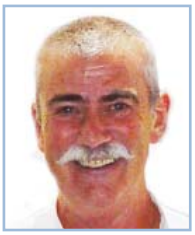

So you're thinking of using magnification?

By Martin X. Hogan

Many dentists today are thinking of using magnification. When asked why, there are often a multitude of answers: "It's the trend"; "Now I'm in my mid-forties my eyes are changing"; "I seem to be doing more re-makes!"; "A friend said with magnification their work has improved"; or "Just curious".

In essence, these are all the wrong reasons! Instead, magnification:

- enables you to see a bigger target;
- reduces strain - no more tired eyes; and
- alleviates skeletal problems - no more tight neck and shoulders and no long term problems as a result of poor posture.

As a result, your work will improve "out of sight".

Where to start

Consult an optometrist for the purpose of a comprehensive examination and report of your visual acuity. This should include both distance and reading planes. To enable the optician to assess the most suitable design of loupe, a request should be made of the optometrist to provide a prescription listing even the smallest correction that may have been detected.

Visual acuity changes during a dentist's lifetime, hence bi-annual consultations with the optometrist is a prudent measure.

All magnifying devices, from the simplest to the most sophisticated operating microscope, are designed for those who do not require a spectacle correction. Magnifying devices will only perform to the manufacturer's claims if the user's eye can deliver 20/20 binocular vision in both the distance and reading planes.

Magnifying glasses do not correct subnormal vision. Conversely, spectacles do not provide magnification.

The loupe

It has been determined and generally globally accepted by dentists that the 2.5X Galilean loupe satisfies the basic parameters to provide a sufficiently enhanced image, depth of field and field of vision for general practice.

Equally, for endodontic practice, the 4.5X Prismatic loupe has been universally endorsed as possessing the most suitable compromise between higher magnification, a limited field of vision and a reduced depth of field.

Almost all 2.5X loupes currently available will provide a satisfactory visual performance for the practice of dentistry. However, the selection of a prismatic loupe deserves more prudent consideration, with care taken to evaluate any 4.5X loupe *in situ*.

The prudent selection and purchase of an appropriate 2.5X loupe for general practice and a 4.5X loupe for endodontic procedures should serve the dentist for the duration of his or her professional life. There should be no requirement to move to higher magnification. Confusion may arise in the dentists' mind as visual changes that usually occur with eyesight may be interpreted by the dentist as a requirement for more magnification. Whereas upgrading the spectacle prescription lens will reinstate the performance of the loupe.

The question that is often asked is "What is so good about this particular loupe?".

It is not just a frame with two magnifying pods attached. An Operating Loupe should be considered as comprising several important and individual components. Each component makes a significant contribution to performance and must be given equal consideration. Failure to do this may compromise and possibly diminish the desired magnification result.

Components

Loupes consist of the following:

- The magnifying device;
- The foundation or frame upon which all elements are mounted or attached;
- The flip-up or fixed function of the magnifying device;
- The incorporation of any/all spectacle prescriptions and/or its capability to integrate with the casual use of contact lenses;
- The ability to protect the eye from chemical insult, high speed detritus, blunt force trauma and bio contamination; and
- Fully integrated auxiliary illumination and miniature camera.

Comfort

Any device capable of delivering these multi-factorial functions will be affected by the accumulation of weight. This weight is borne on the nose.

Today's technology has dramatically miniaturised and reduced the weight of all components, however, the combined weight cannot be ignored but must not be confused with comfort, especially for procedures of long duration.

Conclusion

When purchasing a loupe, remember:

- Price should not be your guide;
- Seek the advice of an optician or optometrist to assist with your evaluation;
- Take time to try candidate loupes *in situ*;
- Your correct decision should last you a lifetime; and
- Beware' of superlatives when choosing an ophthalmic device. Treat with caution lightest, brightest, one-size-fits-all, etc.

For many dentists, the choice of "the loupe" is a single function consideration. Time and reality will prove this to be a costly mistake requiring future re-investment.

About the author

Martin Hogan graduated as an optician in 1965. For over 40 years and with the guidance and mentoring of the late internationally renowned ophthalmologist Dr John L. Colvin, AM, has developed, patented, manufactured and provided ophthalmic products for dentists to worldwide acclaim. Most notably, he is the inventor of the Hogies system of loupe frames.