

# Carotenoids...

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Carotenoids are all visible as a colour to the human eye, carotenes are orange in colour and, as you may have guessed, have received their name due to their colouring, very distinctively, of the carrot. They also commonly colour the fat of animals which cannot process this hydrocarbon substance very well, therefore retaining it. Carotenes are known to increase the chances of lung and prostate cancer among cigarette smokers and it is therefore suggested to avoid foods containing a high amount of this hydrocarbon. However, in the people who don't smoke, it's known to actively decrease the deterioration of sight, giving to the idea that carrots will help you to see in the dark. When people say that eating too many carrots can make you appear more orange, this is also due to the excess of carotenes in your body which cannot all be absorbed, resulting in this orange complexion.

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Carotenoids also aid photosynthesis and it is these colours that are seen when leaves start to drop in autumn. As with the dead leaves you can extract carotenes for use in dyes and paints through the laking process and by drying and grinding the coloured material. The colours extracted are lightfast as with nearly all coloured material but will last a long time when kept in a dark jar or environment.

# Other Types of Carotenoids...

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Other types of Carotenoids include Lycopene, canthaxanthin, and astaxanthin which all share similar structures to carotene.

Lycopene is the cause of the red colourings found in rose-hips and tomatoes.

Whereas Canthaxanthin produces the pink colours of flamingos, some crustaceans, salmon, and trout. It is synthetically manufactured for use in feeding captive flamingos as well as use as food dye.

All of the Carotenoids talked about prior to this are broken down in the human body, producing a type of Vitamin A which, as mentioned earlier, can greatly help decrease the loss of eyesight.

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Astaxanthin provides the red colour of cooked salmon, red bream, trout, lobster, and shellfish. In a live animal, astaxanthin is combined with a protein and is dark in colour. When boiled, the protein breaks down and releases the astaxanthin which is then made visible to us as the typical red lobster. Although this Carotenoid isn't broken down by human bodies into vitamin A it is a strong anti-oxidant and is therefore commonly taken as a supplement to boost the immune system. All of these Carotenoids can be extracted in varying degrees and some work better than others.

