

## Refeeding Syndrome

### **What is refeeding syndrome?**

Refeeding syndrome is a collection of metabolic disturbances which can occur when someone who is starved or severely malnourished begins to increase their nutritional intake. In the starved body there is a breakdown of fat and muscle, insulin secretion is suppressed, and many electrolytes are depleted (such as potassium, magnesium and phosphate). When you start to eat more, insulin secretion is resumed, resulting in increased glycogen, fat and protein synthesis. This rapidly uses up the depleted minerals. The movement and depletion of these crucial minerals can cause a variety of clinical complications with the heart, lungs, gut, muscles and nerves.

Refeeding syndrome can be easily managed by following the advice below. However, if it is not managed, refeeding syndrome can lead to cardiac failure and can be fatal.

### **What can I do about it?**

To try and get healthier and regain some of your lost weight (or to stop losing weight), you need to increase your food intake. However you need to do this slowly to minimise health risks.

To prevent refeeding syndrome you will need to:

- 1) Get a prescription for several vitamins from your GP and start taking them ASAP, initially for one month. This will be for:
  - 300mg thiamine (one of the B-vitamins) daily (3 x 100mg tablets per day)
  - 1-2 tablets Vitamin B Co-Strong 3 times per day
  - 1 tablet daily of a balanced multivitamin e.g. Forceval, Sanatogen, or Centrum
- 2) Have a blood test to test your electrolyte levels BEFORE starting to increase your food intake. You will need to repeat this at least once a week for minimum of 3 weeks. If your electrolyte levels are low, you may need to take an additional supplement prescribed by your GP.
- 3) Introduce small amounts of carbohydrate at a time and increase your intake slowly. The danger of increasing your intake too quickly (or of bingeing) is that your electrolyte levels can drop very quickly. It is recommended that you make the following changes under the guidance of a specialist dietitian:
  - Use your current intake as a baseline and add small amounts to it every 2-3 days in discussion with your clinician. The aim is to meet your requirements in 1-3 weeks.
  - Choose starchy carbohydrates (e.g. bread, potato, pasta, rice) rather than simple carbohydrates.
  - If you are not eating carbohydrates, start by introducing  $\frac{1}{4}$  carbohydrate portions at meals, then increase to  $\frac{1}{2}$  portions once your blood tests show your electrolytes are normal, and keep increasing until you are having normal portion sizes.

- Avoid use of sugar and artificial sweetener (including supplement drinks such as Fortisip/Ensure Plus) as they are high in simple carbohydrates.
- 4) Be honest with your clinician about what you are eating, to reduce the risk of refeeding syndrome. It would be helpful for you to keep a food and fluid diary, in particular for the first 3 weeks.

### **What are the symptoms of refeeding syndrome and how can I minimize them?**

**1) Fluid retention** – if you have been avoiding carbohydrate, it is likely that your body will be dehydrated. Since carbohydrate holds on to water, upon eating carbohydrate-rich foods (e.g. bread, rice, pasta, potatoes) you may initially retain more fluid and feel bloated. Severe starvation may also weaken the stomach wall and lead to water being drawn from the body into the stomach after eating. This can cause nausea, diarrhoea and, occasionally, light-headedness. Starvation can also result in low protein levels in the blood, which can cause water to be drawn into the body's tissues leading to fluid retention. All of these effects can lead to bloating and rapid initial weight gain (especially if you have been vomiting/abusing laxatives regularly). This can be distressing but usually resolves within 7-10 days.

#### ***What to do to help:***

- Avoid excessive salt (as this holds onto water)
- Aim to have a portion of protein at least twice a day (e.g. meat/fish/eggs/cheese/beans)
- Aim to initially include  $\frac{1}{4}$  -  $\frac{1}{2}$  carbohydrate portion at each meal
- Don't stop eating & don't avoid carbohydrate - this is what has caused it in the first place!

**2) Low Potassium levels** – this can occur through excessive vomiting or laxative abuse, or can occur if you have been eating a very restricted diet. Low blood levels of potassium can lead to muscle weakness and abnormalities in heart rhythm.

#### ***What to do to help:***

- Aim to include at least 600ml (approx 1 pint) milk per day
- Include your 5-a-day of fruit and vegetables

**3) Low Phosphate levels** – your body uses carbohydrate stores for energy. In this process, phosphate and other electrolytes move into the body cells, which can lead to low levels of phosphate in the blood. This can cause cardiac and respiratory failure.

#### ***What to do to help:***

- Include foods high in phosphate such as milk and yoghurt. These have small amounts of carbohydrate so will help to replenish your stores as well. Aim to drink at least 600ml (approx 1 pint) of milk or eat 3 individual tubs of yoghurt per day.
- Other phosphate-containing foods are cheese, meat & fish/seafood (these do not contain carbohydrate, so you will need to add small amounts of carbohydrate with this).