

“CT DIAGNOSTICS IN 3D IMPLANT TREATMENT PLANNING”
THE USE OF KEYSTONE EASYGUIDE
CT SCANNING SOFTWARE
FOR
DIAGNOSIS, DIRECTION AND DEPTH DETERMINATION

Timothy Kosinski, DDS, MAGD
Assistant Clinical Professor
University of Detroit Mercy School of Dentistry

Currently on the editorial review boards of Reality, Contemporary Esthetics, and Clinical Advisors and a Beta Testing Site for Keystone Easyguide CAD/CAM Software and Dynablast.

- Diplomate American Board of Oral Implantology/Implant Dentistry
- Fellow American Academy of Implant Dentistry
- Diplomate American Society of Osseointegration
- Diplomate International Congress of Oral Implantologists
- Mastership Academy of General Dentistry

CT imaging improves the success rates from a restorative and surgical view.

- No guessing on position
- Pre-treatment planning

Communication
improved between the
implant surgeon and
restorative dentist

CT stents are a valuable tool in
directional and depth
determination

- Communicates the actual implant position to the surgical site

- Used in critical anatomic situations and for placing the implant in an ideal position in bone because it eliminates possible manual placement errors and matches planning to prosthetic requirements.

Fortin, et al. Precise Dental Implant Placement in Bone Using Surgical Guides in Conjunction with Medical Imaging Techniques. J. Oral Implantology. Vol XXVI, No.4, 2000

- Image guided systems provide a reliable preoperative assessment of implant size and anatomic complications. It may also be used in flapless surgery. *Int. J. of Oral and Maxillofacial Implants. Vol. 18. No.6, 2003*

- Minimally invasive procedures may be requested by patients to reduce their anxiety and the pain experienced and thus increase the treatment acceptance rate. With the flapless procedure, patients experienced pain less intensely and for shorter periods of time.

Int. J. Oral and Maxillofacial Implants. Vol.21.No2, 2006

CT scanning software is an incredible tool in the diagnosing of implant position and placement.

CT scanning will become more prevalent for proper dental implant placement. Bitewings, periapicals, panoramic radiographs and even medical CT scans only give a two dimensional image for implant planning.

The newest CT planning software provides as much information as possible to assist during surgical planning. We can now visualize vital anatomy in 2D and 3D prior to surgery and assess the location of implants virtually prior to any surgical intervention.

Diagnosing any anatomic issues specific to the patient is easily done as well as plan the implant type, position and orientation in the bone. The process is user friendly and intuitive.

Introduction to EasyGuide™

What is EasyGuide™?

A dental implant surgical planning tool using
computed tomography imaging.

Introduction to EasyGuide

- Implant Surgery Planning
 - Diagnose any anatomic issues specific to the patient.
 - Plan implant type, size, position and orientation in the bone.
- Easy of Use
 - All frequently used functionalities are readily available on screen. Intuitive to learn and master.
- Superb 3D Rendering
 - Both bone surface profile rendering and volumetric rendering are available. Volumetric rendering provides user with an "X-ray" vision to adjacent teeth and internal structures to best position the implant relative to its surroundings. Surface rendering facilitates user's implant placement relative to the bone surface.

Treatment Planning for Dental Implants

The use of CT Scans for proper
implant placement

Evolution of Dental Imaging

- Bitewings and periapicals
- Two Dimension only
- Limited reference to other anatomical structures

Evolution of Dental Imaging

- Panoramic film
- 2D only
- Allows visualization mesial-distal, but not buccal-lingual
- Magnification factor
- Shows anatomical structures but distorts the image by taking a circle plane and flattening it

Evolution of Dental Imaging

- CT scan—3D imaging
- Medical Grade
—Radiology Center or
hospital based Spiral
CT scan
- Cone Beam – Dental
office or scanning
center

Typical CT Scan

- Still using implant overlay to select implant
- Still offering only 2D planning

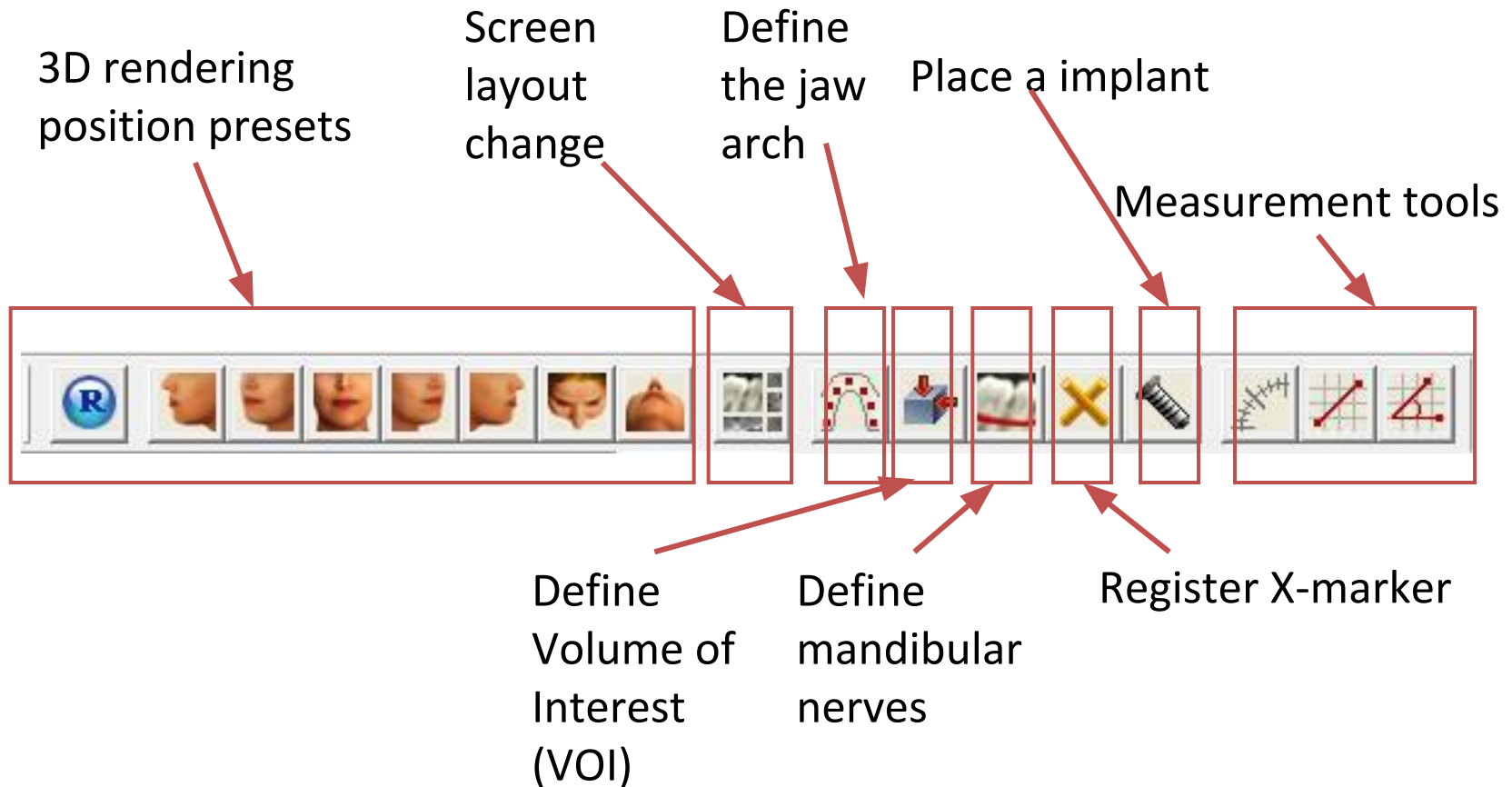
What CT Planning Software provides

- Provides as much information as possible to assist during surgical planning
- Ability to visualize vital anatomy in 2D and 3D prior to surgery
- Convert CT Scans (DICOM files) to 2D and 3D imaging
- Capacity to assess the location of the implant virtually prior to the surgery

Computer-assisted treatment planning

- Enables rotation of scan in 3D and placement of implants around anatomical concerns
- Can view in both 2D and 3D at the same time

Analysis View



EasyGuide™ Advantage

- **User Friendly and Intuitive Technology**
 - The EasyGuide software is simple to learn and easy to understand, providing faster treatment analysis and planning.
- **Peace of Mind for You and Your Patients**
 - The 2D and 3D images provided by EasyGuide give you a clear picture of patient anatomy as well as the ability to develop treatment plans accordingly.
- **Practice-Building Tool**
 - Differentiate your practice with patients and referrals by having cutting-edge technology and offering the highest standard of care.
- **Affordable and Marketable Solution**
 - EasyGuide is priced affordably with several payment options.

DIRECTIONAL DETERMINATION

- Patient wants fixed restoration
- The one implant is failing and mobile and useless in any restoration
- Minimal bone volume in most areas
- Very flat maxillary ridge

DEPTH DETERMINATION

- Traumatic extraction caused substantial loss of buccal bone
- Implant site grafted with posterior ramus
- Precautions: proximity to nerve