



## EXERCISE AND EYESIGHT

Lack of exercise contributes significantly to several eye conditions affecting the elderly, with a slightly lower contribution for middle age and younger patients. Much of the evidence is very strong, but some evidence is weak and will take many years to confirm, but logically we should all adopt healthy lifestyles in the meantime.

There is some evidence that suggests that regular exercise can help preserve vision, particularly when combined with a healthy diet and the avoidance of smoking. Exercise may reduce the risk of sight loss from **narrowing or hardening of the arteries, high blood pressure** and **diabetes**. Exercise may also reduce the risk of sight loss and other complications from these conditions, once they develop.

**Narrowing and hardening of the arteries** (arterio-sclerosis) occurs to some extent in all of us during life and is influenced by the balance of different fats e.g. cholesterol in our bloodstream. Exercise has a positive influence on the balance of these fats, for example, it reduces cholesterol and raises the level of other fats such as HDL (High Density Lipoprotein) which protect our arteries from narrowing and hardening. Narrowing of the arteries can block off the blood supply to those areas we need for vision, which include the brain (visual cortex) and the blood supply to the eyes. The blockage of these blood vessels can occur gradually or suddenly (eg a stroke). Exercise reduces the risk of this blockage and should therefore preserve sight.

**High blood pressure** (hypertension) is increasingly common with age and is linked with hardening of the arteries. High blood pressure increases the strain on blood vessels resulting in further narrowing and hardening of the arteries thus increasing the risks described above. Very high blood pressure dramatically increases the risk of having a stroke in the brain and blockage of the retinal arteries. Severe hypertension can cause leakage and bleeding from the blood vessels in the eye and rarely swelling of the optic nerves with loss of vision. Regular exercise has been shown to reduce the risk of developing high blood pressure and will also help keep the blood pressure down once hypertension has developed.

**Diabetes** (raised blood sugar) is increasingly common in our society and lack of exercise, obesity and dietary factors are amongst possible explanations. Diabetes occurs when the natural insulin hormone control of blood sugar levels becomes defective. Over years this leads to narrowing and blockage of the smaller blood vessels in the body. The resulting poor blood supply commonly affects the retina (film) in the eyes of patients with diabetes where the blood vessels can leak and bleed and produce scarring which can cause loss of vision. In fact, diabetic retinopathy is the commonest cause of legal blindness in the UK in the under 65 age group. Fortunately the changes can be detected early by regularly attending the local diabetic retinal screening programme and having laser treatment if required. However, prevention is of course better than cure. Lack of exercise and obesity can lead to Type 2 diabetes and regular exercise can improve diabetes control and therefore should reduce the chance of developing sight threatening diabetic retinopathy.

**Exercise and obesity...**Obesity is strongly associated with diabetes and high blood pressure in later life and as such regular exercise should help prevent and reduce obesity and the potential associated sight-threatening complications.