

## Nutritional supplementation in age-related macular disease

There has been much interest in the role of diet in the development of age-related macular disease. There is some evidence that people eating a healthy diet including a range of vegetables have a lower risk of developing age-related macular disease. Unfortunately, there is little evidence to show that adding nutrients thought to be important to the diet in the form of supplements is helpful and most research studies have been inconclusive.

There has been one large study in the United States, the AREDS study, which does appear to show that some people with the more advanced stages of age-related macular disease did better over a number of years if they took supplements of antioxidant vitamins and zinc. No advantage was shown for those people with earlier forms of the disease. The doses used were much greater than the doses available in vitamin and mineral supplements available over the counter. The treatment did not lead to improvement in the vision, but some people showed less deterioration over a longer period of time than would have been expected. There is no evidence that the lower doses contained in over the counter supplements make any difference. Although side effects in the AREDS study were rare and mild, such high doses of vitamins and minerals need to be taken with care as they may cause side effects and may interact with other medications a patient may be taking. People who are at high risk of developing the advanced form of the disease may consider using this form of supplementation after discussing it with their ophthalmologist or GP (Appendix).

The nutrients lutein and zeaxanthin, which are normally present in the macula and are thought to protect the eye from light and age-related damage, were not tested in this study. There is some evidence that these nutrients when naturally present in our diet may be important in maintaining the health of the eyes into old age. Some people think that they may prove more important than the supplements tested in the AREDS study, but so far there have been no studies to show that the lutein and zeaxanthin supplements which are commercially available are effective and safe, or what dose is needed.

A good supply of the important vitamins and minerals including lutein can be obtained from a diet containing a range of different coloured fruit and vegetables such as kale, spring greens, spinach, red, yellow and orange peppers, pumpkins, oranges, carrots and sweet corn. Other food groups in the diet are now also thought to be important and it is becoming increasingly likely that the sort of healthy diet recommended for heart health will also turn out to be good for the eyes. This means cutting down on red meats and unhealthy fats and including more oily fish or other sources of healthy fats in the diet.

Smoking is harmful to the eyes and people who smoke have a greater chance of developing the more severe forms of age-related macular disease. Smokers and recent ex-smokers should avoid supplements containing beta-carotene.

There is still a lot we do not know about nutritional supplements and age-related macular disease, and the results of further studies are awaited.