

How to buy Loupes

Magnification enlarges items viewed by the naked eye. This can be achieved by loupes or operating microscopes. The advantage of loupes is that they are more portable, practical and less expensive. In order to choose the correct pair of loupes, certain factors such as the magnifying power, working distance, visual field and depth of focus of the product should be considered. Here is a guide to some of the key factors to consider when buying loupes.

1) Choose your magnification

When starting out with your first pair of loupes we suggest you start with a low magnification, such as a 2.5X. This is because the process of adjusting to loupes is made easier if the magnification is lower, due to loupes with a lower magnification having a larger field of view. With a higher magnification the field of view is considerably reduced. We would only suggest a higher magnification to those who have worn loupes in the past and are confident with a smaller field of view. The depth of field is another factor to consider. This is the viewing distance whereby the loupes remain in focus, which in practical terms, means the distance you are able to move closer or away from the patient, without your loupes losing focus.

As a guide, for most microsurgical procedures in vascular, cardiac and most plastic surgery procedures, 2.5X to 3.5X magnification is usually sufficient, whilst for nerve, tendon and digital vessel repair, higher magnifications of 4.5X and 5.5X are often desired.

For general dentistry magnification, 2.5X is normally used, although for endo/crown and bridge work, 3.5X to 4.5X magnification may be required for better precision.



1.0X magnification



2.5X magnification

Generally speaking, for lower magnification loupes (2.0X to 3.0X), use the lighter Galilean design that consists of only three lenses. For higher magnification loupes (3.5X to 5.5X), a prismatic design is used which consists of a compound system of several lenses and has superior optics. However, due to there being more lenses in prismatic loupes they have longer telescopes which make them heavier and bulkier than Galilean loupes.



Galilean design

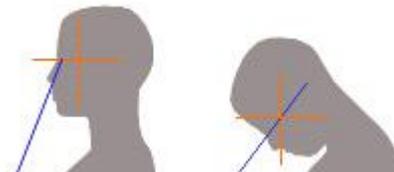


Prismatic design

For higher magnification, an operating microscope should also be considered. [Click here](#) for more details about operating microscopes.

2) Measure your Working Distance

Working distance is crucial, as this is the distance between the eyes and the working site. Choosing the wrong working distance can lead to poor posture, fatigue and back pain as shown opposite.

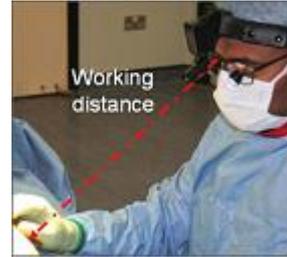


Correct working distance

Short working distance

Working distance can be determined easily by measuring the distance between the eyes and the working site using a tape measure. We advise that you do this whilst in the sitting and standing positions and then take the average measurement.

The working distance is also crudely proportionate to height (see chart below). Please note however, this only provides an estimate!



Working distance in relation to height:

Height	Sitting	Standing
170 cm (5ft 7")	340 mm (14 in)	420 mm (16 in)
170-190 cm (5ft 7"- 6ft 4")	420 mm (16 in)	460 mm (18 in)
>190 cm (6ft 4")	460 mm (18 in)	500 mm (20 in)

3) TTL or Flip Up?

Basically there are two designs of loupes: 'Through the Lens' loupes [TTL] which have the telescopes fixed directly onto the lens of the glasses, and 'Flip-Ups' loupes - those where the magnification telescopes are mounted on a hinge system attached to the frame. Flip-Up loupes can be easily 'flipped-up' to allow the surgeon or dentist to see through the naked eye or through their normal prescription lenses.



Flip-Up loupes



TTL loupes

Comparison of Flip Up and TTL loupes

Flip Up loupes

- Cost less than TTL loupes.
- Can be flipped up when communicating with the patient or carrying out routine tasks.
- Flip-Ups can be shared between colleagues, since adjustable.
- Easy to change lenses when prescription changes.
- Heavier and more bulky.
- Narrower field of view because the telescopes are mounted further away from the eyes.

TTL loupes

- Cost more since customised to user.
- TTL's lenses are fixed to the frames.
- TTL's cannot be shared among colleagues
- Should your prescription change, the loupes must be sent back to the manufacturer to be modified, incurring cost and inconvenience.
- Weigh less and less bulky.
- Wider field of view since telescopes are mounted closer to the eye.

4) Weight

Loupes must be comfortable for the operator and therefore the weight of the loupes is an important consideration. If the loupes are too heavy they can be uncomfortable to wear - especially during long procedures.

Loupes are usually mounted on spectacle frames and a good quality frame will distribute the weight evenly around the nose bridge and ears. Alternatively, loupes may be mounted on a head band which although distributes weight evenly around the head, does not protect the wearer against splashes of fluid, as spectacle frames do.

Summary

Choosing your loupes is really down to personal choice, budget and intended use. We hope this guide will help you make an informed choice about your loupes.

Please go to the [loupes product page](#) for full details of our product range and to purchase products. At SJT Medical we are more than happy to help you along the way, so please do not hesitate to ask us for further information, or to arrange for a free fitting by contacting us directly on Tel : 0844 272 1918.