Nutrition, health and schoolchildren

Mental health

Cognitive function

Experts believe that nutrition and diet may influence cognitive function.

**Breakfast**

Breakfast consumption in young people has been associated with some improvements in problem solving, attention and episodic memory and in complex visual display tests. The effect has been suggested to be more obvious later in the mornings.

Breakfast clubs in schools have been suggested to have a small but positive impact on a selection of educational outcomes. Improvement has mainly been observed in mathematics or arithmetic scores, which has been suggested to be due to decreased absenteeism when children attend breakfast clubs. Studies on breakfast clubs were mainly carried out in schools with a high proportion of children from low socioeconomic backgrounds. Benefits have been found in children from all socioeconomic groups including those with generally good diets, although these are more apparent in children whose nutritional status is compromised.

**Omega-3 fatty acids**

Although a number of studies have investigated the effect of omega-3 fatty acids on cognitive performance in children, current evidence does not suggest that taking omega-3 supplements in healthy children has significant effects on cognitive function and performance.

Although some studies have suggested that omega-3 supplements may have a positive effect on some aspects of cognitive function (i.e. working memory) in children with attention deficit hyperactivity disorder (ADHD), overall, evidence for a beneficial effect is weak and limited at present.

**Vitamins and minerals**

There is evidence that deficiency of some nutrients, e.g. iron deficiency anaemia, can lead to impaired cognitive function. Iodine, iron, zinc and vitamin B₁₂ have been linked to cognitive processes in children. Low magnesium levels have been reported in children with ADHD. However, there is insufficient evidence to draw conclusions about the effect of vitamin and mineral supplementation on the IQ score of schoolchildren.
Depression and anxiety

Depression can affect people at all life-stages. Mood changes typically include sadness and/or irritability accompanied by a loss of pleasure in most activities. Young people with depression also typically have low self-esteem.

Some nutrients including omega-3 fatty acids and folate have been associated with depression (studies mostly in adults). These nutrients tend to be low in the diets of people who are depressed. Some studies have suggested that omega 3 supplementation may decrease depressive symptoms, although overall the evidence for this is unclear. A link between depression, unhealthy eating and obesity has also been suggested through two possible mechanisms. Obesity is linked with poor body image which may lead to depression, or depression may lead to over-eating which may then lead to obesity.

Physical inactivity has been linked to depression and anxiety in young people. Recent evidence suggests that exercise seems to have a small positive effect in reducing depression and anxiety. However, it may be difficult to encourage some young people to engage in physical activity. For example, those who are less confident about their appearance, particularly girls, may avoid taking part in exercise due to anxiety about other people’s judgement of their body.

Eating disorders

Eating disorders have typically been seen in adolescent girls and young women. However, there is an increasing prevalence in males and children of younger ages suffering from these illnesses. Eating disorders are psychological disorders. Underlying problems need to be treated by trained, expert multidisciplinary teams.

Anorexia nervosa is a serious illness where people keep their bodyweight abnormally low by dieting, vomiting and/or exercising excessively leading to extreme weight loss. Effects include loss of muscle and bone strength, periods stopping, and in severe cases death. It may also cause stunted growth in children and young people.

Bulimia nervosa sufferers believe they have lost control over their eating and so begin a cycle of binge eating, followed by vomiting, taking laxatives and diuretics, or excessive exercising and fasting with the aim of preventing weight gain. The bodyweight of bulimia sufferers is often normal. However, their behaviour can lead to tiredness, bloating, constipation, stomach pain, irregular periods, or occasional swelling of the hands and feet. Excessive vomiting can cause erosion of the teeth, and misuse of laxatives can seriously affect the heart.

Previously, the term ‘eating disorder not otherwise specified’ (EDNOS) was used to diagnose people who showed some elements of anorexia nervosa and/or bulimia nervosa but who were not strictly classified as either as they didn’t meet all of the criteria. However, since 2013 the diagnostic criteria no longer uses this term and so people would now be diagnosed with anorexia, bulimia or binge eating disorder. The change was brought about to ensure that people received a diagnosis that more accurately described their symptoms and behaviours.