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Maximum comfort with ultra-thin, super lightweight spectacles

Less is more! These tips are the key to getting ultra-light spectacle lenses and frames

The lighter spectacles are, the more comfortable they are to wear: Optimum comfort is achieved by making the frame and lenses as lightweight as possible. Modern manufacturing methods and extremely lightweight materials for lenses and frames have made it possible to produce spectacles that offer outstanding quality at an exceptionally low weight. BETTER VISION investigates five tips for creating ultra-thin, exceptionally lightweight spectacle lenses and frames – and discovers why losing a bit of weight can be beneficial for everyone.

To begin with: Why is it a good idea to minimize the weight of lenses and frames?

The less spectacles weigh, the more comfortable they are to wear. It may sound surprising, but our nose is so sensitive that we notice every last gram resting on top of it! The ideal solution would be a pair of spectacles that we forget we're wearing – spectacles that do their job without us even noticing them. That would eliminate the problem of indentations on the wearer's nose and discomfort caused by spectacle sides, simultaneously making the spectacles more comfortable to wear and improving their fit. And this isn't just an issue that affects children or athletes. Weight-optimised lenses and ultra-light frames can now make the headaches caused by heavy spectacles a thing of the past for everyone. Reducing the weight of spectacles is clearly a key factor in achieving maximum comfort – but sometimes it takes a while for people to notice that they are having a problem with their new spectacles because the lenses and frame are a few grams too heavy. By following our tips below, this situation can be avoided right from the start.

The ZEISS Online Vision Check

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How can you reduce the weight of spectacles to a minimum?

1. The material the lenses are made from is a critical factor.

Lightweight spectacle lenses made from plastic – special ZEISS "high-index" lenses – are the secret to incredibly thin and lightweight designs, even when high dioptric powers are required. Four different types of material are available (also see our infographic at the end of this article): basic materials, standard materials, high quality materials and high-tech materials. The higher the quality of the source material, the thinner you can make the lenses. In the case of plastic lenses, for example, choosing the high-tech option over the standard material can reduce the weight by up to 50 percent (up to 40 percent in the case of glass lenses). That's quite a weight off your mind! And it applies to progressive lenses, too.

2. The method used to produce spectacle lenses: aspheric grinding and the ZEISS computer-assisted OPTIMA technique.

Another way of putting spectacles on a diet is to use what is known as aspheric grinding: In the case of conventional ground lenses – referred to in the trade as spherical lenses – the front and back surfaces of the lens are curved like a sphere. In contrast, aspheric lenses feature specially optimised surfaces. In order to avoid a pronounced, aesthetically unappealing curvature of the front surface of the lens while simultaneously achieving perfect visual quality, the front surface of an aspheric spectacle lens is optimised so that the surface flattens out from the center of the lens toward the edges. This makes it possible to make aspheric lenses thinner and significantly lighter while maintaining the same optical effect. In combination with the ZEISS high-index lens materials referred to above, aspheric lens design techniques can be used to create flat, thin and extraordinarily lightweight spectacle lenses – even for wearers with significant vision problems.

Another method of producing ultra-thin lenses is to use a computer-assisted method developed by ZEISS called OPTIMA. This makes it possible to reduce the edge and center thickness visible in the frame to a minimum at the production stage while taking all the frame specifications into account. Often OPTIMA enables the lens to be produced much more thinly. The eye care professional can use special recommendation programs from ZEISS to visualize these thickness differences.

Slim and light spectacle lenses

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-
-
- Dropdown
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0%	1.5
20%	1.6
20%	1.6
35%	1.7
40%	1.67
40%	1.9
50%	1.74

3. The right material for the frame

The frame and sides play a major role in determining the overall weight of the spectacles. It's therefore important to choose a slim frame made from special, ultra-light material. For example, titanium weighs some 50 percent less than conventional metal or plastic. That's why spectacles with a titanium frame are the number one choice for anyone who needs exceptionally stable yet lightweight spectacles – and the perfect solution for athletes and [> children](#). Offering the ultimate lightweight experience, today's ultra-thin titanium frames weigh less than two grams. But it's not just its low weight that has elevated titanium to the number one spot when it comes to materials for spectacle frames and sides: titanium frames are extraordinarily light, robust and corrosion-resistant and can be produced in ultra-flexible designs where required. In fact this material is now so flexible that you can bend the spectacle sides without damaging them – they simply spring back into their original shape as soon as you let go. They also come in a wide range of outstanding designs, completely screw-less and offered by many different brand manufacturers in a wide range of conventional and ultra-modern colors. The only thing these designs have in common is their extraordinarily low weight. Titanium frames are nickel-free, which makes them a great choice for allergy sufferers.

4. The design of the frame

The weight of a pair of spectacles is also influenced by the size of the frame because this determines whether the spectacle lenses will be lighter or heavier. The smaller the frame, the thinner and lighter the lenses.

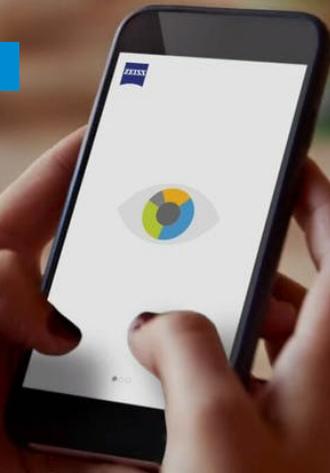
5. A good eyecare professional.

Finding the right eyecare professional with the right equipment is also a key factor in obtaining the lightest possible spectacles. By performing careful calculations and choosing the right type of lens, a good eyecare professional can also help to reduce the thickness of the lenses to make the spectacles lighter. [> How to find a good eyecare professional...](#)

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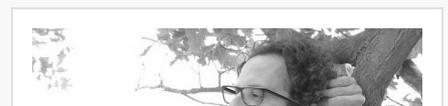
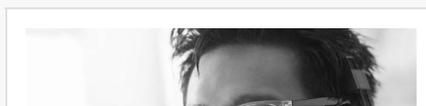


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