



Stargardt's Connected

Raising awareness, Giving support,
Seeking a cure

Vitamin A and Stargardt's Disease



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Whilst this information has kindly been provided by researchers and medical experts; overall, the evidence to support a role for diet and nutrition in the management of Stargardt's disease is limited.

Always consult with your doctor before making a change to your diet.

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Vitamin A and the body

Vitamin A has long been known to be necessary for good eye health and to prevent dry eyes and night blindness. Vitamin A is also required for healthy [1]:

- skin;
- immune system;
- reproductive system;
- blood and bodily organs;
- bone growth and development.

Vitamin A is an 'essential' nutrient – this means that your body can't produce its own vitamin A and so it must be provided through your diet [1].

Vitamin A and Stargardt's disease

In Stargardt's disease damage to the macular region of the retina (the light sensitive layer of the eye) is in part due to a build-up of fatty deposits at the back of the eye which result from a defect in the ability of the eye to process vitamin A [2].

There is some limited evidence which suggests that lower levels of vitamin A in the body may be linked to better visual outcomes for some people with Stargardt's disease [3]. However, because vitamin A is also needed for the proper functioning of other parts of the body, it is important not to completely cut it out. Finding a healthy balance may be the best approach.

Beta-carotene

Beta-carotene is a naturally occurring pigment found in fruits and vegetables, particularly those which are red-orange in colour, which is converted into vitamin A in the body [4]. There is no evidence that such naturally-occurring vitamin A sources cause problems in the retina. Therefore, it is not necessary to stop eating these foods. Sources of beta-carotene include:

- carrots and oranges (or their juice);
- squash and pumpkin;
- cantaloupe melon;
- red and yellow peppers;
- apricots;
- vegetables like kale, spinach, romain lettuce and broccoli;
- whole milk and egg yolks also provide a source of beta-carotene (but contain vitamin A as well).

Vitamin A - what to avoid

While there is no evidence to support that reducing your dietary intake of vitamin A will reduce the progression of Stargardt's disease, it may be advisable to avoid foods, nutritional supplements and medications with excessively high levels of vitamin A, or where extra vitamin A or synthetic forms of vitamin A (called retinoids, specifically retinyl acetate or retinyl palmitate) have been added [2,5].

1. Organ meats

Organ meats (known as offal) like liver are nutritious but contain high levels of vitamin A. Cheaper meat options like mince, sausages and burgers may contain higher levels of organ meats and are often less nutritious overall than more expensive cuts of meat. It may be better to minimize consumption of foods containing organ meats.

2. Fortified foods

Manufacturers may add extra nutrients to foods (e.g. some cereals and dairy) to help people reach their recommended daily allowances (RDA) or recommended nutrient intake (RNI). Avoid foods which advertise they have added/extra or a high % of your recommended amount of vitamin A or that list synthetic vitamin A as ingredients.

3. Retinoid-based medications or those containing vitamin A

Some prescription and over the counter medicines, particularly those to treat skin conditions like acne and psoriasis, may contain retinoids - synthetic forms of vitamin A. If you are prescribed an oral medication (i.e. a medicine taken by mouth) for your skin, ask your doctor for one that doesn't contain retinoids.

Topical medications (i.e. medications applied directly to the affected area) for the skin shouldn't pose a problem because vitamin A is poorly absorbed through the skin. However, it may be sensible to avoid topical eye medications containing vitamin A, such as the lubricating eye ointment brand VitA-POS, used to relieve eye dryness and irritation. While it is unlikely that significant levels of vitamin A are absorbed from ointment on the eye surface into the retina, since this hasn't actually been tested and there are other eye ointments available (such as Lacrilube and Simple eye ointment) that do not contain vitamin A, we suggest these as alternatives.

Dietary supplements

Avoid multivitamins or any standalone supplements which contain vitamin A, retinyl acetate or retinyl palmitate. Some supplements specifically for eye health may also contain sources of vitamin A.

Evidence from a large clinical trial, the Age-Related Eye Disease Study (AREDS) performed by the United States National Institute of Health (NIH), found that specific high doses of Vitamins C and E, beta-carotene and the minerals zinc and copper, known as the AREDS supplement formula, may help slow the progression to advanced age-related macular degeneration (AMD) [6]; another form of macular disease and the most common cause of irreversible vision loss in older people [5].

However, the AREDS study also showed that high dose beta-carotene led to an increased risk of lung cancer in smokers or anyone who has smoked previously (and that high doses of zinc oxide caused minor gastro-intestinal disturbances in some participants).

Therefore, the original supplement was modified in a second study, the AREDS2 trial. The 'AREDS2' formula replaced beta-carotene with two different vitamins from plant sources, lutein and zeaxanthin, as well as lowering the levels of zinc [7].

There is inconclusive evidence supporting the use of 'eye vitamin' supplements to prevent or improve age-related eye disease and no evidence for their benefit in Stargardt's disease. Individuals with Stargardt's disease wanting to take a supplement however, should avoid the original AREDS formula, and take the AREDS2 formula which doesn't contain beta-carotene or other forms of vitamin A [8,9].

Top tips for eating well

- It is important most of all to have a well-balanced and healthy diet and a positive attitude towards the food you eat. This is good for overall health and likely good for eye health too.
- Try to increase your intake of fresh food and limit your intake of processed foods, which are often lower in nutritional value and more likely to be fortified or to contain synthetic forms of vitamin A.
- Certain popular 'superfoods' are thought to have general health benefits but should be enjoyed as part of a healthy diet with lots of fresh, unprocessed food. Having an excessive intake of any, one particular food can lead to other health complications.

- Taking supplements can be useful for those who struggle to get their recommended daily intake of nutrients. However, those derived from natural sources tend to be better absorbed by the body than artificially manufactured ones
Read the labels and avoid supplements containing vitamin A.

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