Thanks For The Opportunity To Share Some Ideas Relating To Implant Dentistry..

Introduction

Life Is Just A Game
What Is My Background?
My Games?

Full Disclosure
Conflict Of Interest In Implant Dentistry,

My Games – DDS Degree in 1991
Wisconsin Office

Constructed 2001

2008 – Sold
General Practice

2004 Implant Director at LVI
Responsible For The Instruction Of The Implant And Bone Grafting Courses.
Another Game (2005) – Mobile CT Scanning Service

2006
Another Game

• Service that Provides Implant Treatment Planning and Guided Surgical Stents.

2010
More Expensive Games

Implant Logistics
Exclusive North American Distributor of

Implant - One
Dental Implants

Leone
Orthodontics and Implantology

Implantlogistics.com

2014 – Grand River Dental Implant Logistics

2015 - Dominican Training Institute
In Short, I Am A Walking, Talking, Breathing, Conflict Of Interest Whenever I Do A Presentation.

But Thanks For The Invitation.

One Request...

Keep an Open Mind.
Be your Own Counsel!

I will challenge some of your fixed ideas.

If You Find This Presentation Useful, The Entire PDF Copy Of This Presentation Can Be Downloaded From Implant Logistics Website

Go to website
Implantlogistic.com

Click on Training Tab
Halfway down the page click on the ICCMO, Full Mouth Rehabilitation With Implants Tab

Historically Implant Dentistry Has Three Major Challenges

1) Implant Placement Control.
2) Long-term Bone And Tissue Health Around The Implant
3) Cost Control And Profit Predictability.

My Passion In Practice And In Life Is To Help Solve These Three Challenges!
So In 90 Minutes You Would Like Me To Explain How To Manage A Whole Mouthful Of These Things Called Implants!

If Individual Implants Can Be That Problematic!

Is there any doctor here -----

That feels they have total control of there implant cases from start to finish???

Does anybody think it’s possible?

Is It Possible?
Let’s Take A Look.
Case Done In 2006

Neuromuscular Denture Setup
Which Is Actually A Defined Restorative Space

Neuromuscular Denture Setup
Turned Into A Surgical Guide
2006 Guided Surgery!

3 Osteotomies - 95 seconds

Implant Placement

Abutments And Restorations Made Prior To Surgery

Abutments And Restorations Made Prior To Surgery
Final Restorations Placed Day Of Surgery

Final Restorations Placed Day Of Surgery

Final Restorations Placed Day Of Surgery

Final Restorations Placed Day Of Surgery

Final Restorations Placed Day Of Surgery

Final Restorations Placed Day Of Surgery
Something is changing in the implant world!

CONTROL IS POSSIBLE!

You Might Ask Why Would I Or Anyone Do A Case Like That??

You Might Ask Why Would I Or Anyone Do A Case Like That??

21st Century Implant Dentistry

I Think We Can Agree These Implant Games Are Different!

Something can be done about it!!

21st Century Implant Dentistry

I Think We Can Agree These Implant Games Are Different!

Something can be done about it!!

X-ray 10 Years Later

So If These Issues Were Solved In 2006 Why Are They So Many Cases Like This Yet Today?

1) Implant Placement Control.
2) Long-Term Bone and Tissue health around the Implant
3) Cost Control and Profit Predictability.
Almost Every Dentist I Know Claims They Restore Implants In Their Office.

Literature Claims That 10 To 12% Of Licensed Dentists Place Implant Fixtures.

If Surgical And Restorative Implant Dentistry Was Easy, Predictable And Profitable Everybody With The Dental License Would Potentially Do It.

If We Are Only Getting 10% To 12% Participation On The Surgical Side, It Must Not be Easy, Predictable And Profitable??

The Restorative Side On The Other Hand Must Be Easy, Predictable And Profitable Because Apparently Everybody Participates???

Implant Dentistry Involves

• History
• Biology
• Biomaterials
• Biomechanics
• Patient Selection
• Diagnosis & Treatment Planning
• Surgery
• Prosthetics
• Maintenance

Implant Success Depends On Responsibility And Control Of

As a restorative

Twenty minutes to place....
& a lifetime to live with

Implant Restorations What Is Left To Control?

To Be Successful In Implant Restorations Single Tooth to Full Mouth Reconstructions

BEFORE YOU DO ANYTHING.

Define Your Space!!!
Space Requirements For Individual Restorations!

Inadequate Or Excessive Vertical Restorative Space

Single Posterior Implant and Restoration
6 mm to 8 mm required.
8 mm with cement retained crown with metal occlusal surface.
5 to 6 mm for a screw retained prosthesis.
For anterior crowns add 1 to 2 mm for longer abutment and proper crown retention.

Individual Restorations. Important Aesthetic And Functional Considerations.

- Implant orientation.
- Tissue thickness or biotype.
- Implant placement position, at crest, above crest or below crest.
- Implant abutment connection type.
- Restorative space.
- Crown to root ratio.
- Adjacent teeth, opposing teeth and occlusion.
- Hard and Soft tissue profile.
- Do you have a photo or photos documenting where you started?

In The End What Are We After

Stable Esthetic Results

This Is What We’re Trying To Avoid.
This Is What We’re Trying To Avoid.

Here is what’s coming!!
The Future.

Restoratively, What We Are Trying To Avoid?
Restoratively, What We Are Trying To Avoid?

Historically Implant Dentistry Has Three Major Challenges

1) Implant Placement Control.
2) Long-Term Bone and Tissue health around the Implant.
3) Cost Control and Profit Predictability.

The Solutions to Diagnostic and Surgical Surprise.

Exciting Technical Breakthroughs Which Allows Us To Achieve Guided Surgical Control.

Appropriate Tools!

The Future in Head & Neck Radiology!
Volumetric CT Imaging

CBCT

Technological Breakthroughs in Implant Dentistry!
IMPLANT TOMOGRAPHY

Evaluated Implant Site in Three Dimensional View

Will Dental Implants Work Well In This Case?

Implant # 7

Implant # 10
What Would This Case Look Like Restored?

Problem 1, Solved.
1) Implant Placement Control.
2) Long-Term Bone and Tissue health around the Implant
3) Cost Control and Profit Predictability.

Historically Implant Dentistry Has Three Major Challenges
1) Implant Placement Control.
2) Long-Term Bone and Tissue health around the Implant.
3) Cost Control and Profit Predictability.

Bone And Tissue Are Lost Around Teeth And Implants For Two Main Reasons.
1) Biomechanics. (Excessive Force or Inappropriate Force.)
2) Bacteria. (Tooth Decay, Periodontitis or Implantitis.)

Biomechanics

- Biomechanics - The Relationship Between The Force You Apply To Living Tissue Such As Teeth And Gums And And How The Tissue Moves And Changes.

Muscles of Mastication

Biomechanics
Okay, Drs. What’s The Diagnosis?

Biomechanics
Teeth, Tissue, Bone, Implants

Abfractions

Okay, Drs. What’s The Diagnosis?

Biomechanics
Teeth, Tissue, Bone, Implants
Unfavorable loads ... are absorbed by the weakest part of the implant system, increasing the risk of fracture.

Screw-retained systems: the problem of the screw


**Broken screw**

Hexed Implant
High resolution X-ray device: 1 µm
0 Ncm

High resolution X-ray device: 1 µm
Problem/Solution?
50 Ncm

High resolution X-ray device: 1 µm
100 Ncm
Biomechanics Hexed Implants

Effects of micro-pump

My Ah-ha Moment!
This Is The Source Of Implant Unpredictability & The Source of Most Implant Compromise and Failure!

Problem Solution - Extraction
Problem
Solution - Correct Bite

• Abfractions

Screw based Hex Implants make up ~85% of Dental Implants today.

So where are we today?

Internal Hex vs. External Hex

Traditional Screw Retained Systems

Marginal bone loss

After 3 years

Traditional Hexed Connection
Marginal Bone Loss

Competitive Implant.

Bone Loss Down To Micro Gap
Implant-abutment connection with press-fit cone connection.

Leone- Italian Implant System
Why Can It Be Placed Sub-crestal?

Newest Technology
Morse Tapper

Correctly Tapered Implants Can Be Placed At Crest Or Sub Crestal.
(connection, 2mm or longer, 12 degrees or less)
Excellent soft tissue healing

Healthier periimplant tissues

Bone stability over time is desirable and achievable

Hexed Implant Capabilities
- Yes
- Yes
- NO

Tapered Implant Capabilities
- Yes
- Yes
- Yes

Tapered Connection Advantage.

Extracts And Immediate Placement Cases

Clinical Case #19
Extract Place and Graft
Section and Extract

Extract 4, 5 and 12.
Place and Graft

Post Op Film
Sub crestal Placement advantage
Extract and Place

After Healing
Extract, Place Implant
Then Restore

- Extract
  Standard $182
  Surgical $282
- Bone graft $500
- Implant Placement $1700
- Abutment $600
- Crown $1200

- Extract average $232
- Bone graft average $250
- Implant placement $1700
- Abutment $600
- Crown $1200

- Total production average per site. $3982

Revenue Extract, Place Implant
Then Restore

Total average per site. $3982

15 per month.
$3982 x 15 = $59,730 per month
$716,760 per year

20 per month
$3982 x 20 = $79,640 per month
$955,680 per year.
Million Dollar Practice
One Procedure - Extract, Place And Restore

252 Cases/Teeth Per Year = One Million Dollars
In Production

21 Cases/Teeth Per Month

5.25 Cases/Teeth Per Week

Taper Implant Connection
Sub-Crestal Placement Options.

Problem 2 Solved!
1) Implant Placement Control.
2) Long-Term Bone and Tissue health around the Implant.
3) Cost Control and Profit Predictability.

Back To
Define Your Space!!!
Neuromuscular Dentistry!

Dental Rehabilitation’s
Define Your Space!!!
Vertical Space Considerations. Inadequate Or Excessive Vertical Restorative Space

**Multi-unit Fixed Prosthesis;**

- If crown height space is less than 15 mm, porcelain is the restorative material of choice rather than acrylic resin.
- If restorative space is >15 mm, a hybrid prosthesis should be constructed.

**NM Reconstruction Cases**

**Defining and Maintaining Reconstructive Spaces.**

**TOOLS TO MEASURE WITH**

- CT Scanner
- K-7

**Stephanie – Age 47**

- Dx: Chronic TMJ Dysfunction, Missing Teeth, Limited Range of Motion
- Chief Complaint: Chronic Pain, Ugly Smile, Difficulty Chewing

**Proper Diagnosis = Control**

- 9 Implants - No Bridges
- 28 Ceramic Crowns
Stephanie – Age 47

Bite Check With Temporaries
After Insertion of 28 Crowns

SCAN 9 THREE YEARS OUT

SCAN 5 THREE YEARS POST OP

Beverly – Age 40

Dx: Messed Up Bite

Chief Complaints:
- Poor Profile
- Head & Facial Pain
- Biting into the roof of her mouth

Beverly – Age 40

Beverly – Age 40
• TEMPORARY WAX-UP
  • USING ORIGINAL BITE
  • CHANGED ANTERIOR MEASUREMENT
    • TO ACCOMMODATE TISSUE RE-CUTTING
    • 8/25 = 19.06
MILLED E-MAX WITH
CUT BACK AND LAYERED
ANTERIORS

2 Years of Stability

Normal Velocity

Rest... Light CO, Reconstruction2+ Years

Kayla Troxel
Next Patient

Pre-op Models

U/L FIXED ORTHOSIS WAXED TO IDEAL

ROM
EMGs
Rest...Light CO

2 Years of Stability

Normal Chew Cycle
No More Bruxing

Ellen Umberger

Pre-op Models
Rest... Light CO, Reconstruction 2+ Years

Adequate Function 2 Years Post Rehab.

Ellen Umberger

Implant Denture Options
Three Prosthetic Restoration Options:

- Note: The first steps are the same for all of these products up to the wax try-in.

**Option 1:** Barr Retained over dentures require a minimum of 17 mm of crown-height space.
- 3 mm soft tissue
- 1 mm soft tissue to bar
- 5 mm bar-height
- 8 mm from top of the bar, acrylic resin to the incisal edge of denture teeth.

**Option 2:**

**Option 3:**

**Inadequate Or Excessive Vertical Restorative Space**

**Ball Attachments Vs. Locators**
- Ball Attachments - approximately 4 to 6 mm in height.
- Locator Attachments - approximately 2 mm in height.

**Restoration Type - Treatment Steps**

- Screw Retained Prosthesis require a minimum of 9 mm crown-height space.

Overdentures.
1st Appointment:

✔ Take impression over the healing caps for fabrication of Base Plates / Bite Rims and Custom Impression Trays.

2nd Appointment:

Define Restorative Space.

✔ Use the provided Base Plate / bite Rims to establish a vertical dimension.

3rd Appointment:

Define/Verify Restorative Space.

✔ Verify bite.
✔ Verify Setup.

5th Appointment:

✔ Put implant parts list from Implant Solutions in the patient file.

4th Appointment

✔ Try In Wax Up (attachments can be incorporate to help with Try In.)
Making a New Over Denture

1st Appointment:

- Take impression over the healing caps for fabrication of Base Plates / Bite Rims and Custom Impression Trays.

Example - Custom Trays

2nd Appointment: Define Restorative Space.

- Use the provided Base Plate / bite Rims to establish a vertical dimension.

Jaw to Jaw Relationship
Define Restorative Space.

- Duplicate existing vertical dimension on current appliance.
- Ten's bite.
- K-7 bite
2nd Appointment: Define Restorative Space.

- Remove healing caps.

Place transfer pins and verify proper placement with x-ray.

2nd Appointment: Place transfer pins

Place transfer pins and verify proper placement with x-ray.
Take the impression

- Open Tray
- Closed Tray

Replace healing caps.

3rd Appointment:

- Try In Wax Up (attachments can be incorporate to help with Try In.)
Replace healing caps.

5th Appointment:

- Put implant parts list from Implant Solutions in the patient file.

Try in bar or attachments and torque to listed specification.
Deliver restoration.

ORS Attachments.
Same five appointments or steps required.

Deliver restoration.

ORs Attachments.
Implant Denture Options

How are edentulous patients being treated?

Often with 4 or 5 implants (sometimes tilted)

Option 1: Solid Zirconium Fixed Removable Denture
Option 2: Bar with Removable Overdenture
Option 3: Fixed Overdenture

Three Prosthetic Restoration Options:
- Note: The first steps are the same for all of these products up to the wax try-in.
Transmucosal Abutments or Conical Abutments
Attachments Used For Bar Retained Dentures or Zirconium Dentures Or To Retrofit An Existing Denture.

Implant-One Conical Abutment

**Attachments Used For Bar Retained Dentures or Zirconium Dentures Or To Retrofit An Existing Denture.**

**Implant-One Standard Conical Abutments are used to secure screw retained prosthesis**

- Made of Grade 5 Titanium.
- The straight abutment will compensate for up to a 20 degree angled implant and is available in 1mm, 3mm, and 5mm cuff heights.
- Burn out sleeves for use in casting a bar with the mating conical shaped mating socket.
- Titanium sleeve can be bonded into all zirconium, screw retained removable dentures.

**2.3mm hex socket tool for installation in implant**

**Conical Abutment**

- Open tray style only

**Note:** When fully seated a gap of .18mm (.007”) is visible.

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**1st Appointment:**

- Take impression over the healing caps for fabrication of and Custom Impression Trays.
- Obtain implant manufacturer’s name, implant diameter and healing cap diameters from the surgeon.
- Ask for any tools you may need to complete the case.

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**Over Denture**

- Take impression over the healing caps to fabricate all Custom Impression Trays.
- Obtain implant manufacturer’s name, implant diameter and healing cap diameters from the surgeon.
- Ask for any tools you may need to complete the case.
- Use the provided Base Plate/Bar blank to establish a vertical dimension.
- Place transfer pins and verify proper placement with x-ray.
- Take impression of Complete Denture OPEN TRAY
- Place healing caps.
- If there are only attachments or no bar, some in the abutments and try in the denture set up. If everything looks good, they are temporary and can be modified or redone.
- If there is a bar, remove healing caps and try in verification jig. If a way confirms everything fits, move on to the next step. If not, see special instructions.
- Replace healing caps.
- Remove healing caps.
- Try to set up and make sure all attachments are settling correctly.
- Fix any leaks.
- Replace healing caps.
- Insert prosthesis. All from implant solutions should be rinsed out in the patient’s S.w.
- Try in bar or attachments and torque to boil point fixation.
- Replace healing caps and secure in the patient’s S.w. (some models)
- Finish occlusions.
2nd Appointment: Take the Impression

Open Tray

Closed Tray

2nd appointment
Implant Level Impression

3rd appointment
Abutment Level Impression

Healing process is completed and ready for impression day

After Second Impression Lab Will Fabricate Model

Verification Jig

If the Verification Jig Doesn’t Seat

Follow these steps:
After model is verified, Lab will make bite record

Wax Try-In
Verify that the occlusion, esthetics and function are correct in the wax try-in.
This is scanned at lab and then used to create a virtual set-up to then create the acrylic prototype resin bar.

Prosthetic is Fabricated

Bars are placed, product is delivered
Denture Options.

• Replacing Lower Denture
  New Upper Implant Retained Denture

16 Year Old Denture

Models With Transmucosal Attachments
After model is verified, Lab will make bite record

Jaw Relations - Define Occlusal Restorative Space
Try In

Once Set Up Is Done and Verified
Lab Will Construct a Bar

Final
Three Prosthetic Restoration Options:

*Note: The first steps are the same for all of these products up to the wax try-in*

Option 1: Solid Zirconium, Fixed Removable Denture
Option 2: Bar/SLT Removable Denture
Option 3: Fixed Removable Denture

What Are The Steps?

• Primary impressions for custom trays.
• Secondary impressions to construct accurate models.
• Base plates and bite rims to define your available space.

Healing process is completed and ready for impression day

Transmucosal Abutments or Conical Abutments

Attachments Used For Bar Retained Dentures or Zirconium Dentures Or To Retrofit An Existing Denture.
After model is verified, Lab will make bite record

Jaw Relationships

Wax Try-In

Verify that the occlusion, esthetics and function is correct in the wax try-in.

This is scanned at lab and transferred to the wax try-in to create the acrylic prototype wax trial.

Acrylic Prototype is Completed

Acrylic Prototype Delivered

Acrylic Prototype is tried in the mouth. Occlusion, esthetics, and function are verified.

Adjustments are made and composite added if needed.

After everything is perfect, return to the lab for fabrication of the final

Delivery of Final
Option 1: Solid Zirconium, Fixed Removable Denture

Clinical Example

Another Case, Zirconia Hybrid First Impression Is A Implant Level Impression

Custom Trays

Open Tray Impressions

Transmucosal Abutments or Conical Abutments
Second Impression.
Abutment Level Impressions
Neuromuscular Dentures
Defined Restorative Space

Jaw Relations

Duplicate Neuromuscular Denture
Occlusal Space
Try In
Upper Zirconium - Fixed
Lower Bar - Removable

Next Case

Treatment Plan Upper
**Post Placement Film**

**Pros & Cons Acrylic vs Zirconia**

**Zirconia:**
- Pros: Very strong, teeth do not break
- Pros: Does not harbor bacteria
- Pros: Less interdental space needed, as little as 50 mm

**Acrylic:**
- Pros: Less costly
- Cons: Not as durable as Zirconia, teeth fracture

**Clinical Case**

**Technology Progression 2004**

**More Complex Cases**

**Evaluate Each Site With C.T.**

**Usable Surgical Stents**
TX Plan: Extract 28 teeth. Place 20 Implants.
Fixed Restorations

Upper and Lower Scanning Appliances

coDiagnostiX
Implant Software
Usable Surgical Stents

Extract 28 Teeth
20 Immediate Implants Placed

Useable Surgical Stents

Sinus Tenting Graft via Osteotomy
Temporary Neuromuscular Dentures

Neuromuscular Implant Dentistry!

Five Months of Treatment!
Something Is Changing in the Implant World!

THANK YOU