

## SUNGLASSES

There are three types of sunglasses:

**Cosmetic sunglasses:** these do not give significant protection against the sun and are worn as fashion accessories.

**General purpose sunglasses:** for reducing glare in bright light or in circumstances such as driving in daylight.

**Special purpose sunglasses:** for activities such as skiing or for people abnormally sensitive to glare.

Sunglasses give comfort in very bright conditions by reducing the total amount of light reaching the eye and, in particular, protect the eye from the damaging ultra-violet (UV) part of the spectrum. There are two types of UV – UVB and UVA.

UVB is radiation within a wavelength of 280nm to 315nm (nm = nanometre, which is one millionth of a millimetre!) This radiation is substantially absorbed at the surface of the cornea but can reach the retina. Excessive exposure can cause permanent damage to the cornea and conjunctiva, but this may not progress if further exposure is avoided. UVA (315nm – 380nm) radiation penetrates more deeply and can cause damage to the crystalline lens and retina. Permanent effects such as cataract development are seen as accelerations of the ageing process.

### Which to Choose?

Always look for CE mark. This European Standard sets performance levels for the amount of UV they let through. Purchasing sunglasses that don't conform to this standard is not advised.

Non UV absorbing lenses can do more harm than not wearing anything at all. Behind a tinted lens, the pupil opens wider allowing in more UV light than would happen normally and thus reduces the eyes' natural protection.

### Does the colour of the lens make a difference?

Brown and grey are the most popular colours and green is one of the most effective.

### Safety?

For safety choose plastic, toughened glass or laminated glass lenses. Most people choose plastic as it is lighter and more comfortable, especially in hot weather or when participating in sports.

### Are there such things as 'sun contact lenses'?

Yes. This area is developing quickly. Ask your contact lens practitioner about the latest products available. Sports people involved in open-air activities may find these particularly interesting.

### What about prescription lenses?

Both sunglasses and contact lenses are available to your normal optical prescription. We will be pleased to advise you, but ensure that we know that you wish to have UV protection built in.

### Which sunglasses are best for driving?

The Highway Code states that tinted glasses should not be worn at night or in poor visibility. Sunglasses should not be used at night to stop headlamp glare. They should also be removed if driving from bright sun into a tunnel. Don't pick a very dark tint. A medium density is normally sufficient and it is safer as it transmits more light.

### Graduated tints

These are tinted darker at the top than at the bottom and give useful protection from bright overhead light, leaving a lighter area for map reading or seeing the dashboard.

### Photochromic lenses

These lenses darken on exposure to sunlight and should react efficiently in changing light conditions. They should not leave much tint present when the lens is not exposed to the sun.

### Polarising lenses

These lenses reduce reflections from wet or polished road surfaces, but they reveal the stress patterns in the older types of toughened windscreens, which can be hazardous.

Density of tint

Shade No.	Recommended Application	Visible Light Transmission	UVB Transmission	UVA Transmission
1.1 to 2.0	Cosmetic	80 – 100% down to 30 – 40%	8-10% down to 3 - 4%	80 - 100%
2.5	General Purpose	18 – 30%	2 - 3%	4 - 8%
3.1	General Purpose	8 – 18%	1 - 2%	2 - 4%
3.1	Special Purpose	8 – 18%	0.2 - 0.3%	0
4.1	Special Purpose	3 – 8%	.03 - .08%	0