

## Healthy diet goes together with prevention of age-related macular disease

Age-related macular disease (AMD) is a degenerative disorder of the macula, the central part of the retina. As people become older, they have an increasing chance of getting subretinal white deposits, so-called drusen. These drusen are a sign of early AMD and normally are not accompanied by severe visual problems. The more and larger drusen there are in an eye, the higher the risk that it will develop late AMD. Late AMD usually leads to a severe decrease in visual acuity, hampering reading, recognising objects and faces, finding one's way, and of course driving. The result is severe disability and loss of independence. Preliminary stages of the disease can be diagnosed through visual or photographic inspection of the back part of the eye: the fundus. The prevalence of late AMD increases with high age, affecting over 10% of 'white' persons older than 80 years. Late AMD has a dry, slowly progressing variant, and a wet variant that may lead to severe loss of vision within days. AMD has a hereditary component and an association with smoking, but the pathophysiology of AMD is still poorly understood. Apart from the early stages of wet AMD, no cure is known for this most prevalent cause of blindness above age 50 years in the Western world.

Recently, however, there have been some reports indicating that a regular non-prescribed diet may have some beneficial influence on preventing or delaying AMD. From a case-control study it was already known that five times the daily recommended dose of vitamins and anti-oxidants reduced the chance of progression from no or early to late AMD by 25%<sup>1</sup>. These results have been

challenged. Recently a longitudinal study with eight years follow-up was published that included over 4,000 independently living people, 55 years and over (mean 67) in a middle-class suburb in Rotterdam<sup>2</sup>. The dietary habits of all of these persons were carefully assessed through a standardised interview by a dietician using a 170-items questionnaire. The intake of certain micronutrients such as vitamins and trace elements was related to total energy intake. AMD status was assessed by inspection of fundus photographs by two independently investigating experienced ophthalmologists, using strictly defined criteria. Over a median period of 10.6 years, 560 people (13%) turned out to develop incident AMD

Results indicate that people with a higher than median intake of certain so-called anti-oxidants in their regular daily diet had 30% less risk of late AMD



*A healthy diet in the prevention of age-related macular disease, high in  $\beta$ -carotene, vitamins C and E, zinc and iron*

than the control group with a median intake<sup>1</sup>. The risk of AMD was 20% higher in the group with a lower than median intake. In the study, care had been taken to exclude a range of potential confounders, such as smoking habits, cholesterol level, blood pressure, alcohol use, body-mass index, and total energy intake.

Several anti-oxidants considered in the diet were analysed. Of these, especially the carotenoids, vitamins A,C, and E, and the trace elements zinc and iron turned out to be associated with the decreased incidence of AMD. About 14% of all participants in the higher intake group took the anti-oxidants as special food supplements. However, the results did not change if these persons taking supplements were excluded from the analyses. Given that the precise role of anti-oxidants in the ageing body is still far from clear, for the time being it seems wise to stick to a healthy diet without special food supplements, unless one belongs to a high risk group and one's doctor advised to take additional supplements.

What would this healthy diet be? A higher intake of vitamin E can be achieved by consumption of whole grains, vegetable oil, eggs, and nuts. Relatively high concentrations of zinc can be found in meat, poultry, fish, whole grains, and dairy products. Carrots, kale, and spinach are main suppliers of beta carotene,

while vitamin C is found in various fruits and their juices, peppers, broccoli, and potatoes.

The study mentioned<sup>2</sup> is looking backwards in time and so is of an observational nature. As will be clear, an experimental study for corroborating the findings is both highly desirable and very difficult to perform. Pending a more full understanding of the role of anti-oxidants in the human body, the clear-cut prevention message for ageing people is to eat according to well-known, almost classic nutritional advice: vegetable oil, vegetables and fruit, whole grain bread, dairy products. The message is unchanged, its urgency increased.

## References

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