Age-related vision loss may be one of the greatest challenges to health and affects basic life functions such as the ability to read, drive a car and enjoy many types of entertainment. For people over 50, the leading cause of impaired central vision is called age-related macular degeneration, or AMD, and today 7 million people are at risk of developing this condition.

QUESTION: What is AMD?

ANSWER: The macula is the central portion of the light-sensitive retina in the back of the eye. The macula is the part of the retina that provides sharp vision for seeing small details. With age, the integrity of the cells that form the macula can become damaged, and in turn this can lead to vision loss and in some cases cause legal blindness.

AMD comes in two forms. Dry AMD (non-neovascular) is the most common form. It results from deposits called drusen that accumulate under the light-sensitive retinal cells and impair their function. Wet AMD (neovascular) is a more serious form. Vision is lost due to new blood vessels that increase below the retinal layer of cells. These new vessels tend to leak fluid and blood under the retina and irreversibly damage retinal cells.

Q: What are the symptoms?

A: With dry AMD, symptoms can develop very slowly and be completely unnoticed or very subtle. Wet AMD, in contrast, can include severe changes in vision that occur in a matter of days or weeks. The usual changes include a haziness, grayness or blank spot in the central vision. Straight lines can appear to bend or have kinks in them, and color vision may become dimmer.

Q: What is known about the cause?

A: Although the exact cause or causes remain undetermined, some key things are associated with increased risk of developing AMD. These include, of course, aging, along with having a family history of AMD, being Caucasian, smoking, being farsighted, being obese and heavy alcohol consumption (more than three drinks per day).

Another somewhat controversial risk factor is regular aspirin use. A recent 15-year study of more than 2,000 people found that regular aspirin users were more than twice as likely to develop wet AMD compared with those not using aspirin. More research is needed.

Q: What is known about diet and AMD prevention?

A: An overall healthy lifestyle that includes a good diet, regular exercise and no smoking appears to help reduce the risk of developing AMD. There is some evidence that diets with less sugar and white flour and more colorful fruits and vegetables and fish high in omega-3 fatty acids may help to prevent AMD.

Although the omega-3 components of fish oils seem to be protective, the same is not the case for the omega-3 fatty acid found in vegetable fats (alpha linolenic acid). Overall, a high intake of vegetable oils seems to increase the risk of AMD.

Some herbs and spices may prove to be protective. For example, a substance in turmeric called curcumin shows promise for having beneficial effects on eye health, including possible prevention of AMD.

Q: How is AMD treated?

A: When used along with current medical treatments, specific nutritional supplements have been shown to enhance treatment success and to halt or slow progression of dry and wet AMD. These supplements originally included combinations of zinc, vitamins C and E, and beta-carotene. Newer formulations under study include fish oils and colorful compounds such as lutein, zeaxanthin and astaxanthin. Although these supplements have been shown to help in treatment, it remains to be determined whether they help to prevent AMD.