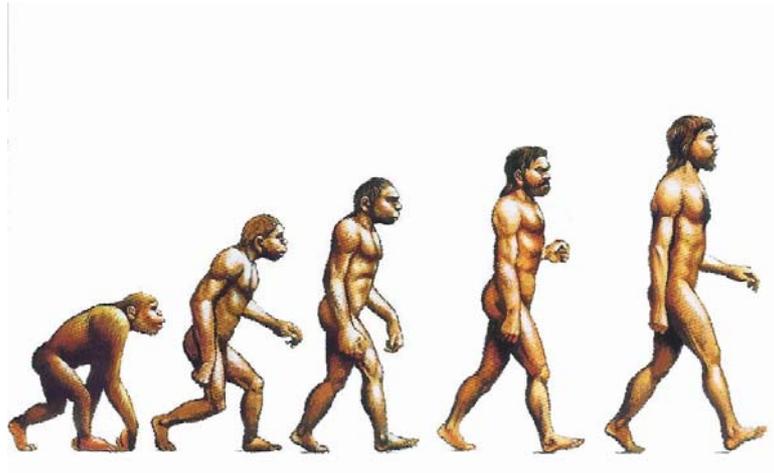


EZEEPLANT THE EVOLVED SYSTEM



EZEEPLANT – AN EVOLVED SYSTEM

Ezeeplant is capable of delivering the following applications simply and predictably with ease.

- Delayed Implant Placement
- Immediate Implant Placement
- Immediate Tooth Substitution
- Early Implant Loading
- Sinus Floor Elevation
- Simplified Ridge Expansion



Ezeeplant is the culmination of fourteen years of research and development. The next evolutionary step forward in implant dentistry and the most advanced multi-featured system currently available. It is an extremely powerful osseointegration treatment modality increasing the versatility and scope of treatment options. The Ezeepplant implant incorporates the latest technological developments bringing together the knowledge and expertise of the last decade. .

SYSTEM EVOLUTION

New placement and restoration techniques together with the advent of an evolved tapered implant design mean it is possible to offer patients predictable immediate tooth replacement with success levels comparable to traditional implant protocols. In some cases it is even possible to early load an immediate implant “Immediate Substitution”. The success of all these techniques is ultimately dependant on the dynamic combination of bone quality, implant design and surgical protocol.

EZEEPLANT AN EVOLVED IMPLANT

Ezeeplant due to a combination of its unique taper and thread form is designed specifically to produce high levels of primary fixation on insertion. The bone type together with the surgical method used to produce the osteotomy site and insert the implant also have a profound influence on primary fixation. Primary fixation is entirely mechanical and is required to resist micromovement and promote osseointegration. As healing progresses the process of osseointegration changes this mechanical fixation to a mixture of mechanical and biological stability (secondary stability).

NATURAL SELECTION

Ezeeplant is an innovative system offering multiple treatment possibilities in one simple to use Universal-System packed with features. It is a Universal Implant designed to be self-drilling and to work with the instrumentation of the major systems. The implants have a tapered Self-Cutting root design that reduces insertion time minimising preparation and insertion trauma preserving precious bone. It is possible with Ezeeplant to have a second implant system without the expense of re-equipping that incorporates an extensive range of unique features:

- Self Drilling
- Self-Tapping
- Self-Ridge expanding
- Specifically developed for immediate tooth replacement and early loading.
- A micro-textured surface for early integration with a micro-thread for crestal bone preservation.
- Each implant in the Ezeeplant range has its own unique tapers for maximal occlusion of the extraction socket.
- Available in 3.25mm, 3.75mm and 4.5mm diameters
- Minimal surgical and restorative steps
- Easy Transfer System
- Multiplanar Angular Correction Abutments

No other system available today offers such an extensive range of features in one easy to use system.

REVOLUTIONARY SYSTEM APPLICATIONS

Ezeeplant is an extremely versatile and powerful implant system offering multiple treatment applications in a single system.

- Delayed Implant Placement
- Immediate Implant Placement
- Immediate Tooth Substitution
- Early Implant Loading
- Sinus Floor Elevation
- Simplified Ridge Expansion

No other system available today offers such an extensive range of treatment protocols in one easy to use system.

The success of all these techniques is ultimately dependant on the dynamic combination of evolutionary implant design and surgical protocol or insertion mode.

Immediate Implant Placement

Immediate implant placement following tooth extraction is a predictable protocol in general practice. Many of the aesthetic and functional problems reported in the literature as a result of soft and hard tissue loss are avoided making the restorative

phase easier and more predictable. With Ezeepplant it is possible to offer patients, immediate implant placement which has the following advantages:

- Soft tissue preservation and improved soft tissue aesthetics
- Preservation of both bone height and width
- Extraction socket guides implant placement
- Easier implant placement and restoration
- Reduced treatment time
- Cost effective
- Increased patient acceptance

Immediate implantation preserves socket architecture ensuring long-term peri-implant stability and excellent soft tissue aesthetics. Conversely delaying implant placement often necessitates more complex specialist restorative and surgical procedures taking implantology outside the domain of the general dental practitioner. Implantation should not be regarded as a fall back position reserved for when "conventional" restorative methods fail, but must be seen as a means to obviate initial bone atrophy.

Ezeepplant implants are root form and have a truly tapered geometry that more closely matches the shape of the extraction socket. This simplifies insertion technique as a close fit is possible with minimal preparation.

CONTRAINDICATIONS

- Acute Infection
- Insufficient Bone
- Lack of Primary Stability
- Addictions

Immediate Tooth Substitution

Immediate Substitution is the direct replacement of a tooth following extraction by an implant supported non-loaded provisional crown in order to maintain the function and tissue of the dento-alveolar complex. The final or definitive restoration is loaded 3/4 months after implant placement. Immediate Substitution of upper incisor teeth in an otherwise healthy dentition is ideal as this treatment protocol offers the following advantages:

- Soft tissue preservation and improved soft tissue aesthetics
- Preservation of both bone height and width
- Extraction socket guides implant placement
- Immediate temporisation
- Soft tissue closure not required
- No second stage surgery
- Easier implant placement and restoration
- Reduced treatment time – soft tissue healing occurs simultaneously with integration
- Cost effective
- Increased patient acceptance

CONTRAINDICATIONS

- Occlusal wear
- Periodontal disease
- Posterior teeth
- Acute infection
- Insufficient bone
- Lack of primary stability
- Addictions

Early Loading Protocols

For early loading the implant is restored in occlusion within three weeks of placement. This type of implant loading is reserved for delayed implant placement where the tooth has been missing for at least 6 months and where good quality bone is available to support the implant. As a result the anterior mandible is most often treated using this approach.

- Minimal treatment time
- Simplified procedure
- No second stage surgery
- Greater patient acceptance

A high success rate for immediate loading of implants with a provisional prosthesis is possible in carefully selected situations.

Sinus Floor Elevation

Ezeeplant implants with their tapered geometry and increased thread length have been designed specifically for this less invasive technique. The increased thread length and taper provide excellent primary fixation that resists displacement of the implant into the sinus during the elevation procedure. Long term, integration and fixation are aided by the micro-textured surface.

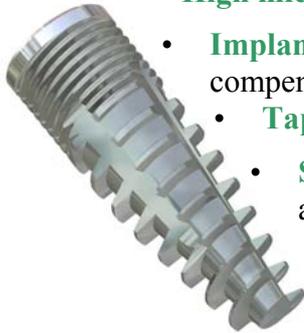
Simplified Ridge Expansion

As Ezeeplant implants are tapered they actually expand bone on insertion. This unlike drilling actually improves maxillary anatomy by widening the thin ridge while preserving bone and increasing primary fixation. Bone manipulation reshapes residual ridge contour through compacting bone and expanding bone laterally increasing the buccopalatal dimension enabling simultaneous implant placement.

EZEEPLANT EVOLVED IMPLANT DESIGN

The evolutionary design features of the Ezeeplant make it the most advanced implant available.

Design Features



- **High micro thread** preserves crestal bone.
- **Implant surface**, a micro-textured surface increases surface area compensating for poor quality bone.
- **Taper threaded form** produces firm fixation even in soft D4 bone
- **Self-Drilling and Self-Tapping** - reduces instrumentation and facilitates insertion even in hard D1 type bone
- **Apical wide thread form** for quick easy insertion with maximum stabilisation in soft bone.

Implant Surface

A micro-textured surface increases surface area and the microroughness stimulates osteoblast activity compensating for poor quality bone especially in the posterior maxilla and sinus graft cases.

Implant Geometry

Studies show a long polished neck will give a statistically significant difference in bone loss compared to a short polished neck. The amount of bone loss shows a correlation with the length of the polished neck. Resorption of alveolar bone along the polished neck stabilises at the level of the first thread. Successfully osseointegrated implants show an increase in bone density with horizontal orientation of peri-implant trabeculae from the threads. Radiographic and histological observations show horizontal laminalization begins at the implant edges and it is suggested that the threads help distribute stress to a larger area.

This has been confirmed by Osteo-Ti's own clinical observations and others over the last ten years and has resulted in the incorporation of a Microthread on the Ezeeplant range eliminating the smooth neck. The Microthread engages more of the dense cortical bone at the alveolar crest, which reduces bone loss due to remodelling. Also the increased number of threads at the implant head improves initial stabilisation.

Each implant in the range has its own unique taper that mimics the diversity of the natural dentition. The taper of a 3.75mm diameter by 10mm long implant is steeper than the taper of a 3.75mm diameter by 15mm long implant. Fig1 this range and diversity of tapers mean that it is possible to generate high levels of primary fixation on insertion.

The Ezeeplant tapered implant introduces the concept of a taper-fit. As the implant is inserted the taper consolidates fine trabecular bone to form a surrounding layer of denser bone that is used to achieve primary fixation. Therefore, primary

immobilisation is obtained from the High Taper Thread and is not dependent on bi-cortical fixation so reducing the length of implant required. The Ezeeplant is available in three diameters (3.25, 3.75 and 4.5mm) and ten various lengths.

This means it is now cost effective for the general dental practitioner to carry a small but optimised range of implant dimensions capable of meeting the demands of any clinical situation without having to invest heavily in an extensive stock.

Optimised Range of Implant Dimensions

IMPLANT DIAMETER (mm)	IMPLANT LENGTH (mm)	ITEM CODE (followed by implant length)
3.25	10, 12, and 15	E (mm)
3.75	10, 12, and 15	E3 (mm)
4.50	10, 12, 15 and 17	E4 (mm)



Self-Drilling and Self-Tapping

The Ezeeplant combines long cutting flutes with a sharp Self-Tapping thread which reduces insertion torque virtually eliminating the possibility of the implant jamming on insertion. This is a reported common problem with other tapered implant designs which can often result in implant fracture or hex distortion adversely affecting treatment outcome. **Ezeeplant is truly unique in that it is both Self-Drilling and Self Tapping or Self-Inserting.** As the Ezeeplant is its own sizing bur this effectively means the final osteotomy will always be cut by a new sharp bur. This not only reduces instrumentation, but virtually eliminates the danger of over preparing the site which can reduce primary stability, an essential prerequisite for successful early loading and immediate replacement. The thread on the Ezeeplant extends to the implant apex and eliminates the need for pre-tapping.

This all means there is no need to invest in and maintain expensive bone taps or sizing burs. Additionally it is possible to use the osteotomy burs of other manufacturers further reducing setup costs. The existing Series II implant instrumentation and component range is also compatible with Ezeeplant so avoiding additional expense.

System Simplicity

Do not confuse simplicity with simplistic when considering implant systems. An ergonomically designed implant system should be easy and intuitive to use in a general practice environment while encompassing the widest range of treatment options possible. Ezeplant meets these prerequisites:

- Minimal Equipment and Instrumentation
- Minimal Surgical Stages
- Minimal Prosthetic Components
- Minimal Prosthetic Stages

Although Ezeplant is a system specifically designed to minimise complexity this does not diminish its functionality. It is applicable to a wide variety of clinical situations and is able to deliver multiple restorative possibilities.

Minimal Equipment and Instrumentation

As the Ezeplant is Self-Inserting this reduces the instrument range required greatly and reduces set up cost, so osteotomy burs and Site Formers are kept to a minimum and it is also not necessary to purchase a set of bone taps.

Primary Insertion Kit

Instrument Description	Function	Instrument
Pilot Bur	Used to cut osteotomy in D1 and D2 type bone	
Universal Sizing Bur	Used to finalise osteotomy in hard D1 bone	
Site Former	Used to form osteotomy in soft D2 bone	
Ratchet	Combined with Extender to drive in Ezeepant	
Universal Driver	Combined with Extender to drive in Ezeepant	
Extender	Used to drive in Ezeepant	
Universal Hex Tool	Used to insert cover and prosthetic screws	
Surgical Mallet	Used with bone manipulation instrumentation.	

Osteotomy Site Preparation

Ezeeplant employs two distinctly different surgical methods of osteotomy site preparation using:

- **Osteotomy Burs** – to cut the site removing bone
- **Site Formers** - to form the site by compression preserving bone.

Both these surgical approaches can be combined, drilling being followed by site forming and may be indicated during immediate placement.

Osteotomy burs

- Pilot bur 2mm diameter (optional if you already have an existing or similar bur from another system).
- Universal Sizing Bur (USB) compatible with all three implant diameters for use in dense D1 type bone,

Only two internally irrigated osteotomy burs required saving on equipment costs.

It is important that the full drilling sequence is correctly followed if implant fracture or hex damage is to be avoided as very high primary fixation is achieved

Site Former

In the majority of cases in the maxilla the osteotomy site can be formed using only a single Site Former.

Only one Site Former required saving on equipment costs.

Depth Measurement

Depth measurement is easily determined by reading from depth marking rings common to Burs and Site Formers. The three bands measure between 7-8mm, 10-12mm and 15-17mm.

EZEEPLANT EVOLVED SURGICAL PROTOCOL

Implant design alone is not enough to guarantee adequate primary fixation. The bone type together with the surgical method used to produce the osteotomy site and insert the implant also have a profound influence on primary fixation.

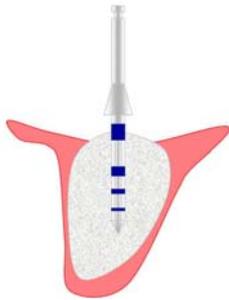
Minimal Surgical Stages

Surgery is deliberately kept to a minimum reducing post-operative trauma and shortening healing time. An important concept of the Ezeeplant system is that bone together with soft tissue must be preserved and bone quality and quantity determine the method of **osteotomy site preparation**. Ezeeplant takes this philosophy one step further in that the mode of **implant insertion** is also dictated solely by bone quality and quantity. This combined approach to site preparation and implant insertion preserves bone optimising primary fixation.

Multiple Implant Insertion Modes

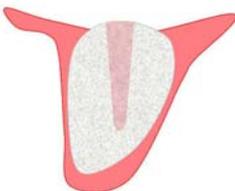
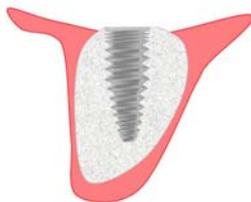
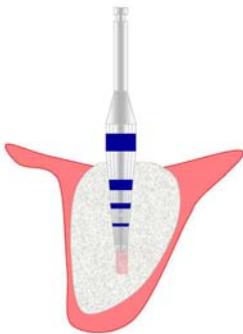
The surgical methods of bone preparation and the technique used to insert the implant are dictated by the bone type in order to achieve maximum primary stability, a prerequisite for successful immediate placement and early loading.

The Ezeeplant implant range has been designed to be Self-Inserting, Push-Fit or a combination of Dual Insertion.



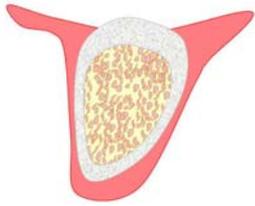
DI Insertion Mode (Self-Insertion)

Hard D1 type bone will necessitate the use of osteotomy burs to cut the site. The amount of preparation and sequence of burs required to produce the osteotomy will depend on the resistance encountered during drilling. Because Ezeeplant is Self-Drilling it is often sufficient to use only the 2mm pilot bur before proceeding with implant placement.

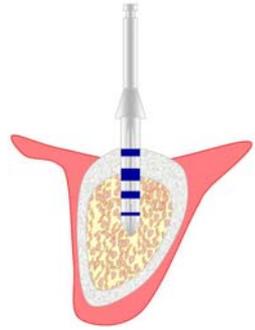


If the implant site is composed of very dense bone and there is excessive resistance to drilling then it is essential that the USB is used to complete the osteotomy site to the desired depth prior to implant placement. **Failure to observe this requirement will result in implant damage or fracture.**

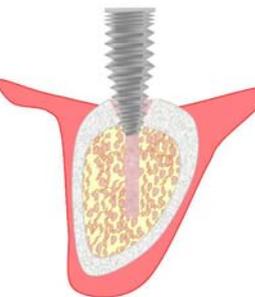
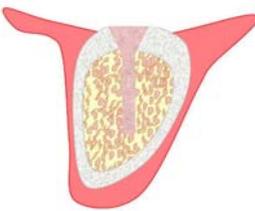
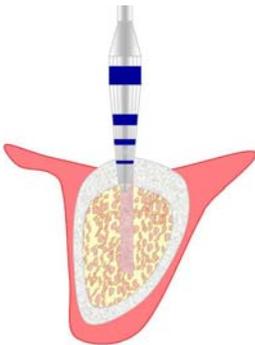
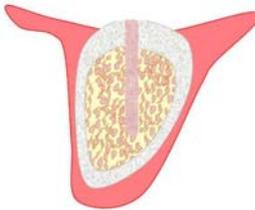
POSTERIOR MANDIBLE



In the posterior mandible or in situations where a dense thick outer cortical plate is encountered the USB should be used to the first depth marking ring (5mm) in order to widen the opening of the pilot osteotomy sufficiently to permit access and easy implant placement.



Once the implant has been started and has engaged the osteotomy site it may be driven home by Ratchet or Implant Driver. The choice of instrument will depend on the accessibility of the location. In the mandible the Ratchet is usually used and in the maxilla the Implant Driver.



D2 Insertion Mode (Dual Insertion)

A combined Push-Fit and Self-Insertion approach is indicated for D2 type bone which may or may not require the use of an osteotomy bur. This insertion mode is mainly used in the maxilla especially if ridge expansion has been used to prepare the osteotomy site and posterior mandible.

The osteotomy site is formed primarily by compression using a Site Former and the Ezeeplant is inserted using either gentle tapping from a mallet or firm hand pressure. It is important in the maxilla that the implant be inserted beneath the margin of the osteotomy site by two thirds of its length before Self-Insertion is started. Leaving the implant above the margin of freshly expanded bone will damage the thin cortical plate as the implant is rotated. The advantage of using Ezeeplant is that its gentle taper acts like a Site Former as it is tapped into place resulting in an extremely close fit and excellent primary fixation

In D2 Mode Insertion it may be necessary to use the 2mm pilot bur to ease the site prior to using the Site Former or following site forming if excess resistance is encountered. D2 type bone is usually encountered in the posterior mandible and in this region it will be necessary to use the 2mm pilot bur and insert the implant using the carrier using firm finger pressure. After starting the Self-Insertion procedure the ratchet can be used to complete insertion.

D4 Insertion Mode (Push-Fit)

If drilling or self-tapping are employed it is easy to over size the site in this D3/D4 soft bone type making primary fixation impossible to achieve. Osteotomy site preparation in this type of bone is best suited to site forming only. The implant is inserted using a Press-Fit technique, **Self-Tapping must be avoided as screwing in the implant will undermine initial stability.** The implant is started by gently pushing it into the prepared osteotomy site under controlled pressure using gentle mallet tapping. As the Ezeeplant is inserted bone is further compacted improving primary fixation. **Turning the implant at this point must not be attempted as it will damage the compacted layer of bone developed by the push-fit procedure reducing fixation.** Press-Fit insertion together with increased thread length and implant taper ensures excellent primary fixation in soft bone. This means that bi-cortical fixation is no longer the only means of achieving primary stability in poor quality bone.

SITUATION	INSERTION MODE
D1 BONE	D1 Mode Self-Insertion
D2 BONE	D2 Mode Dual-Insertion
D3/D4 BONE	D4 Mode Push-Fit
RIDGE DILATION	D2 Mode Dual-Insertion
INDIRECT SINUS LIFT	D4 Mode Push-Fit
IMMEDIATE INSERTION	D2 Mode Dual-Insertion

EZEEPLANT EVOLVED RESTORATIVE PROTOCOL

Patient demands for superlative cosmetic results together with shortened treatment times have brought about evolutionary changes to the approach of implant restoration. Good soft tissue aesthetics in the anterior maxilla are a fundamental requirement of any modern day implant system. The restorative protocol and components for the Ezeepplant system have evolved to deliver consistent predictable results aesthetical and functionally.

The Ezeepplant system offers an extensive range of restorative options for a minimal number of components and instrumentation is multipurpose having more than one application.

[This combination makes the system easy to use and very effective in terms of surgery time and cost.](#)

Predictable Prosthetics – 3D correction

The Ezeepplant Low Profile Abutment system is designed to meet the challenge of delivering consistent and predictable aesthetic results in general dental practice. The Multiplanar Low Profile Abutment range has been developed by Stewart Harding to give infinite three dimensional angular corrections freeing the technician from the restorative constraints imposed by limited abutment choice and special positioning.

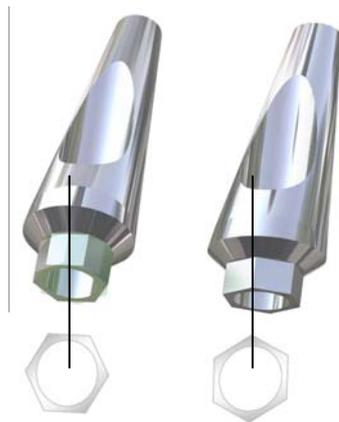
Fabricated from titanium alloy the screw retained Low Profile pre-angled abutments are compatible with all three implant diameters.

- Available in angles 0 to 30 degrees in 5 degree increments
- Available in 0, 20 and 40 degree offsets
- One abutment diameter fits all implant diameters
- Repairable
- Precise placement of intrasulcular margins
- Control of the emergence profile
- Minimal preparation

The Multiplanar Low Profile Abutment range

The Low Profile Abutment range can to correct angles in horizontal and vertical planes, or Multiplanar correction. The Mutiplanar angle is a compound angle which is the product vertical angle of the abutment and the rotational position of the hex.

Multipplanar Angular Correction



Vertical Plane Correction - is possible from 0 to 30 degrees in 5 degree steps (0, 5, 10, 15, 20, 25, and 30 degrees) in 7 pre-angles variants

Horizontal Plane Correction – is possible in 2 Off-Set Hex positions at 0 and 30 degrees. This provides the technician with a choice of 13 different abutments or possible angular corrections.

Multipplanar Angular Correction

The Low Profile Abutment has been developed to minimise abutment overhang. This enhances soft tissue aesthetics and keeps abutment preparation to a minimum, reducing clinical time. The abutment taper of the low profile system has been manufactured so that it ends at the implant head. A shoulder can be milled by the laboratory and the crown margin positioned at any point along the length of the abutment. This permits precise subgingival placement of the restoration relative to the gingival margin optimising aesthetics. A gradual and natural emergence profile of the restoration can be built up because of the increased working distance.

Low Profile Screw

The Ezeplant Low Profile system is designed to meet the restorative demands of Immediate Placement and Substitution techniques. In both these protocols vertical bone dimension is maintained so there will be less space available to accommodate the abutment and post screw. To compensate for the resulting reduced vertical height the Low Profile screw is designed to lie deep within the abutment to increase occlusal clearance.

This also permits greater abutment preparation before the screw head is reached reducing the risk of damaging the screw. A long thread length provides additional engagement with the implant improving abutment retention reducing the annoying incidence of screw loosening. Made from titanium alloy the Low Profile screw hex is 1mm which is universal internal hex size of all system components and screws.

By having just one common hex size for all restorative components prosthetic instrumentation and cost is reduced and prosthetics simplified.

- Fits all implant diameters
- Fits all components
- Fits all transfer components

A taper underneath the screw head engages with an internal taper in the abutments. On tightening the Low profile screw the two tapers lock together. The taper lock system minimises the incidence of abutment loosening.