Macular pigments have an antioxidant effect due to a high concentration of hydroxy-carotenoids (lutein and zeaxanthin). They play a protective role against the development of age related macular degeneration (Haddad & al, 2006, Whitehead & al, 2006).

It has been shown that the density of macular pigments is highly related to nutrition (Crochet & al, 2009) and that a change in diet or the use of nutritional supplements modifies these pigments density (Hammond & al, 1997).

### Methodology

The purpose of this program is to evaluate if the optical density of macular pigments is within normal limits and to follow the evolution of this density over time.

Sensitivity threshold of red (620 nm) and blue (460 nm) stimuli are measured in the fovea and peri fovea areas.

In normal subjects, blue thresholds present a relative attenuation of about 0.6 log units in the fovea location, indicating the presence of macular pigment which absorbs blue light.

### Quantitative analysis

The program subtracts the global alteration of blue thresholds resulting from mild lens opacities.

It compares the resulting measurements to a normal data base and gives a score with a probability of abnormality.
Follow-up

The program searches all the results from the same patient and plots the evolution of the score over the last exams.

Comparison with the eye fundus

The fundus program allows the comparison of the examination results with the eye fundus.

The image of the eye fundus is imported as an image file either through the computer network or by USB key, CDROM etc.

The operator identifies by two simple clicks the position of the fovea and papilla and the program automatically performs the scaling and repositioning of the eye fundus image.

Advantages...

- A quick and easy test for patients
- Complementarity with other visual function tests
- Absence of pupil dilatation
- Control of fixation
- Use of several test locations in the periphery
- Follow-up program