Study in JOI finds accuracy of X-Guide navigation is ‘11x better than freehand implant placement’

The Journal of Oral Implantology reported a new study that confirms the accuracy of placing dental implants using the X-Guide dynamic 3-D navigation system.

The model-based study appearing in Journal of Implantology (JOI), the official publication of the American Academy of Implant Dentistry, was used to determine the accuracy of placing dental implants using the X-Guide™ dynamic navigation system.

The study focused on measurements of the overall accuracy of implant placement relative to the virtual plan. It also compared accuracy of static guides, implants placed freehand, as well as other navigation systems on the market. The results show that the 3-D angular accuracy of the X-Guide™ system is approximately 11 times better than freehand, and 2-D lateral positional accuracy is approximately eight times better than freehand.

The X-Guide™ system by X-Nav Technologies is a dynamic navigation surgical system that gives the ability to achieve more accurate placement of implants, right in your office. Interactive, turn-by-turn guidance during live surgery gives the ability to control the exact position, angle and depth – like GPS for your handpiece.

Dynamic navigation and static guides

The authors also stated that while both static and dynamic image navigation are highly accurate, dynamic navigation systems have the following advantages:

- The patient can be scanned, planned and undergo surgery on the same day.
- The plans can be altered during surgery when clinical situations dictate a change.
- The entire field can be visualized at all times.
- Accuracy can be verified at all times.

Further clinical indications of dynamically guided systems include:

- Limited mouth opening.
- Tight interdental spaces that preclude the use of guidance tubes in CAD/CAM guides.
- Distal implants (i.e. second molars) that are precluded from CAD/CAM static guides by prolongation height.
- The inability to take impressions because of hyper exaggerated gag reflex.

Increased accuracy is now immediate and in-office

In addition to the X-Guide system’s implant-planning software, surgeons tell us they are also excited to bring navigation technology into the dental office. Increased accuracy is now immediate. Same-day guided surgery can be a reality for more surgeons and patients: There are no additional processing or shipping delays that are common in the static guide process, and it’s a fraction of the cost of traditional guides, the company states.

With the X-Guide’s patented technology, learning and integrating navigation technology is easy, the company asserts. It is important to note that with this system, the surgeon concentrates on a single target to assist in precisely guiding the implant. The result – consistently achieve a more desirable functional and esthetic outcome, according to the company.

Industry-leading navigation technology

X-Nav Technologies is pleased to assert that the X-Guide system has gathered a lot of attention as an industry-leading navigation system. According to X-Nav Technologies, surgeons have navigated more than 8,000 dental implants using the X-Guide dynamic 3-D navigation system.

Surgeons using X-Guide navigation have told the company that they enjoy being able to offer their patients minimally invasive and accurate surgery, while referring dentists appreciate that navigated implant placement offers them better restorative accuracy. Another benefit to surgeons using this technology is the potential for decreased neck and back pain because of the improved surgical position ergonomics, the company stated.