

## Lifestyle Factors that may affect glaucoma

Reducing intra-ocular pressure (IOP) with drops, laser or surgery is the only treatment approach that has been definitively proven to slow the progression of glaucoma. The following lifestyle factors may increase or decrease the risk of glaucoma progression in patients with glaucoma.

### **Aerobic exercise lowers IOP**

Aerobic exercise (walking, jogging or cycling) lowers IOP, even after 5 minutes. This reduction is greater with longer duration and higher intensity exercise. Exercise may have more IOP lowering effect in individuals with glaucoma. This reduction of IOP with exercise is additive to the effect of glaucoma drops.

Once regular exercise is established (for at least 3 months), this IOP lowering effect continues for up to 3 weeks after cessation of exercise. Physically fit individuals have a lower baseline IOP, and get much less additional lowering of IOP with exercise. Marathon runners have the lowest intraocular pressure, as a group.

There is one group that should be cautious: in individuals with pigment dispersion syndrome or pigmentary glaucoma, pigment dispersion during aerobic exercise may lead to increased IOP

Note: aerobic exercise differs from weight lifting, which may increase IOP.

### **Yoga**

Head-down yoga positions have been associated with significant increases in intraocular pressure in some people (particularly inverted positions) and could lead to worsening of glaucoma.

### **Fruit and Vegetables**

Antioxidants and nitrates may reduce glaucoma risk and are found in fruits and vegetables. It is best to eat plenty of fruits and vegetables, especially those that are rich in Vitamins A and C, carotenes and nitrates. These include green leafy vegetables, carrots, cruciferous vegetables (e.g. broccoli, cauliflower and cabbage), berries, citrus fruits and peaches.

### **Excessive water drinking**

A significant rise in IOP may occur after drinking a high volume of water (1 litre) over a short time period (5 – 15 minutes). Glaucoma patients should avoid ingesting large volumes of fluid rapidly.

### **Coffee**

Caffeinated coffee is known to elevate IOP. It seems safer to ingest caffeine in moderation – no more than two cups of coffee a day.

### **Tea**

Caffeine levels in tea are low and there is no additional risk from consuming tea. In fact, tea drinkers (one cup per day) may have lower rates of glaucoma compared with non-tea drinkers. Tea contains flavonoids that may reduce glaucoma risk by improving blood flow to the optic nerve.

### **Alcohol**

Alcohol may lower IOP initially, but daily alcohol causes a slight elevation in IOP. We recommend moderation.

### Omega-3 acids

Omega -3 fatty acids, found in oily fish (eg. salmon) and chia seeds, have been shown to lower the risk of glaucoma.

### Cholesterol

#### Medical lowering of cholesterol

Use of a cholesterol lowering medication (statin or non-statin) for more than 24 months has been shown to reduce the risk of glaucoma in some studies.

### High blood pressure

Untreated systemic hypertension is associated with glaucoma. **This is not a direct association**, rather indirect, possibly due to high blood pressure damaging the blood vessels to the optic nerve over time. It is recommended that high blood pressure be treated.

Note: High blood pressure is **not** correlated with high eye pressure.

### Low blood pressure

Some glaucoma patients have progressive visual field loss despite adequately controlled IOP. One possible cause is excessive lowering of blood pressure, in patients on BP medications who may be over-medicated. 24-hour blood pressure monitoring can detect this

### High body mass index (BMI) and obesity

Being overweight is associated with high IOP, but there is conflicting evidence about the association with glaucoma. A high BMI is associated with sleep apnoea (see below).

### Sleep apnoea

Sleep apnoea syndrome (SAS) is associated with glaucoma. SAS is the repetitive collapse of the airway during sleep. Due to the poor quality of sleep, patients have chronic fatigue, daytime sleepiness and reduced cognitive function. People are more at risk for SAS if they are male, obese, snore, drink excessive alcohol, and smoke.

### Neck Ties

If you wear closed collars (with ties for example) be careful not to have them too tight as this increases pressure in the veins of your head and neck and can subsequently lead to increased IOP.

### Playing wind instruments

IOP can almost double within 20 seconds when playing a wind instrument (e.g. trumpet), but returns to baseline almost immediately.

### Swimming goggles

The wearing of small well-fitting swimming goggles increases your IOP. Larger goggles appear to be safer.

### Summary

Several lifestyle factors affect IOP and glaucoma, but there is limited evidence to confirm whether these changes influence glaucoma progression. However, there is significant evidence that these lifestyle changes are good for general health, and they seem unlikely to cause more glaucomatous damage. Hence, with the current information available, we recommend that individuals consider them.