Implant mentor program 2025
Session two, day one

Ali Afshar DDS
Bill Holden DDS
Friday February 21st, 2024

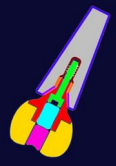
handouts…

same place:

www.pedoctors.ca/implant-mentor-program

also you will get a thumb drive at the end

Review from last Session



Review of the five key treatment planning concepts

2FA1

Concept 1:
First molar occlusion as a treatment goal

- Second molars are more challenging sites
- Patients with at least one functional molar in each quadrant do well
- Treat the WHOLE CASE, properly, or don't do implants…they will overload and fail
- Beware the pt with "Less Syndrome"

Shortened dental arch (SDA)

- Research tells us second bicuspid occlusion is still functional
- W.H.O. says this is the minimum
- More appropriate for the older patient
- Lower bicuspids take more wear, not clear why
- Option to drop to single bi + molar

J Oral Rehabil 2017 Jul;44(7):563-572.

Shortened dental arch and prosthetic effect on oral health-related quality of life: a systematic review and meta-analysis

K Fueki, K Baba

This systematic review aimed to compare oral health-related quality of life (OHRQoL) between two tooth replacement strategies - the shortened dental arch (SDA) concept and conventional treatment with removable partial dental prosthesis (RPDP) or implant-supported fixed partial dental prosthesis (IFPDP) - for distal extension of edentulous space in the posterior area. We

{…}

There was no statistically significant difference in OHIP summary scores between SDA and RPDP at 6 (SWMD = 0·24) or 12 (SWMD = 0·40) months post-treatment. Only one non-RCT had reported higher OHRQoL with IFPDP than with SDA; however, because of the small sample size, there was no significant difference in OHIP summary scores…

Do we replace second molars?

It depends on the situation.

- Available bone present (and at usable position/angle)
- Adequate keratinised gingiva
- Opposing occlusion present
- Third molar present in function
- Patient can open wide enough

Concept 1:
First molar occlusion as a treatment goal

Whenever we see a patient who is missing one or more teeth, our starting point should be

"How can I get this patient back to first molar occlusion?"

Concept 2:
Implants are only one of several options

What are our options to replace missing teeth?

(hint: there are four flavours)

Concept 2:
Implants are only one of several options

- Remember:
  denture-bridge-implant-nothing
- Implant placement is elective treatment
- No guarantee your implant will succeed
- Neither implants, nor teeth, are forever
- Forward compatibility is important
- Aside from bone loss, a denture or retainer doesn't burn any bridges
- Remember: dental implant placement is an elective procedure

Concept 3:
Dental implants are second stage therapy

and should be placed after stage one (disease control) therapy is complete, including cleaning, minor restorative, extractions, and endodontic treatments

and also after any orthodontic treatment

cast partial dentures, crown & bridge: also stage 2

Concept 3:
Dental implants are second stage therapy

- Titanium is part of a complete ~~breakfast~~ treatment plan
- Get the damned teeth cleaned first. Yeesh.
- Restorability of other teeth needs to be known as well
- Placing implants when other infection present increases failure risk
- Complete treatment plans include **both** arches

Concept 4: (a quick one) Implants stand alone

Implants are best

NOT SPLINTED TO TEETH

esp while you are learning.

We will do so sometimes in very specific cases. For you guys, for now, just say no.

Concept 5: Restorative-driven treatment planning

- A bit of a cliché, but a concept that helps describe our philosophy
- The implants need to go where they can support the prosthesis
- Implants were not always done this way, and sometimes still aren't
- Implant cases that can't be properly restored are **failures**, even if the implants are properly integrated and healed
- All cases in dentistry need a "quarterback"

So our five general treatment planning concepts are:

First molar occlusion as a treatment goal

Dental implant treatment is only one of four+ options

Dental implants are second stage therapy

Implants are not splinted to teeth

Restoratively driven treatment planning

And remember: implants are not for everyone

- This is elective treatment
- Some patients are contraindicated
- Some patients are just not good candidates
- An implant is not always our treatment of choice

No one ever got in trouble for declining to treat.

Course objectives (again):

To be able to recognize when a dental implant case is straightforward, and when to refer out

To feel comfortable treatment planning, placing, and restoring single tooth implants (STIs) in these straightforward cases

To receive and use the tools to integrate this in your day-to-day practice

To recognize and manage common complications

How are we going to accomplish that in 36 hours???

WEEKEND 1

Friday January 19th — introduction, treatment planning, risk assessment, socket grafting

Saturday January 20th — restorative treatment planning, single implant restoration

WEEKEND 2

Friday February 9th — armamentarium, placement theory, hands on, instruments, equipment, healing abutments, case presentations

Saturday February 10th — soft tissue mgmt, paperwork, IPC, setup, complications, CBCT, drilling guides, more case presentations

WEEKEND 3

Saturday March 23rd — live surgery day, dinner later that evening

Sunday March 24th ~4½ hours — surg debrief, implant maintenance, implementation

(*note that session 4 is a Sunday*)

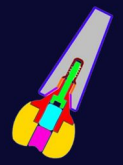
Course schedule for today:

SESSION 2, DAY 1.
Friday February 21st

Morning
- Implant design and nomenclature
- Choosing an implant system
- Implant armamentarium
- **"Implant placement theory"**
- Review of surgical instruments

Afternoon
- Motor, handpiece, and irrigation setup
- Surgical kits and drills
- Hands-on drilling, honeycomb blocks
- Hands-on drilling, plastic maxillae
- Healing abutment selection
- Healing period

Implant design and nomenclature



2FA2

Terms you will hear…

¿ Tapered vs straight implants ?

For the cases you will be doing, tapered implants are easier provided that you prepare the site properly and manage the insertion torque.

¿ Surface treatment ?

Sales people get lots of miles out of this—we don't change our loading protocol based on this propaganda

¿ Internal vs. external connection ?

External is much more fun…if you are a masochist. Otherwise stick with **internal.**

¿ Tissue level vs. bone level ?

Only really a Straumann question. Go bone level.

More terms you will hear…

¿ Non-indexed vs indexed connection ?

Non-indexed is a pain in the butt. Don't use it. Ever.

¿ One-piece vs two piece implants ?

Two piece implants give so much more flexibility, especially while learning.

¿ What about mini-implants ?

Not for while you're learning. An occasional tool for difficult situations in our practice. "Provisional" only according to Health Canada if under 3mm diameter, exception is Straumann BLT 2.9.

When you are starting out, stick with one system!

One more concept you need to understand

¿ Platform switched or not ?

Correct term is "medialised margin".

Abutment margin is medial to implant margin, as if you used too small an abutment.

May reduce crestal bone loss.

All of implant dentistry is going towards medialised margin implants.

Choosing a root form implant system

2FA3

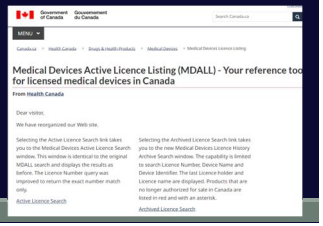
Factors in choosing the right system for you…

1. You want to invest in ONLY ONE SYSTEM when you are starting out.

Inventory is the difference between implants being a profit center *versus* a drain on your practice.

Factors in choosing the right system for you…

2. You want a system that is approved by the Medical Devices Branch of Health Canada



Factors in choosing the right system for you…

3. You want a system you can use in all common situations.

Factors in choosing the right system for you…

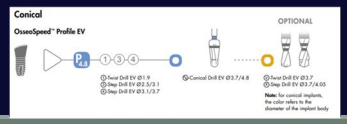
4. You want a system with a wide selection of readily available prosthetic parts, and that will have parts available years down the road. Ideally the screwdriver should be widely available.

   (typically referred to as "mainstream" systems)

Factors in choosing the right system for you…

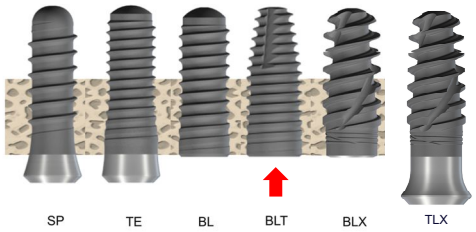
5. When starting out, you need a company with support, typically a sales rep who can come to your location.

6. You want a system that is easy to learn, implement, and restore.

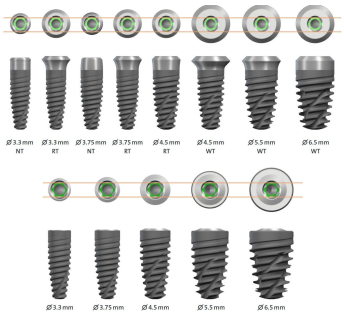


A lot of it comes down to personal preference	Red herrings
Colour coding	Surface treatments & fixture alloy
Kit size	Giant startup package deals
Cost over time	"Free" stuff in startup package
Connection "feel"	Laboratory opinion
Perceived soft tissue response	Promise of referrals
Comfort and familiarity	Unconfirmed name-dropping by sales reps
Where in the world you practice	

Straumann Holding AG straumann



Straumann Holding AG straumann



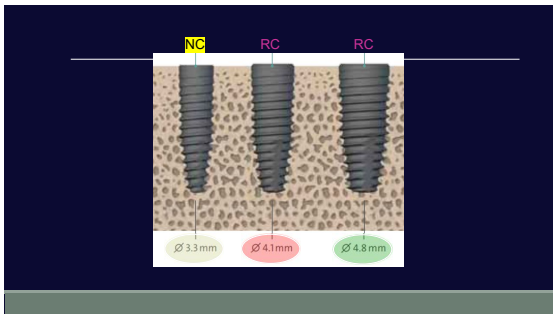
Life just got way more complicated.

1. Stay away from tissue level.
2. Pick one system

Why we are teaching Straumann BLT…

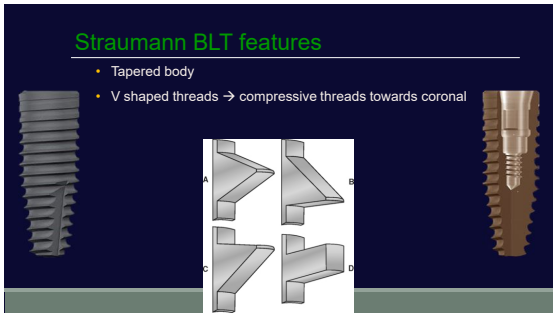
and suggest it as a starter system:

- You can use them in all situations, only one system to buy.
- One of the easiest systems to learn.
- Easy to restore, with lots of OEM restorative options.
- They have actual sales reps. Here in Edmonton.
- Lots of parts and support avail in Edmonton area.
- Options to add to your implant armamentarium later (guided, 2.9SC, full arch, etc.)



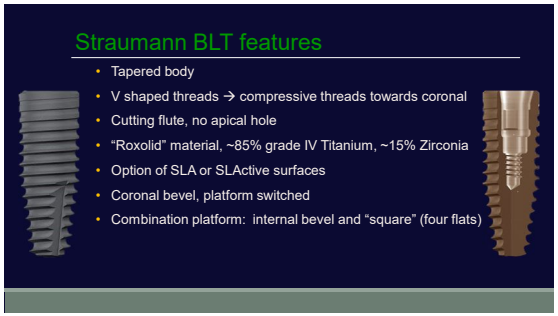
Straumann BLT features

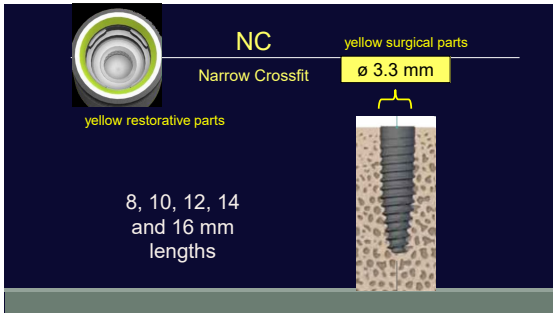
- Tapered body
- V shaped threads → compressive threads towards coronal

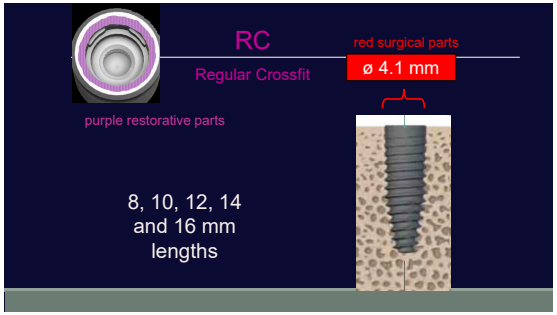


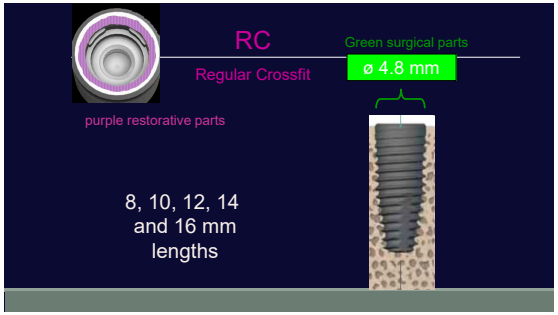
Straumann BLT features

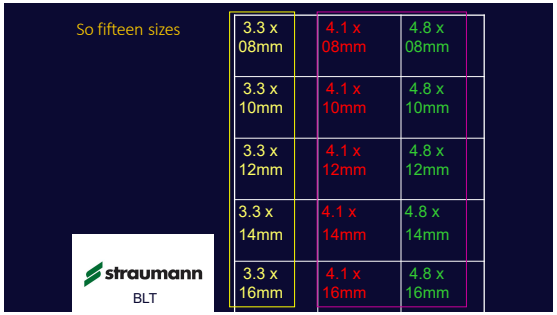
- Tapered body
- V shaped threads → compressive threads towards coronal
- Cutting flute, no apical hole
- "Roxolid" material, ~85% grade IV Titanium, ~15% Zirconia
- Option of SLA or SLActive surfaces
- Coronal bevel, platform switched
- Combination platform: internal bevel and "square" (four flats)











pitfalls

08 mm long implants…

Handy but use with caution while learning. Think "crown:root ratio", except in this case it's "implant crown height".

Not all of that 8 mm is necessarily in "bone-implant contact", or "BIC"

If we go with only 08mm length, we will often go up one size in width.

16 mm long implants…

…primarily for immediate placement following extraction. Not something you will likely use for quite a while yet.

Straumann BLT 2.9s

A handy implant for us, but we suggest avoiding until you have more experience.

06 mm long implants…

…not for beginners at all.

Average mesiodistal widths of teeth (mm)

much more valuable for determining implant size

	Maxillary	Mandibular	
Central incisor	8.6	5.3	
Lateral incisor	6.6	5.7	
Cuspid	7.6	6.8	7s
Bicuspid	6.9	7.1	
First Molar	10.4	11.4	10s
Second Molar	9.8	10.8	

(remember the Rule of 7s and 10s)

We'll also need lots of bits and parts…

- Analogs, impression copings, abutments, abutment screws, torque wrenches/drivers that we learned about last session
- Drills, extensions, guide pins, thread taps, implant drivers, healing abutments, cover screws, bone profilers and more, that we will learn about today

Implant placement theory

2FA4

A step-by-step recipe to get you started

Implant step-by-step procedure (v. 2025.0)

1. Records and treatment planning
2. Book adequate time including setup and cleanup
3. Ensure adequate implant inventory on hand, plus hoses, saline, etc.
4. Obtain informed consent
5. Anaesthetize, swab area w disinfectant, drape patient as desired, scrub
6. Incision and flap if indicated
7. Check 850rpm / 30N-cm / irrigation on. Lance drill to establish entry point
8. Blue 2.2 mm pilot drill to 8 mm, guide pin, confirm direction, take radiograph
9. From radiograph calculate probable implant size, reconfirm inventory
10. Blue pilot drill to full calculated length
11. If flapless, use cookie cutter to remove circle of soft tissue
12. Sequentially larger drills 850rpm w irrigation, check direction each step
13. Cortical drill (also thread tap if very hard bone)
14. Rinse site thoroughly with saline, remove any tissue tags, re-rinse
15. Turn off irrigation, place implant at low rpm with handpiece
16. Use torque wrench/ratchet to finish
17. Cover screw or healing abutment, suture to close if necessary
18. Inject steroids to site if desired
19. Final radiograph
20. Post op instructions

1. Records and treatment planning

Minimum records are:

- periapical or panoramic radiograph
- medical history incl medications list
- dental charting indicating a complete examination has been done

Remember, this is the absolute minimum.

We will discuss paperwork at length tomorrow.

2. Book adequate time including setup and cleanup

Infection control compliance takes time!

Complying with both CDSA and AHS IPC regulations takes your staff a lot of time, when setting up and taking down from implant surgery. This is especially true when just starting out.

IPC will be discussed in detail tomorrow. For now, just recognise that we have to…

…use the normal clean technique you would use for restorative, plus:

1. Clear out and double wipe operatory
2. CSR double wrap and pack instruments, with spore test and quarantined
3. Sterile sided towel or drape
4. Scrub tissue area with Peridex or iodine
5. Sterile saline or sterile H_2O to rinse
6. Sterile disposable hoses for irrigant
7. Wear sterile gloves during actual placement (handling implant drills)—realistically, gown and sterile gloves the whole time

Bottom line: you need to book more time, esp while you **and your assistants** are learning

Homework: tell your staff…

…only book one implant placement per half day at first (or maybe better yet, just one per day) because of sterilisation/ quarantine requirements.

Implant placement is a full uninterupted hour.

3. Ensure adequate implant inventory on hand, plus hoses, saline, etc.

Implant parts required:

- Projected implant
- His "friends", *i.e.* additional implants in similar sizes
- Cover screw(s)
- Healing abutment(s)

Implant drill units

- All implant drill units work.
- Irrigation pump should be part of the same unit.
- Cheaper units are often louder and some tend to be less reliable. Also watch out for non-variable speed foot pedal.
- Not all E-type fittings are interchangeable.
- Can be used for implant placement, as well as oral surgery AND a backup or portable handpiece.
- Not really usable for rotary endo…yet.

Irrigant

- Normal saline vs. sterile water vs. D5W
- 1L vs. 500mL vs. 250mL
- Refrigerated vs. room temperature

The red circles are what we do.
Any of these are fine though.

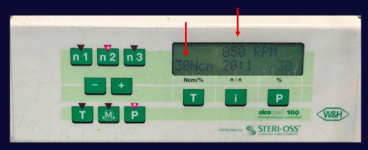
Note recent saline shortages.

4. Obtain informed consent

5. Anaesthetise, swab area w disinfectant, drape patient as desired, scrub

6. Incision and flap if desired

7. Check 850RPM / 30N-cm / irrigation on Lance drill to establish entry point



Why we have gone to 850 / 30

- Functional for all stages of procedure
- We observed students were frequently confused
- We observed students rarely running at full displayed speed anyway
- General dentists have the touch to handle tapping and placement
- Manufacturer's recommended protocols are for only average bone densities encountered anyway

Only thing you have to adjust is turning off irrigation for placement.

You are welcome to use implant companies' suggested protocols if you prefer, or to tinker (*e.g.* 1000 / 35).

Drilling, and therefore implant position, has three components:

I. Platform location—"Where do we start drilling?"
Easy to learn

II. Implant angulation—"What direction should it point?"
Harder

III. Platform depth—"How deep do we sink the implant?"
Hardest thing to learn!

I. Position of the implant platform

In most instances, the adjacent or contralateral teeth will dictate.

Knowledge of average tooth M-D dimensions is essential.

Time to use the Lance Drill

(Straumann calls it a "Needle Drill")

8. Blue pilot drill to 8mm, guide pin, confirm direction, take radiograph

II. Orientation

Implants are ideally oriented perpendicular to occlusal plane.

In reality, the bone and adjacent teeth (and roots!) dictate direction to a large degree, especially in the maxilla.

The implant should point at the opposing tooth's central groove or functional cusp.

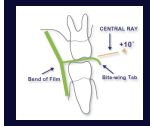
Climb out of your chair!

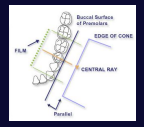
View angulation from three aspects…

- From buccal compared to adjacent teeth
- From anterior—look down central grooves of adjacent teeth
- Look straight down pin

We require a periapical radiograph, taken at a bitewing angle.

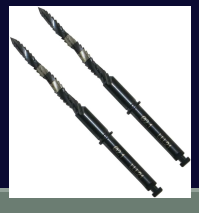
Sometimes you will need two (2) radiographs, one to see the apex, and one to see the crestal bone.





Kischner or Lindemann side-cutting bur

- can be handy to transport osteotomy

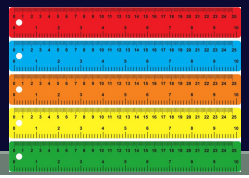


Straumann sells a Lindemann with standard depth markings

9. From radiograph calculate probable implant size, re-confirm inventory

Homework project

Figure out how to use measuring utility in your radiography software



10. Blue pilot drill to full calculated length

3. How deep do I sink the platform?

factors

- depth of collar in bone
- depth of collar to soft tissue at crest
- inter-arch clearance, if limited
- risk from inadvertent loading
- height of available bone
- note that bone is rarely flat in the site

Remember these are bone level implants

3. How deep do I sink the platform?

- Much more leeway in posterior—use the bone rather than the soft tissue as a guide
- *__If in doubt, go 2-3 mm past the gingival zenith__*
- This is one of the hardest things to teach (and learn) in implantology—requires experience to judge

11. If flapless, use cookie cutter to remove circle of soft tissue

Often not used until the end instead.

Can also be used to cut the edge out of a flap prior to closure.

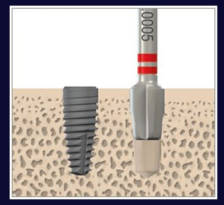
We will discuss further tomorrow during Soft Tissue Management.

12. Sequentially larger drills at 850rpm with irrigation, check direction each step

Drill sequences and mechanics

- Plan your drilling sequence once implant size chosen
- Don't trust the markings in the box, staff can put drills, etc., away in the wrong holes!
- Continually re-assess positioning, and guard against drifting
- Irrigation and "pumping" action
- You are a drill press
- Each subsequent drill will be easier
- Noobs tend to over-prepare osteotomies…get in and get out
- Get out of your chair if you can't see!

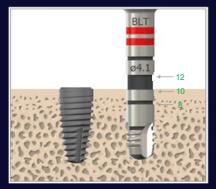
13. Cortical drill, + thread tap if very hard bone



Cortical drill…

- converts osteotomy to "tapered"
- important to prevent pressure necrosis at cortical

13. Cortical drill, + thread tap if very hard bone



Thread tap…

- only used in very dense (cortical) bone
- rarely used in our office
- can be removed with torque wrench if stuck

14. Rinse site thoroughly with saline, remove any tissue tags, re-rinse

- caution if potential sinus perforation
- why are tissue tags bad?

15. Turn off irrigation, place implant at low rpm with handpiece

The humble Loxim fixture mount

Optional: "dunk" implants in gentamycin solution

- benefits of local vs systemic antibiotic
- gentamycin is only antibiotic shown to promote angiogenesis
- we do not use in pregnant pts

16. Use torque wrench/ratchet to finish

How tight?
Torque for implant placement

Refers to the rotational force that must be used to overcome the relative resistance of the bone

Searching for the "happy medium" between initial stability and pressure necrosis

Optimum varies by situation, but typically **between 15 and 45 N-cm** for Straumann BLT

Concept of initial stability

Represents **mechanical** fixation of the implant to bone

Relaxation occurs over first two weeks

Sometimes called "primary stability"

Secondary stability

The 'Biologic Contribution', represents ongrowth of bone

May or may not add to initial stability

Final implant position should be

1. One of the flats to the buccal
2. Desired platform depth
3. "Acceptable" initial stability
   NOT a specific number of N-cm, will vary with situation

Assessment time

- M-D and BL position
- Implant angulation
- Platform depth
- Initial stability
- Orientation (flat to buccal)

17. Cover screw or healing abutment, suture to close if necessary

One stage versus two

Generally we do single stage (placing a healing abutment at the time of surgery)

- Saves a surgery
- Saves time and cost
- Saves the pt being frozen 2nd time
- Helps to develop emergence profile
- Bloodless impression appointment
- *May* contribute to progressive loading

We will place a cover screw when:

- Poor initial implant stability, *e.g.* a spinner
- Primary closure desired over extensive graft
- We want more KG to grow over the site to use later

18. Inject steroids to site if desired

An under-utilised drug in dentistry:

dexamethasone 4mg/mL

usually 40 units (0.4 mL) SC injection

may use 20 units (0.2 mL) if only 10mg/mL available

Do NOT inject IM

19. Final radiograph(s)

20. Post-op instructions

Vitamins?

1. Theoretical benefit to Bs + C for first few days
2. Based mainly on research following wisdom tooth removal
3. Some of that research only looked at vitamin C
4. Not all vitamin supplements are the same, read the label

Not necessary for the straightforward cases you guys are doing.

Analgesics

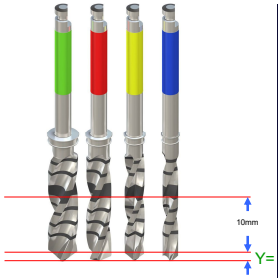
1. Most simple cases require 2 x 200mg ibuprofen when the freezing is wearing off…and that's it
2. Sometimes more if concurrent extraction
3. More complex cases: ketorolac 10mg x 20, 1 q4-6h
4. Acetaminophen: note 3g daily maximum. (Was 4g.)
5. Acetaminophen w codeine: only in rare cases.
6. If pt needs anything stronger, something is wrong.

Pain and infection ↑ with time flap open

Antibiotics– a crash course

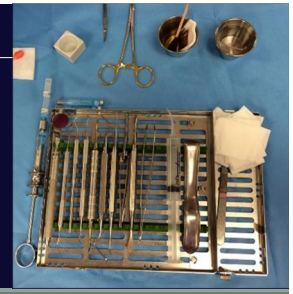
1. Most simple cases do not need antibiotics at all
2. Most cases needing antibiotics require one pre-op dose…and that's it
3. Cases with local infection can be extended 4-10 days
4. Choices are amoxycillin 500mg, 2g 1h preop +/- tid x5d
   clindamycin 300mg, 600mg 1h preop +/1 qid x4d
   clarithromycin 500mg q12h x7d
5. If mx sinus is involved—different bugs…use
   amoxycillin w clavulinic acid (500F) q12h x7d
   clarithromycin 500mg q12h x 7d

Y!



Instrument list

- XCP or whatever radiographic holder you prefer
- Air-water syringe tip
- Your typical exam kit—mirror, explorer, probe, cotton pliers, articulating paper forceps if desired
- Needle driver and Scissors
- Scalpel handle with millimetres marked
- Anaesthetic syringe
- Minnesota retractor
- Molt 2/4 curet
- Periosteal elevator, small to medium in size
- 60 cc irrigation syringe, Monoject 412 works well
- Ceramic dish for bone, a dappen dish or old Alvogyl jar will work to start
- Iodine cup for saline, or two if you want to toss used small parts into saline
- One additional instrument to keep clean for handling saved bone, use an old Hollenback or any old instrument you have laying around



Healing period

2FA5

How long until you can load your STI?

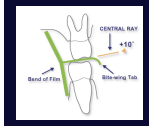
- What does "loaded" mean?
- Minimum: **12 weeks (3 months)**
- If in doubt, four to six months is safer, esp in the maxilla
- Concept of "progressive loading"
- Temporaries and healing abutments must be out of occlusion—the "daylight rule"
- Dentures or mastication can "load" an implant through the tissue
- If going minimum times, hold abutment with haemostat while torquing the abutment screw

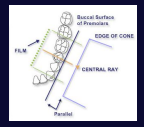
Review…healing times following extraction

- Remember, grafted sites heal slower than those with just a blood clot
- At the least, you want soft tissue healed over an extraction site, think 4-6 weeks as a minimum
- Immediate placement, or wait for healing, none of this "delayed immediate" nonsense
- We typically wait twelve weeks

We require a periapical radiograph, taken at a bitewing angle.

Sometimes you will need two (2) radiographs, one to see the apex, and one to see the crestal bone.





Hands on motor/handpiece, surg kit, & irrigation

2FP1

Equipment: the grand tour

- Motor unit—switch, fuse, adjustments, 850/30
- Foot pedal
- Motor cord—autoclavable (note E-type cap)
- 20:1 handpiece—latch/button, disassembly, irrigation port
- Handpiece rest
- You now own a spare handpiece

What to do when it doesn't work?

Irrigation setup

- Using the correct tubing
- Cannulae and ports can be fragile
- Note bayonet
- Peristaltic pump (paddlewheel)
- Filling dishes, priming line
- Precautions with drill extension or guides

Again, what if it doesn't work?

Why is irrigation critical?

*Bone will **die** at 40C for 7min or 47C for 1min*

We must keep bone cool during drilling.

- sharp drills, let them do the work
- intermittent drilling, "pumping" action
- copious irrigation
- chilled coolant, either saline or H_2O

Tour of the surgical kit

- Assemble the torque wrench
- Lance and other prep drills, drill extension
- Pilot drill and guide pins, short and long
- Sized drills
- Cortical drill, thread tap
- Implant drivers and torque wrench
- Screwdrivers
- Other stuff

Remember: surgical kits are not sacred!

You will find that you add, subtract, and move around components based on your preferences. We tend to:

- Bag the supplied round burs and store separately
- Add a lance drill
- Add short Straumann guide pin
- Add cookie cutters
- Add a Kirschner or Lindemann side-cutting drill

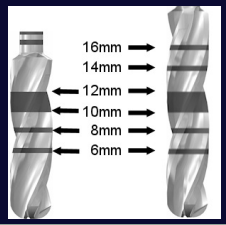
Osteotomy drilling mechanics

2FP2

A different drilling style from operative dentistry

- Full speed when drilling, no “picking”
- Intermittent motion to keep drills cool, think “pumping motion”
- Enter the osteotomy at speed
- Drill always in motion inside the osteotomy
- Remember, most common rookie mistake is to OVERprepare the osteotomy…get in, get done, get out

Review drill depth markings



- Long and short have same markings
- Beware the occasional 4mm marking on some drills

Hands-on drilling time

2FP3

Block drilling

- Set unit at 850 RPM
- Identify 8 mm line on blue 2.2mm pilot drill, when turning and when not
- Drill into blocks with both lance and pilot drills
- Try all four different blocks
- Try entering at a slope
- ***do not** drill holes through into table top place on maxilla model if you have to usually safest on the tray***

Osteotomy prep in maxilla I

- Maxilla models, drill unit at 850 rpm
- Stick with flapless for now if gingiva present
- Establish entry point with lance drill
- Blue 2.2mm pilot drill to 8mm, place long guide pin
- Now assess angulation:
  - From buccal
  - Bird's eye view down pin
  - Down central grooves in quadrant
- Once you are happy, extend pilot hole to full length

do not drill holes in Colleen's table!

Osteotomy prep in maxilla II

- Maxilla models, drill unit at 850 rpm
- Stick with flapless for now if gingiva present
- Yellow 2.8mm and Red 3.5mm drills to full length
- Again, at each step, assess angulation:
  - From buccal
  - Bird's eye view down pin
  - Down central grooves in quadrant
- Use red cortical drill to complete osteotomy

do not drill holes in Colleen's table!

Before we can finish up and place our implant on the maxilla, we need to review a few more concepts:

- Thread tapping (rarely required, but still need to know)
- How to open the implant pkg
- Carrying implant with the driver and Loxim
- Placement torque
- Use of the torque ratchet driver
- Orientation of the lobe

Thread tap hands on

- Use implant (external hex) machine driver
- Machine still at 850/30 but slow down by letting up on foot pedal. Irrigation not necessary.
- Do not angle handpiece
- Let thread tap walk itself in to osteotomy
- Depth markings the same as on the Straumann drills
- Must put handpiece in *reverse* to remove screw tap
- Can use torque wrench if/when stuck in the bone

Torque ("initial stability") for implant placement

for tapered implants
35 to 45 N-cm considered ideal

…but you won't always get this, especially with small implants or in the maxilla

Aim for 15 to 45 and sleep well.

Osteotomy prep in maxilla III

- Maxilla models, drill unit at 850 rpm
- With a partner, dispense implant and affix to handpiece using driver and Loxim
- Complete placement with torque wrench
- Tinker to get implant to perfect storm…
  - Platform depth
  - Initial stability 5-45, ideal ~35
  - One dot on Loxim to buccal

Critique your placement with your partner

Too much torque…

When finishing placement by hand, if your implant does not seat with 45 N-cm… *bypassing* the ball on the manual torque driver will easily achieve **200** N-cm, and even **300** N-cm with effort!

- damage may occur to smaller implants
- fracture of the buccal plate, or worse, is possible

What to do if the implant will not seat fully at 55-60 Ncm?

1. back implant out, keeping clear of saliva
2. place implant somewhere clean and safe
3. further modify site

   e.g. re-drill, re-use cortical drill, use thread tap
4. rinse implant w saline and re-insert

45/90

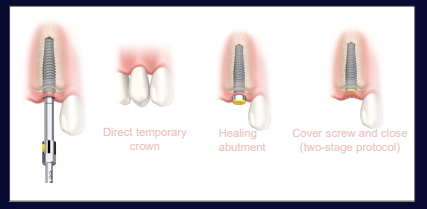
Putting it all together

- Place two implants start to finish in maxilla
- One flapped, one flapless (if gingiva present on this year's models)
- Complete with healing abutment (or cover screw)
- Refer to step-by-step sheet if req'd
- Critique each others' placements

Healing abutment selection

2FP4

There are three options for finalizing the placement



Healing abutment selection

- When to use a healing abutment versus a cover screw
- Hands-on review of different healing abutment shapes and sizes
- If in doubt, go flared
- What to do when healing abutment will not seat

Let's look at and handle some healing abutments

Ø 4.5 mm, H 2.0 mm	Ø 5.0 mm, height 2.0 mm
Ø 4.5 mm, H 4.0 mm	Ø 5.0 mm, height 4.0 mm
Ø 4.5 mm, H 6.0 mm	Ø 5.0 mm, height 6.0 mm
Ø 6.0 mm, H 2.0 mm	Ø 6.5 mm, height 2.0 mm
Ø 6.0 mm, H 4.0 mm	Ø 6.5 mm, height 4.0 mm
Ø 6.0 mm, H 6.0 mm	Ø 6.5 mm, height 6.0 mm

What if the healing abutment will not seat?

Bone profiling sets are intended to be used for removal of surrounding bone and soft tissue remnants around an implant head/platform.

Straumann BL has a NC and a RC guide and three different flares of bone profiling drill that will all fit on either guide.