

Remove Iron from Cereal

To remove metallic iron from iron fortified cereal.

Iron is the most abundant metallic element in the human body as well as an essential nutrient. Iron is found in hemoglobin, a protein in blood that carries oxygen around the body. A deficiency of iron causes fatigue and decreased resistance to infection. Cereal is often supplemented with iron. Metallic iron cannot be absorbed by the body; however, iron that's in the oxidized form of Fe^{3+} is easily absorbed. The addition of iron filings to food is a common method of iron enrichment. The metal filings are not bioavailable until they reach the stomach where they are oxidized to Fe^{3+}

Materials:

- bowl
- spoons or something to mash the cereal with
- warm water
- pastel coloured balloons
- Strongest magnet you can find (we use rare earth magnets from Jaycar Electronics, approx \$20.00 each) Smartboard magnets may work but we haven't tried them.
- Iron fortified cereal (The label should read 3 mg per serve or higher) Rice Bubbles, Nuritgrain, Weet-Bix all work well.

Procedure:

1. Add 2-3 cups of cereal and warm water in a bowl and stir/mash until the cereal becomes soggy (a soup consistency).
2. Cut the neck off a balloon and place the magnet inside. Stir the magnet in the cereal for 3-5 minutes. Remove and rinse.
3. Remove the magnet from the balloon and look for small dark iron filings on the balloon. The filings should appear as grey dust around the magnet edges.
4. Observe with a magnifying glass or QX5 Microscope. Compare to iron filing dust found in most primary school science cupboards.
5. Record with photo or video.

You will amaze many people who had no idea how iron is added to our cereal.

Teacher's Note

[Iron Explained](#) Better Health Victorian Government

[How to Read a Nutritional Food Label Video](#) 10 minutes Part 1&2 [Level 3](#)

The signs and symptoms of iron deficiency anaemia in children can include:

- Behavioural problems
- Repeat infections
- Loss of appetite
- Lethargy
- Breathlessness
- Increased sweating
- Strange 'food' cravings (pica) like eating dirt
- Failure to grow at the expected rate.

Should you have concerns about any particular student, please refer to your school nurse.