



# VITAMIN A



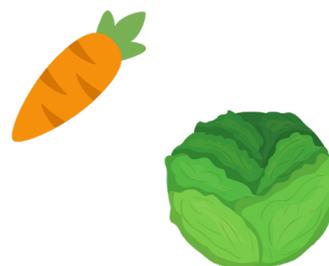
## Summary

Vitamin A can dissolve in fats and oils. This means we can store it in our liver and body fat. Good sources are full fat dairy foods and animal liver. We can also make Vitamin A from substances called “carotenoids” that are found in plants. Beta carotene is a common one. We get it from yellow/orange fruit and vegetables like carrots, pumpkins, and apricots – but also from dark green leafy veges like spinach and lettuce.

We need Vitamin A to see properly, especially when it’s dark. It also helps make our skin soft, with fighting infections, and with growing. Too little Vitamin A (a deficiency) can make us less able to fight infections or cause rough skin. A big deficiency could make someone blind. Too much Vitamin A from animal foods might give someone itchy yellow skin or liver problems. Too much beta carotene doesn’t have these bad effects.

## What is it?

Vitamin A is fat-soluble vitamin. This means it dissolves in fatty/oily substances rather than water and we can store it in our liver and fatty body tissues.



## What foods do we get it from?

Good sources of ready-made Vitamin A (as retinol) include animal liver and whole milk dairy products like milk, cheese and butter. Removing fat to make low/reduced fat dairy products would also remove some of their Vit A, so it is often added back into them. It is also found in good levels in some fish, like eels, and eggs.

Many yellow/orange-coloured fruits and vegetables like mangos, apricots, carrots, capsicums, kumara, melons and pumpkins plants are rich in substances like beta carotene which our bodies can make into into Vitamin A. These substances are also found in dark green leafy vegetables like spinach, broccoli and cos/romaine lettuce. It takes more beta carotene to meet our body’s Vitamin A requirement than retinol.

Some foods (like butter or yellow cheeses) contain both retinol and beta carotene. Nutritionists measure total Vitamin A as ‘retinol equivalents’ to account for all its different forms.

## Why do we need it?

Vitamin A has many functions. It’s important for eyesight, helping our eyes to see colour and in dim light. The skin, eyes, and soft layers of our nose, throat and lungs need it to stay healthy and moist. It’s needed for cell and bone growth, reproduction, gene expression and cell division. It helps us fight infections and may help prevent certain cancers.

## Funky fact

Carotenemia is a harmless condition that turns someone’s skin yellow. It is caused by eating very large amounts of carotene-rich foods over a long time and is easily reversed by cutting down on them and adding other food items to balance out their diet.

## What happens if we have too much or too little?

Too little Vitamin A (deficiency) can cause blindness, especially at night, but this is very rare in developed countries. Rough dry skin and lowered immunity are other deficiency signs. It's hard to get too much from a balanced diet, but pregnant women do need to watch their levels. Someone getting too much Vitamin A, perhaps from lots of supplements, might feel sick, itchy or have jaundice (liver problems or yellow skin). Too much beta carotene doesn't have the same bad effects, so don't worry about eating carrots as part of a balanced diet!

## Is it affected by processing or storage?

Vitamin A can break down over time in air and light. It's not badly affected by cooking and, some studies even suggest that boiling may increase beta carotene concentrations in veges like carrots. Freezing tends to reduce levels of beta carotene.

## How does the Vit A content of some common foods compare?

Animal-based food	Total Vit A (ug, as retinol equivalents)	Plant-based food	Total Vit A (ug, as retinol equivalents)
100 g ox liver, fried	21,000	1 raw 15 cm carrot	959
50 g smoked eel	515	1 cup spinach boiled (150 g)	597
½ cup cheddar cheese (59 g)	233	1 red capsicum (167 g)	259
1 (250 mL) cup standard (3.3% fat) milk	83	1 cup boiled broccoli (164 g)	181
1 egg, size 6 boiled	56	½ cup fresh mango (88 g)	177
1 (250 mL) cup trim milk (0.5% fat) milk	7	10 dried apricot halves (54 g)	38

A microgram (ug) is one millionth of a gram (g), or one thousandth of a milligram (mg).  
Source: The Concise New Zealand Food Tables, 12th edition 2016 (2017).

The recommended daily dietary intake (RDI) of Vit A is about 600 micrograms (or 0.6 mg) for children aged 9 to 13, and 700 or 900 micrograms (or 0.7 or 0.9 mg) for women and men.

## USEFUL LINKS

Twenty Fun Facts About Vitamins. Retrieved from: <https://www.multivitaminguide.org/infographic/20-fun-facts-about-vitamins.html>

Life Education factsheets on "Is fresh always best?", and "Processed foods and processing".

## REFERENCES

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