

**Magnification**

Magnification in micro-dentistry is achieved through high quality lenses not available to us such a high-resolution view. The working field used in micro-dentistry is not two-dimensional, it is three-dimensional. If used correctly, this would give users more high-quality machines and make the price more attractive for others to adopt the use of microscopes.

**Resolution**

Resolution plays a most important role. Our naked eye cannot identify, for example, 72 dpi (dots per inch). By looking through a microscope, you can identify more than 350 dpi! Unfortunately, dental loupe magnification is not able to give us such a high-resolution view. The working field used in micro-dentistry is not two-dimensional, it is three-dimensional. If used correctly, this would give users more high-quality machines and make the price more attractive for others to adopt the use of microscopes.

**Illumination**

Illumination can give us a brighter and clearer field view. The more light moves to blue, the higher the resolution is for the human eye. That is why recently a lot of dental microscopes have begun to use a xenon or metal-halide light source. Halogen light, which is darker than xenon or metal-halide, is still used in micro-dentistry because it is soft to the human eye and its yellowish color allows increased concentration for the dentist. There is also a LED (light emitting diode), yet a microscope would not use this light because it spreads, but there are magnification systems because it is bright enough and lasts longer.

**Ergonomics**

Many dentists have started to retire because of serious backaches. The backache comes from bad posture during dental procedures. Right-handed dentists usually lean their bodies to the right side to see the object directly via their eyes rather than through the reflection of a mirror. Micro-dentistry not only provides dentists excellent ergonomics, but also provides patients excellent ergonomic treatments during the procedure. When patients can receive treatment in a comfortable position, their satisfaction for the dental treatment will increase.

**Visual guidance**

Without visual guidance, dental treatment would be as a regular dental procedure under high magnification, high resolution and brighter illumination. Regular treatment is usually performed with one’s tactile guidance (the sense of touch) and at a faster rate of information to the human brain compared to that of the sense of touch. Try this: close your eyes and have a friend put an object in your hand that you have to determine what it is only by using your sense of touch. It will likely take you a few minutes to correctly identify the object. However, if you open your eyes and watch the object being placed in your hand, you will immediately send the information about the shape of the object to your brain much more quickly and exactly.

**Micro-instruments**

Micro-instruments were first developed in the area of micro-endodontics. Nowadays, many kinds of micro-instruments are available in many fields in micro-dentistry. Even the smallest instruments are too big for micro-dentistry (Fig. 4). The Academy of Microscope Enhanced Dentistry plans to launch an official journal of micro-dentistry, so that would help educate anyone interested in the field.

**Conclusion**

Some might need more information or scientific articles to begin micro-dentistry on their own. One place to start is to attend an annual or bi-annual meeting of micro-dentistry, which are held all over the world. That might be the best place to begin in order to get more information. The Academy of Microscope Enhanced Dentistry plans to launch an official journal of micro-dentistry, so that would help educate anyone interested in the field.