change of schools or moving house may increase the risk of developing an eating disorder in some people (Goodheart et al, 2012).

Below are a number of potential triggers (Lask and
Bryant-Waugh, 2003; Lock and Le Grange, 2005; Fairburn, 2013):

- Food addiction
- Bad habits around food (e.g. comfort eating)
- Lack of will power
- Body image problem
- Deeper emotional issues/moodiness
- Stress
- Low self-esteem/self-dislike
- Difficulty managing feelings or expressing their needs
- Desire to be liked or loved
- Personality disorder/excessive perfectionism
- Alcohol/drug abuse
- History of personal trauma.

To people with eating disorders, the condition may be their only avenue to express their inner pain, get attention, suppress difficult to manage emotions, unite disintegrated family structure, manage anxiety, avoid sexual maturation when unable to cope, be in control or be perfect when desperately feeling imperfect in other ways (Jade, 2010; Fairburn, 2008; Fairburn, 2013).

Media influence
Media is a socio-cultural determinant in people's awareness of the relationship between food and weight. Advertisers seek to inform, persuade, entertain and direct our experience of the world through their products (Tribole and Resch, 2012; Fairburn, 2013). The media may contribute to individuals feeling bigger than they are through the portrayal of attractive slim models as an ideal, which can result in the development of unnecessary anxieties (Tribole and Resch, 2012). Particularly in teenagers, as puberty coincides with the time when young people are increasingly exposed to television images, fashion and beauty magazines which idealise thin bodies, and which they may start looking up to (Warbrick, 2008; Fairburn, 2013).

Potential impact of eating disorders

Physical impact
Starvation affects all parts of the body (e.g. muscles, digestive tracts, heart, brain, immune system). It may affect people's sensitivity to heat or cold and lower their resistance to illnesses (Lock and Le Grange, 2005). Starvation can also lead to easy bruising and circulation problems, which may result in skin discolouration and possible ulcers in their legs and feet (The National Centre for Eating Disorders, 2012). Their body may be covered in fine hair due to their low weight and they may feel dehydrated, constipated or have abdominal pains due to starvation (Goodheart et al, 2012; Fairburn, 2013).

Bone formation is established in adolescence, so if this process is damaged it can lead to osteoporosis and stunted growth.

Reproductive organs in men and women may be affected. Female individuals with an ED may stop menstruating and their fertility may be permanently damaged (Fairburn, 2008; Fairburn, 2013; Goodheart et al, 2012; Jade, 2009).

Frequent fluctuations in weight may lead to lack of energy, swollen salivary glands, oedema, lethargy, tiredness, and difficulty sleeping (Fairburn, 2008; Fairburn, 2013).

The use of laxatives and vomiting can irritate the gastro-intestinal tract (NEDA, 2012). Bingeing and purging causes instability in blood sugar levels; leading to fatigue, depression, sore muscles, faintness, sensitivity to cold and weight (Grilo and Mitchell, 2010). Dehydration might cause electrolyte imbalance and imbalance of essential minerals in the body due to loss of potassium and sodium from the body through purging (NEDA, 2012; Fairburn, 2013). Excessive vomiting could lead to the drying up of the salivary glands, resulting in painful swallowing, heartburn, tooth decay, bad breath, swollen hands and puffy cheeks; this can cause severe damage to the stomach, oesophagus, teeth and bowel, and increases the risk of heart problems (Smith et al, 2014; NEDA, 2012; Costin, 2007). People with BED are at risk of high cholesterol, obesity, diabetes, musculo-skeletal problems, heart disease and high blood pressure (Smith et al, 2014; Fairburn, 2013).

<table>
<thead>
<tr>
<th>Table 2. Examples of risk factors that can contribute to the onset of eating disorders</th>
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<tr>
<td>EDs, depression or addictions might run in the family</td>
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<td>High expectations to succeed, when too much demand might be placed on the sufferer educationally or in other ways</td>
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<td>Being teased about looks or shape or exposed to dieting behaviours in the family</td>
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<td>Feeling special, competent and/or different</td>
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<td>Trying to please others or being too sensitive to other people's feelings</td>
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<td>Having an obsessive personality</td>
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<td>Having experienced unwanted sexual attention when young</td>
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<tr>
<td>Having experienced stresses like deaths, illness, trauma, loss, separations and disappointments, abuse, neglect or abandonment in childhood</td>
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<td>Sexual identity problems in males</td>
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<td>Obesity in childhood or early onset of puberty</td>
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<td>Troubled family relationships</td>
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<td>Having a friend with an ED</td>
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<td>Intense fear of gaining weight</td>
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<td>Being inflexible and feeling worthless</td>
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<td>Experiencing difficulty in expressing feelings and trying too hard to please others</td>
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<tr>
<td>Having a strong will to be in control</td>
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<td>Social isolation</td>
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Sources: Jade, 2009; Treasure, 2009; Coker-Ross, 2009; Fairburn, 2013; Shiltz and Cadcill, 1994 in NEDA (2012)
A low pulse rate and irregular heart beat may occur due to a weakened heart. Slow digestive tracts may cause feelings of bloating and fullness; skin becomes dry and orangey, showing early signs of ageing. Hair loss is not uncommon. People may also become restless and unable to sleep easily (Fairburn, 2008).

The long-term effects of EDs on health, reproduction and life expectancy are substantial (NEDA, 2012; Fairburn, 2013).

Psychological and social impact
Brain chemistry which influences appetite and mood is disrupted by purging, which depresses levels of serotonin in the brain (responsible for regulating cravings for carbohydrates and regulates our mood) (NEDA, 2012). Starvation affects mood and wellbeing, rational thinking and ability to concentrate; hence people with EDs can suffer from depression, anger outbursts, anxieties, and panic attacks (Goodheart et al, 2012). In some cases, individuals may start hearing voices, become forgetful and may start misinterpreting everyday events (Lock and Le Grange, 2005). Levels of endorphins and dopamine (centres of the brain) responsible for self-worth, pain and emotional balance can also be affected (Fairburn, 2013).

Strategies for prevention
Although there is little evidence for school-based interventions to prevent EDs, there are still a number of measures that can be taken, particularly within families, to help children and young people who have been identified as at risk of developing an eating disorder (Shiltz, 2002; Daglish and Nutt, 2013; Fairburn, 2013):
- Body shape must never be emphasized as an indication of a person’s worth
- Children and young people must be taught about nutrition, positive body image, and healthy physical activities
- Education and awareness training through health promotion, training on ED and public health campaigns
- Families must be guided through challenges of growth and individualisation.

It is important that families promote self-esteem and encourage their children to find healthy ways to manage unpleasant feelings such as stress, depression, anger, loneliness, self-loathing, and avoid power struggles about eating by focusing on feelings and relationships not weight and food (Jongsma and Bruce, 2012; Smith et al, 2014).

Children should be taught not to perceive the thin images portrayed by the media as an ideal (Tribole and Resch, 2012). They must learn to focus on their own unique qualities not related to appearance and realise that body size, shape and weight does not make a person’s identity (Beat, 2010). They need to surround themselves with people who remind them of their inner strength and beauty, and recognise the fact that bodies come in different shapes and sizes. They must be supported to see exercise and healthy eating as a part of normal self-care (Lock and Le Grange, 2005; Costin, 2007; NEDA, 2012).

Treatment
The following steps should be taken for early intervention in suspected cases of eating disorders (Lock and Le Grange, 2005; Shiltz, 2002; Fairburn, 2013):
- Identifying the problem early before it becomes severe
- Noticing changes in growth, weight and vital signs
- Sharing problems with other professionals for quick intervention
- Developing strategies to manage the problems once noticed
- Referring the individual for therapy
- Educating him or her about positive benefits of treatment
- Monitoring medical status and keep him or her stable
- Providing compassion, consistency and care.

People with EDs must first acknowledge that they have problems with food before treatment can commence. Treatment involves giving up dieting and eating regularly to achieve a healthy weight, as successful treatment is dependent on a healthy relationship with one’s body and health (Grilo and Mitchell, 2010; Costin, 2007). Goodheart et al (2012) describe the main aims for ED treatment as: developing healthy eating behaviours, maintaining a healthy weight and learning healthier ways of coping. Restoring health must be a gradual process.

Jongsma and Bruce (2012) emphasize the importance of multi-interventions focused on lifestyle, diet and exercise through healthy eating, reasonable weight targets, behavioural skills and training on communication, problem solving and relapse prevention. Though many treatment programmes do not support parental involvements, family involvement is crucial to individuals’ quick return to health and can help prevent relapse (Lock and Le Grange, 2005; Lask and Bryant-Waugh, 2007).

NICE (2004) guidance advises self-help for less severe cases of ED but treatment must focus on managing weight gain and dealing with eating symptoms. Interventions should include cognitive behaviour therapy (CBT), psychotherapy, behavioural weight control and pharmacotherapy; though each of these have their disadvantages. The right approach for each person depends on symptoms, strength and severity of the ED, hence treatments must address both the physical and psychological aspects of the problem (Fairburn, 2008; Fairburn, 2013).

Most NHS trusts only provide a service for serious cases of EDs due to demand, as there might be long waiting lists in non-specialist mental health units (Grilo and Mitchell, 2010).

Jade (2009) recommends early treatment before too much weight is lost for better outcomes, as she believes that best outcomes are based on therapies which strengthen the individual by allowing him or her to mature and lead a fulfilling life.
The usefulness of force-feeding is uncertain and the method is controversial; however, it can be used if individuals are at risk of death. Complications are rare, but common side effects may include haemorrhage, emphysema and oesophageal perforation (Jade, 2009; Grilo and Mitchell, 2010).

According to Grilo and Mitchell (2010), there are four stages of treatment for EDs:

- Hospitalisation if there is a rapid decrease in oral intake and weight, or there are other problems affecting the person's capacity to eat
- Partial hospitalisation to address the cognitive characteristics of ED and minimise the risk of relapse; it is offered to people discharged from hospital who had regained 85% of their original weight back
- Outpatient treatment is the third stage which provides more socialisation and interactions in a real world
- CBT, which is used for depression, has been adapted for use with EDs. Its aim is to bring about changes in individual's behaviour. The three stages of CBT treatment include restoration of a healthy weight, supporting people with EDs and understanding the root cause of the ED (NEDA, 2012; Treasure, 2009).

CBT for people with eating disorders can be divided in four phases (Mehler et al, 2010):

- Phase 1—Assessing and motivating people with EDs to promote engagement in their treatment
- Phase 2—Focusing on individual's beliefs and behaviours with regards to eating habits and weight gains
- Phase 3—Addressing other issues beyond eating and weight
- Phase 4—Reviewing the course of treatment, reinforcing the gains and supporting people individually after the end of the therapy.

NICE (2004) recommends a trial of selective serotonin reuptake inhibitors (SSRIs) to control symptoms of purging. But it is less successful in dealing with bulimia and there is a high risk of relapse if drugs are given without ED therapy as drugs are only useful to stabilise individuals with severe symptoms (Keel and McCormick, 2010).

A holistic therapy is essential, and emotional and trauma work is necessary for people with a history of bullying, abuse or neglect (Jade, 2010).

Overall, there is no strong evidence to suggest that one treatment is better than the other but family involvement is considered as vital to prevent relapse (Lask and Bryant-Waugh, 2007).

**School staff**

School staff members can support children and young people with EDs by (NHS Foundation Trust for Gloucestershire, 2003):

- Monitoring of young people's educational, social, behavioural, physical and emotional well-being within school
- Identifying worrying signs and discussion with the headteacher
- Discussion with young people and parents the concerns and need for referral to school nurses
- Referral to school nurses
- Support to other concerned pupils regarding a friend with an ED.

**School nurse**

School nurses have an important role to play in early diagnosis and prompt referral, which is crucial to the treatment of EDs. School nurses can help with the prevention, diagnosis and management of eating disorders by (Coombs, 2011; NHS Foundation Trust for Gloucestershire, 2003):

- Being aware of confidentiality issues regarding sharing of information with other health professionals
- Assessing eating patterns of children and young people with eating disorders
- Carrying out baseline height and weight measurements
- Talking with parents and seeking consent
- Liaising with school staff to share information
- Referring to child and adolescence mental health services (CAMHS)
- Liaising with GP and CAMHS (send copy of CAMHS referral letter to GP)
- Continuing to see the child or young person while awaiting CAMHS assessment
- Providing training on ED to staff and pupils and leaflets and posters within school and community
- Supporting teachers, pupils and parents as needed
- Familiarising themselves with local/national policy on ED.

**Conclusions**

There is still a stigma attached to EDs, which can hamper early diagnosis and intervention.

Finding the right eating pattern for every individual is crucial. Treatment is about tapping into the positive hidden qualities in a person which involves the whole person nutritionally, physically, emotionally and spiritually; this must include the whole family to achieve maximum benefit.

School nurses are central to managing EDs within the community and in schools. They have an important role to play in early diagnosis and prompt referrals, which is crucial to the treatment of EDs.

Community-wide education by health visitors and school nurses about nutrition and diet at developmental stages from infancy to adulthood can reduce the incidence of EDs in the community.

More research is needed to help develop treatments and

**Professional roles and responsibilities**

Fairburn (2008) indicated that attempts to prevent the development of EDs within schools have proven ineffective and research on whether early intervention in schools can improve detection and recovery rates is still lacking. However, school staff and school nurses still have important roles to play in early detection and intervention.
effective prevention strategies that could help children and young people with eating disorders manage their feelings without turning to food, in order to maintain a balanced relationship with food.

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