### Diet in Thalassemia Major



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### Why is iron in the diet important?

Most of the iron overload in thalassemia major is due to blood transfusion. However, increased absorption of iron from the diet is also important. The amount of iron absorbed from the diet is higher when hemoglobin in the blood is low.

## What are the foods with very high iron source?

Very high iron sources are found in the following foods; they should be avoided or eliminated from the diet:

- Proteins
  - Oysters
  - Liver
  - Pork
  - Beans
  - Beef
  - Peanut butter
  - Tofu
- Grains
  - Flour tortillas
  - Infant cereal
  - Cream of wheat
  - · Cereals like wheat, ragi
- Fruits/Vegetables
  - Prune juice
  - Prunes
  - Watermelon
  - Spinach
  - · Leafy green vegetables
  - Dates
  - Raisins
  - Broccoli
  - Peas
  - Fava beans

Do not cook with cast iron cookware (e.g. a wok) because iron from the cookware can transfer onto the food.

## What are the foods that decrease iron absorption?

It is important to take more of foods which decrease iron absorption such as:

- Cereals like wheat bran, maize, oats, rice, and soy
- Tea and coffee, especially with milk
- Dairy products like milk, cheese and yogurt particularly with meals
- Spices like oregano

# What are the foods that increase iron absorption?

Avoid foods that increase iron absorption such as:

- Pickles
- Vinegar fermented food
- Alcohol
- Soy sauce
- Turnips
- Carrots
- Vitamin C food like citrus fruits Vitamin C food can be taken 3-4 hours after food intake.

## What is the role of antioxidants in diet?

Antioxidants are important in any diet, as they prevent oxidative damage in the body. They

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play an important role in the prevention of diseases such as coronary heart disease and cancer. In thalassemia, because of the excess iron in the body, there is a higher risk of oxidative damage. Four main antioxidants are vitamin E, vitamin C, carotenoids and flavonoids. Foods rich in these antioxidants are:

- Vitamin E
  - Vegetable oils (olive, safflower, palm and soya oil)
  - Ghee
  - Dairy products
  - Cereals
  - Nuts
  - Eggs
- Vitamin C
  - Apple
  - Pear
  - Banana
  - Orange
  - Grapefruit
  - Tomato
  - Carrots
  - French beans
- Carotenoids
  - Carrots
  - Corn
  - Tomato
  - Papaya
  - Oranges
- Flavonoids
  - Tea
  - · Red wine
  - Fruits
  - Vegetables

Vitamin C is water-soluble, so boiling vegetables will leak it out in water. Light steaming preserves vitamin C better. Vitamin E and Vitamin C work better when they are together.

#### What is the role of zinc in diet?

People with thalassemia tend to have low levels of zinc in the blood, probably because they excrete more zinc in the urine. This is partly because iron chelators not only bind iron but also some zinc and excrete it in the urine. Nutritional sources of zinc are:

- Chicken
- Fish
- Dairy products
- Unrefined wheat, maize and rice Zinc can leach into cooking water during food preparation. It is better to avoid using too much water when boiling and to try steaming instead.