Retinal Changes and Heart Disease in Women

Optometrists have long known that they are often the first to see the problem in people with untreated hypertension. Retinal artery thinning is one of the earliest signs of hypertension and optometrists observing this when taking a retinal photo or otherwise examining the fundus will refer the patient to their GP for a medical review.

Now there is new research published in the 6 March 2002 Journal of the American Medical Association showing that women with the narrowest arteries in the retina had almost double the risk of developing serious heart problems. The researchers studied the association between retinal arteriolar narrowing, a marker of microvascular damage from hypertension and inflammation, and incident CHD in healthy middle-aged women and men.

In the study, initiated in 1987-1989, retinal photographs were taken in 9,648 women and men aged 51 to 72 years without coronary heart disease at the third examination (1993-1995). Individual arteriolar and venular diameters were measured on each digitised photograph and a summary arteriole-to-venule ration (AVR) was calculated.

During an average 3.5 years of follow-up 84 women and 187 men experienced incident CHD events. After controlling for mean arterial blood pressure, diabetes, smoking, plasma lipid levels and other risk factors, each standard deviation decrease in the AVR for women was associated with a 1.37 increased risk of any incident coronary heart disease event and a 1.50 increased risk of acute myocardial infarction.

In contrast, for men AVR was unrelated to any incident CHD or to acute myocardial infarction.

AVR is a standard measurement taken by optometrists whenever they do a comprehensive eye examination.

The take-home message for women is **'ask your optometrist to monitor and record AVR and to notify you of any significant decrease in the ratio'**. You should discuss the need for a medical review and ask for a full report to your GP.