

Gastrointestinal Problems in Eating Disorders

Changes to digestion.

Individuals with eating disorders may experience a variety of gastrointestinal symptoms, all of which are believed to be caused by malnutrition and underuse of the gastrointestinal tract. Chronic under eating actually causes the muscles of the small and large intestine, which churn and digest foods, to atrophy. It is common for sufferers to experience stomach aches, wind and bloating as food sits in the Small intestine for longer than usual due to a mixture of reduced organ size & a reduced production of enzymes & hormones required to promote digestion. Normal digestion usually takes 1.5 hours, however in a starved state this can take between 4-5 hours initially following starvation. The constipation & bloating clients often suffer from is frequently misinterpreted as fullness of the stomach, a feeling often used to rationalize not eating.

It's important to remember that all of these things will pass, and are not reliable indicators of what the recovered state will be.

Constipation

Inadequate food intake additionally affect your bowels. The little amount of food and fluid passing through the body can result in constipation as the bowel needs enough food and fluid within it to be able to push the contents along and keep regular. Without adequate food and fluid intake, your gastrointestinal system (GI system), goes on vacation. Therefore, even small quantities of food can leave you feeling bloated and uncomfortable when you are refeeding.

Low Blood Pressure, Dizziness, Hypothermia, and Poor Concentration

Anorexics also often experience dizziness and low blood pressure, which can lead to fainting spells. Fainting spells can show up even before the individual has lost a significant amount of weight, and can be dangerous.

Another frequently-seen symptom, loss of too much of the body's essential fat stores, causes hypothermia, or low body temperature, which in turn will cause the anorexic to feel cold when everyone else is comfortable, and require layers and layers of clothing to feel warm. Another fact which may explain temperature changes, is that often eating disorders can also lead to low levels of thyroid hormones (hypothyroidism) and people will often feel cold and complain of constipation or dry skin.

Other common symptoms are lethargy, apathy, and poor concentration. For reasons that are not well understood, most anorexics are able to concentrate on academic schoolwork, but may have difficulty following a simple conversation.

Energy Use in The Body

The body's main source of energy comes from a substance known as glucose. Glucose is most readily available from carbohydrate foodstuffs e.g. bread, rice, pasta, cereals & simple sugars which can be easily broken down into glucose & absorbed directly into the bloodstream during digestion.

Over the first few hours of starvation, blood glucose and insulin levels both drop. This signals the body to break down glycogen (stored supplies of glucose in liver & muscle) releasing it into the bloodstream. In addition, the body starts mobilizing fat from fat cells to use for fuel & breaking them down into simple fatty acids. After 12-18 hours or so, liver glycogen stores become depleted. At this point blood glucose will drop to low-normal levels and stay there. Blood fatty acids will have increased significantly by this point & generally within a day or so, most cells in the body, with a few exceptions, are using fatty acids for fuel.

A major consideration in this process, is the parts of the body, which rely on glucose as their main source of energy as unlike other tissues & organs within the body, they cannot use fat as a source of energy. These include the brain & central nervous system which equate to approximately 25% of the body's glucose consumption.

The body has one clever method of tackling this which involves a process known as gluconeogenesis. This involves using a complex chain of reactions & enzymes to break down fatty acids & protein amino acids & convert them into glucose. As the body does not have any stores of protein aside from physical muscle & tissue, this is where the protein amino acids come from. In turn, the body starts eating its own lean body mass to make glucose. As a by product when fatty acids are broken down, & ketones are produced this can cause increased acidity within the bloodstream. When protein is used to fuel the body not only muscles are used up, but enzymes, hormones & brain chemicals also start to be produced in smaller quantities to conserve energy & reduce metabolic rate to slow the effects of starvation on an individual.

When the body starts to switch from gluconeogenesis back to using glucose from foodstuffs, the body may not have sufficient production of insulin (a hormone) if carbohydrates have been avoided for a while or thiamine. Additionally there is a surge in fluid due to rehydration of the individual, metabolic changes which in turn can significantly affect electrolyte levels in the bloodstream hence refeeding vitamins are prescribed for all patients at risk of refeeding as standard practise.

Effects on metabolism

Metabolism refers to the set of chemical reactions which happens within the body to allow us to grow, maintain energy levels and respond to the environment around us. Several hormones are involved in regulating the body's metabolism, many of which are severely affected by eating disorders. These hormonal changes are an appropriate response to starvation and will serve to save energy.

Hypermetabolism is the physiological state of increased rate of metabolic activity. This typically occurs after significant increase in stress to the body e.g. infections, sepsis, burns, multiple trauma, fever, surgery bone marrow transplants & eating disorders

Starvation involves metabolic alterations that enhance the chance of survival by increasing the use of body fat stores, by sparing the use of glucose, by minimizing nitrogen loss, and by decreasing energy expenditure. (see handout on Starvation).

But when the ill person begins eating again, their metabolism kicks into high gear. Body temperature rises. A person can experience night sweats, which can be attributed to the body restoring & repairing its muscle stores, organs & hormonal levels when the body is at rest.

During the Minnesota Starvation Study, the basal metabolic rate (BMR - the amount of calories needed just to keep your body functioning and doesn't include ANY physical activity) fell by about one-third.

Effects on stress hormones

Eating disorders can stimulate the production of the so-called 'stress hormones' which include cortisol, growth hormone and noradrenaline. These hormones are usually released in higher concentrations at periods of high stress and can lead to sleep problems, feelings of anxiety, depression and panic. Similarly, there is a strong physical response including an increase in heart rate and rate of breathing.