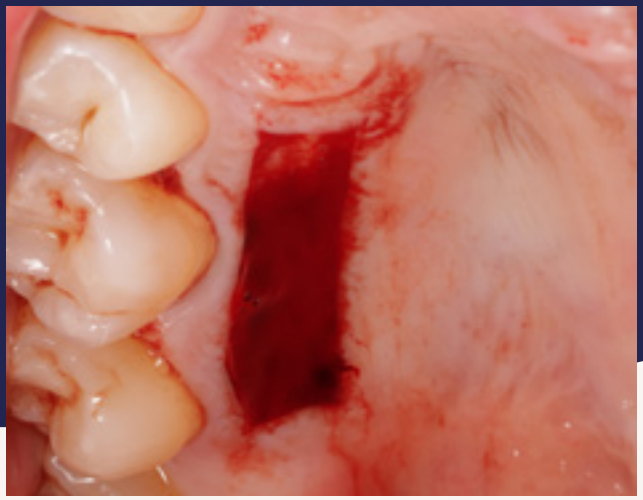
elemental®

The Elemental Workflow

to protect the donor site after
harvesting tissue from the palate



Protocol, Cases & Science

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before you start

what you will need

- Elemental Waterbath with mixing glass & tweezers
- Elemental Granulate

The Elemental Workflow in a nutshell.

heating the material

- To manipulate the material, it must be heated for 10 seconds.
- This can be done with 80°C water.

creating the stent before the surgery

- Pre-operatively, the heated material is shaped directly on the palate.
- The material sets & becomes a solid stent in 1-2 minutes.

post-operative instructions

- The patients wears the stent for 7 days post-operatively.
- Pain is minimized & healing accelerates.

Best practice

Create the stent in advance, right before the surgery.

1. Clinically: If you create the stent in advance, the space where tissue is removed is left open for the blood clot to develop.

   If you create the stent after harvesting the tissue, you'll push the material in this space.

2. Practically: creating the stent in advance will be faster & easier than creating the stent during the surgery.

Heating the material.

Boil water or use an Elemental waterbath to heat water to 80°C.

Stir the granules for 10 seconds in the heated water.

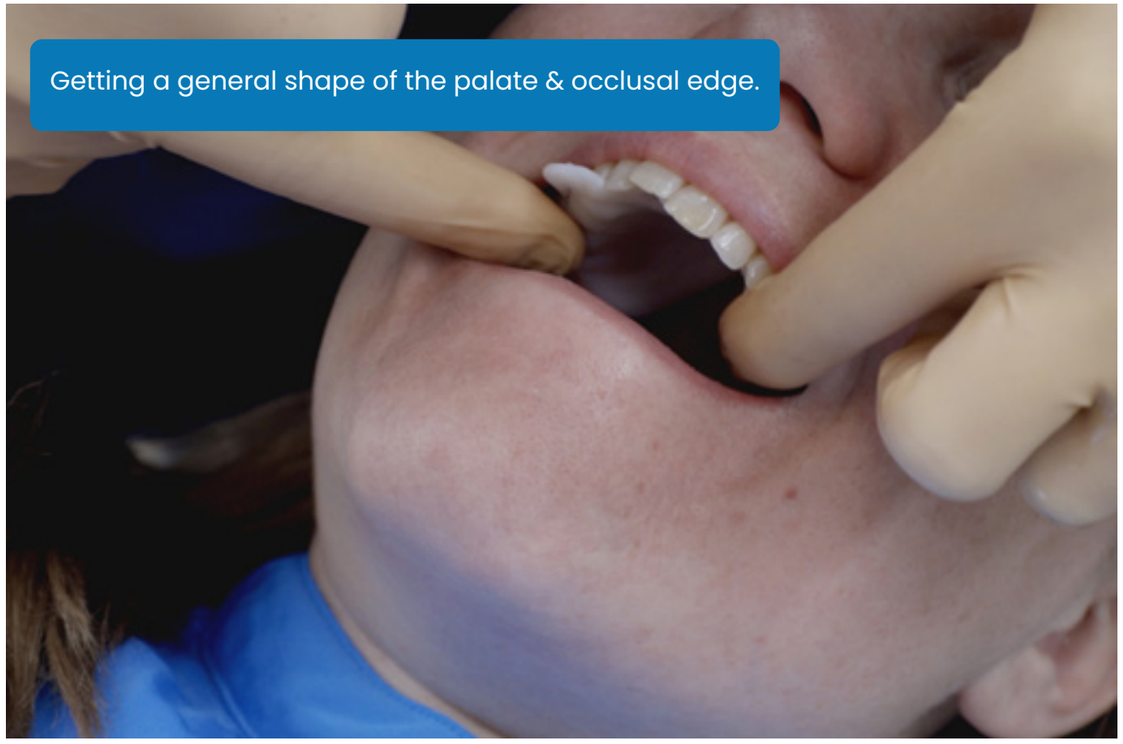
Dosage: 1 stent takes about 3 grams, which is 1/3 of a packet.

The material is now a mass you can mold.

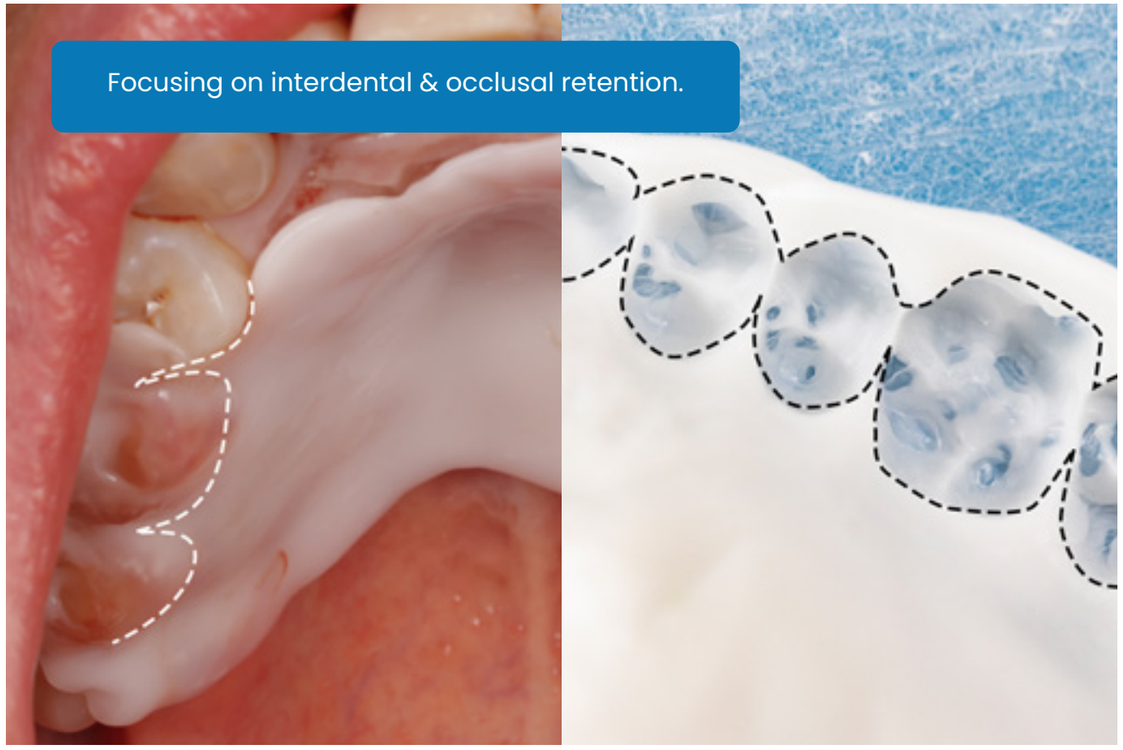
Shaping the stent with 2 fittings.

Optimal retention & stability can be achieved by heating & fitting the material twice.

1st fitting: getting the general shape



2nd fitting: getting the details right



Best practice

Use the **interdental embrasures & occlusal surfaces** to get retention.

FITTING 1

Obtaining the general shape.

Cover the palate & occlusal surface of the molars with the heated material.

Ask the patient to bite down & wait 1 minute for the material to set.

Reheat the material for about 5 seconds to prepare the 2nd fitting.

Scan to watch the video:

How to achieve retention when creating a palatal stent with Elemental

Best practice

Use the **interdental embrasures & occlusal surfaces** to get retention.

FITTING 2

Getting the details right.

Press the stent into the interdental spaces for extra retention.

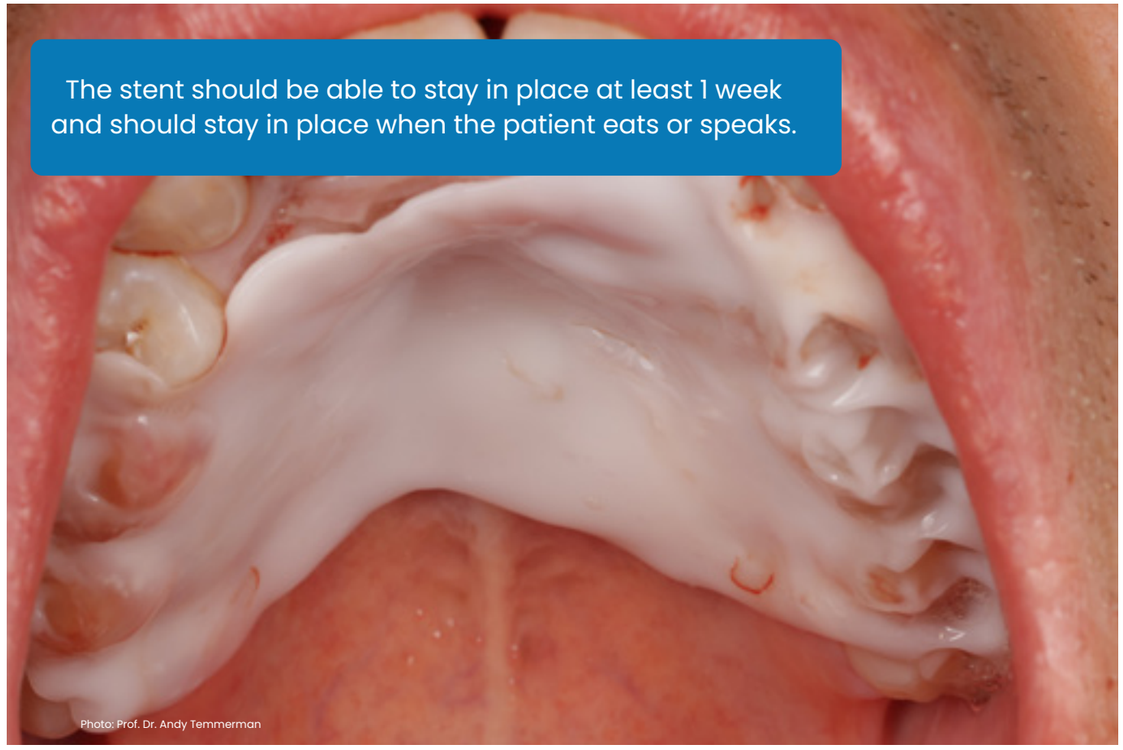
Ask the patient to bite down to get retention on the occlusal surfaces.

Scan to watch the video:

How to achieve retention when creating a palatal stent with Elemental

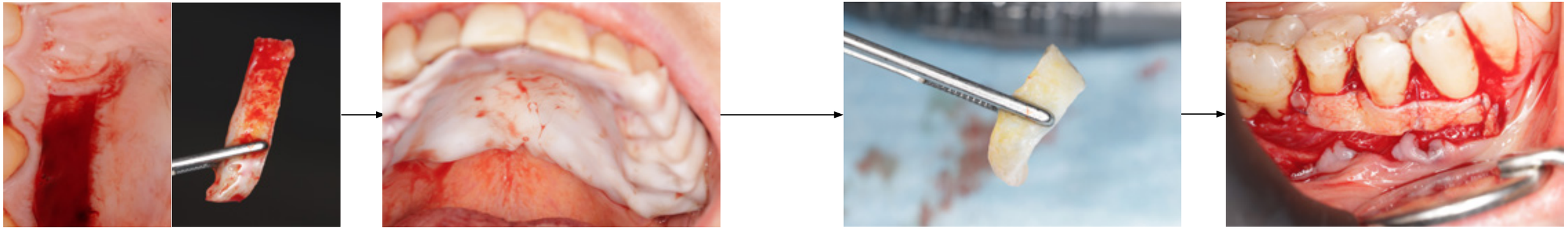
2 quality checks.

Check whether the stent has stable retention.



Check whether the patient can remove the stent and place it back themselves.

Place the stent immediately after harvesting the graft.



Photos: Prof. Dr. Andy Temmerman

Immediately after harvesting the graft, cover the donor site with the stent. There is no need for suturing the donor site as the stent stabilizes the blood clot.

Without delays, you can continue with the recipient site surgery.

Scan to watch the video:

The Elemental Workflow for Palatal Grafting

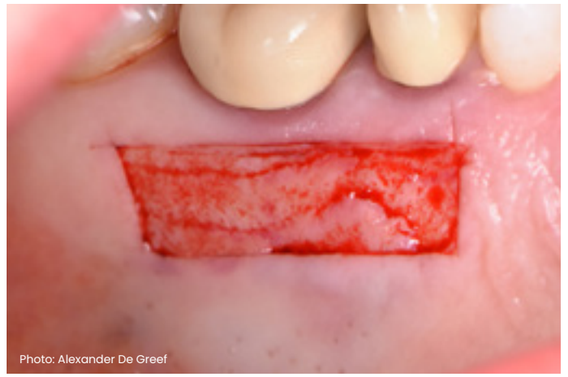
Tip: a premade example can be used to inform the patient about the benefits and stimulate patient compliance.

Patients wear the stent for 1 week.

Stimulate patient compliance by informing them of the importance & benefits in terms of:

- pain management
- healing
- comfort during eating
- general complications

Inform them they should wear the stent as much as possible, up to 7 days. While undesirable, patients can remove & wash the stent.



1 week healing

Photo: Prof. Dr. Andy Temmerman

Clinical cases in private practice.

Prof. Dr. Andy Temmerman

Free Gingival Graft to obtain increased keratinised tissue and root coverage

The free gingival graft is harvested.
No sutures are placed on the donor site.

The Elemental stent, created chairside before the surgery, is placed immediately after harvesting the graft.

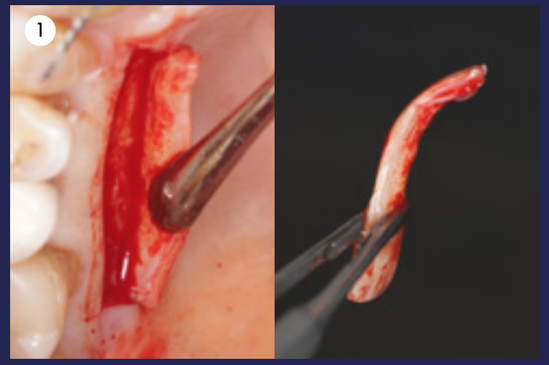
Without delays, the graft is placed on the recipient site.

Follow-up at 14 days shows excellent healing and re-epithelialization. Patient experienced no pain.

Elemental dramatically reduces the post-operative discomfort (fig. 4) which is of utmost importance, but also the surgical time by not having to suture the donor site. (fig. 1-2)

Prof. Dr. Andy Temmerman

Free Gingival Graft to obtain increased keratinised tissue and root coverage



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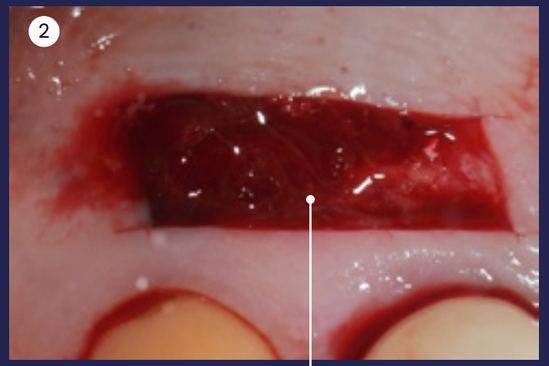
Rutger Dhondt

Free Gingival Graft to increase keratinized mucosa around implant

1

Right before the surgery, the material is shaped onto the palate to create the stent.

Clear interdental retention.

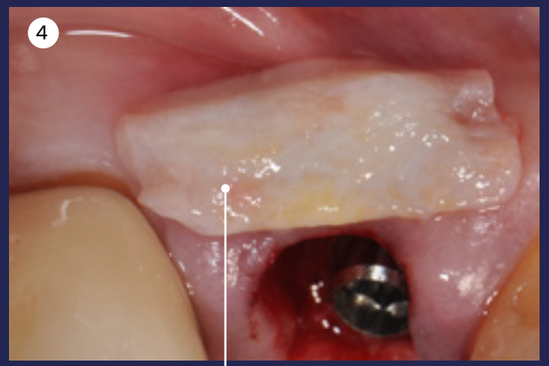


2

No sutures needed on donor site.

3

Blood clot is stabilized.
Stable retention in the interdental spaces.



4

Continue on recipient site without delays.

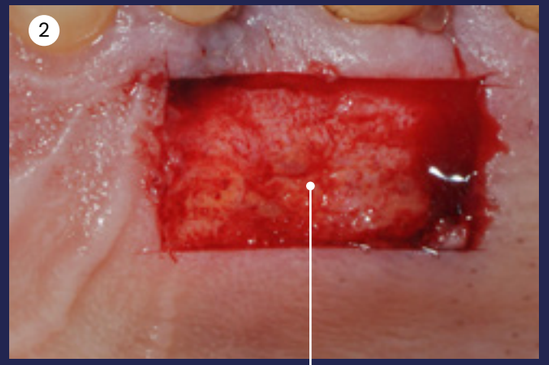
I create the stent right before the surgery (fig. 1) so I can place it immediately after harvesting the graft (fig. 2, 3).

At follow-up, patients only mention the recipient site. They don't even notice the donor site anymore.

Rutger Dhondt

Free Gingival Graft to obtain increased keratinised tissue and root coverage

Right before the surgery, the material is shaped onto the palate to create the stent.



No sutures needed on donor site.

Blood clot is stabilized.
Stable retention in the interdental spaces.

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Bo Molemans

Free Gingival Graft to obtain increased keratinised tissue and root coverage

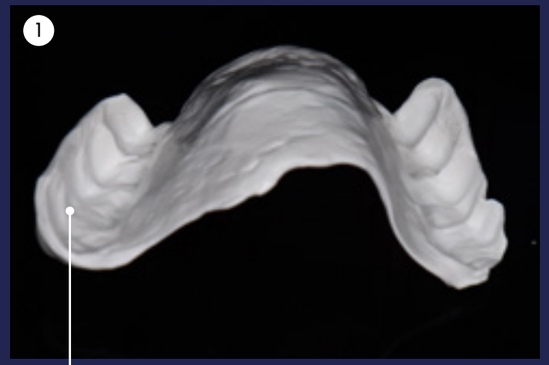
Retention on occlusal surface and in interdental spaces.

The stent is placed immediately after harvesting the graft.

The post-operative care on the donor site is reduced to a minimum, (fig. 3-4) saving 10-15 minutes of surgical time per case.

Alexander De Greef

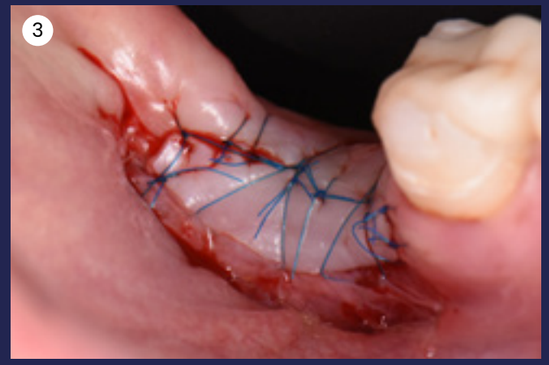
Free Gingival Graft to obtain increased keratinised tissue and root coverage



1

Right before the surgery, the material is shaped onto the palate to create the stent.

2



3

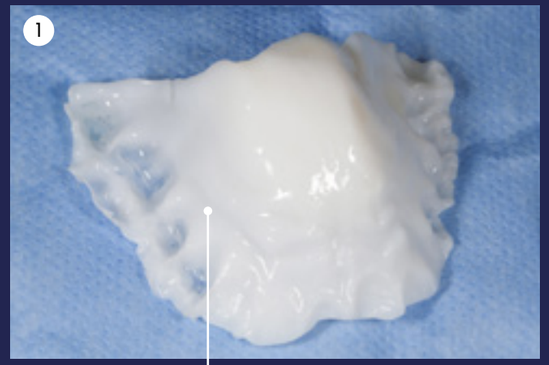
4

7 day follow-up reveals excellent re-epithelialization.

The healing in the first days post-operative is spectacular (fig. 4), patients are not complaining about post-operative discomfort anymore.

Dr. Haakon Kuit

Free connective tissue graft to treat multiple recessions in the upperjaw



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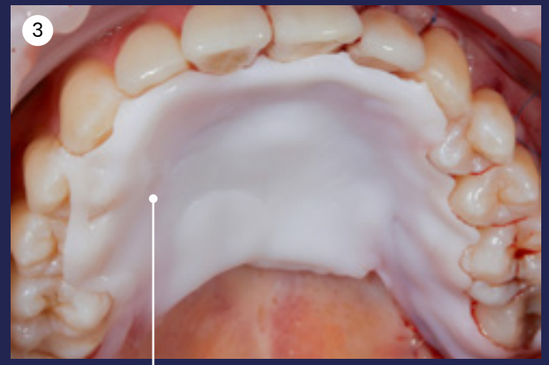


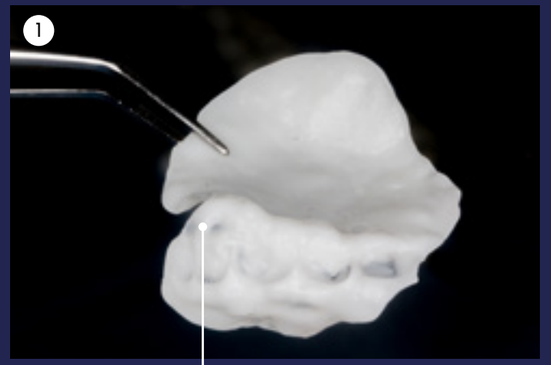
Blood clot is stabilized.
Stable retention in the interdental spaces.

Continue on recipient site without delays.

Protecting the donor site with the palatal stent (fig 3.), which is created chairside before the surgery (fig. 1), minimizes the post-operative pain for the patient.

Guillaume De Moyer

Free Gingival Graft for soft tissue augmentation around implant site



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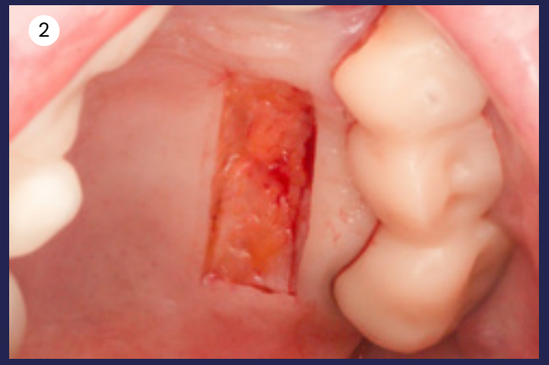
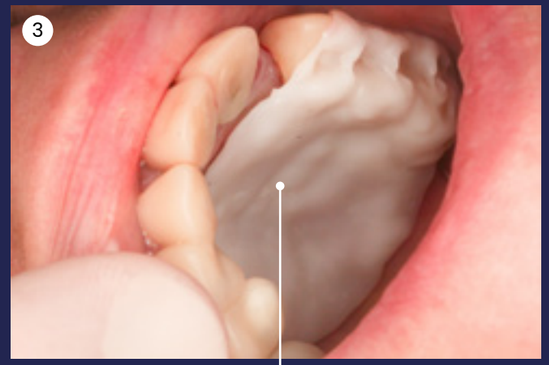
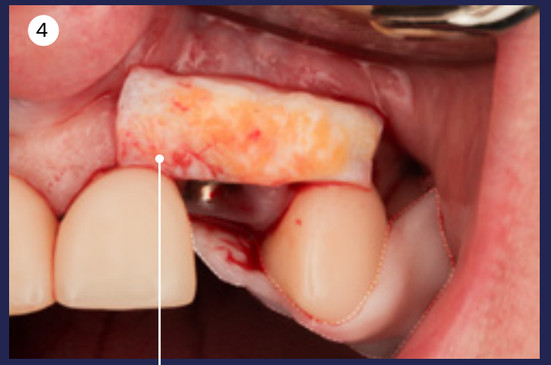




Immediately after harvesting the graft, the donor site is protected without having to suture.



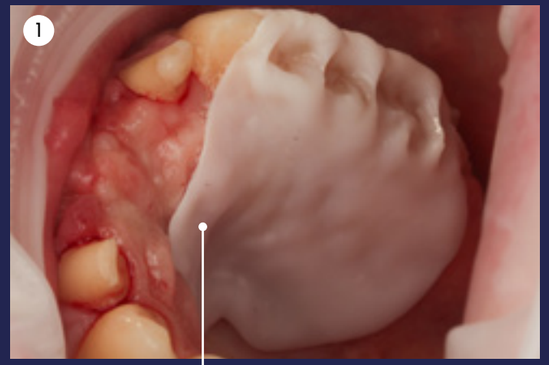
More time to focus on the recipient site since the donor site is covered & protected.

Right before the surgery I create the stent (fig. 1), so I can cover the donor site wound immediatley after harvesting the graft (fig 2-3).

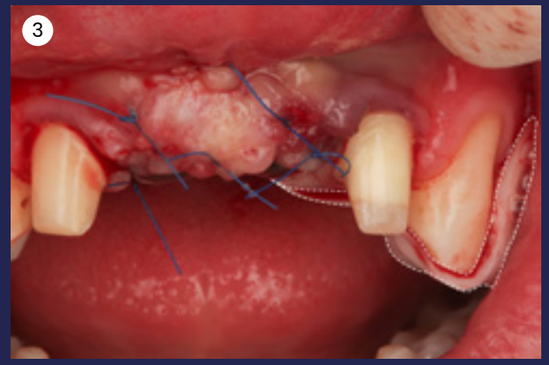
I don't lose time suturing the donor site, so I can focus much faster on the recipient site. (fig. 4)

Guillaume De Moyer

Free Gingival Graft for soft tissue augmentation around implant site



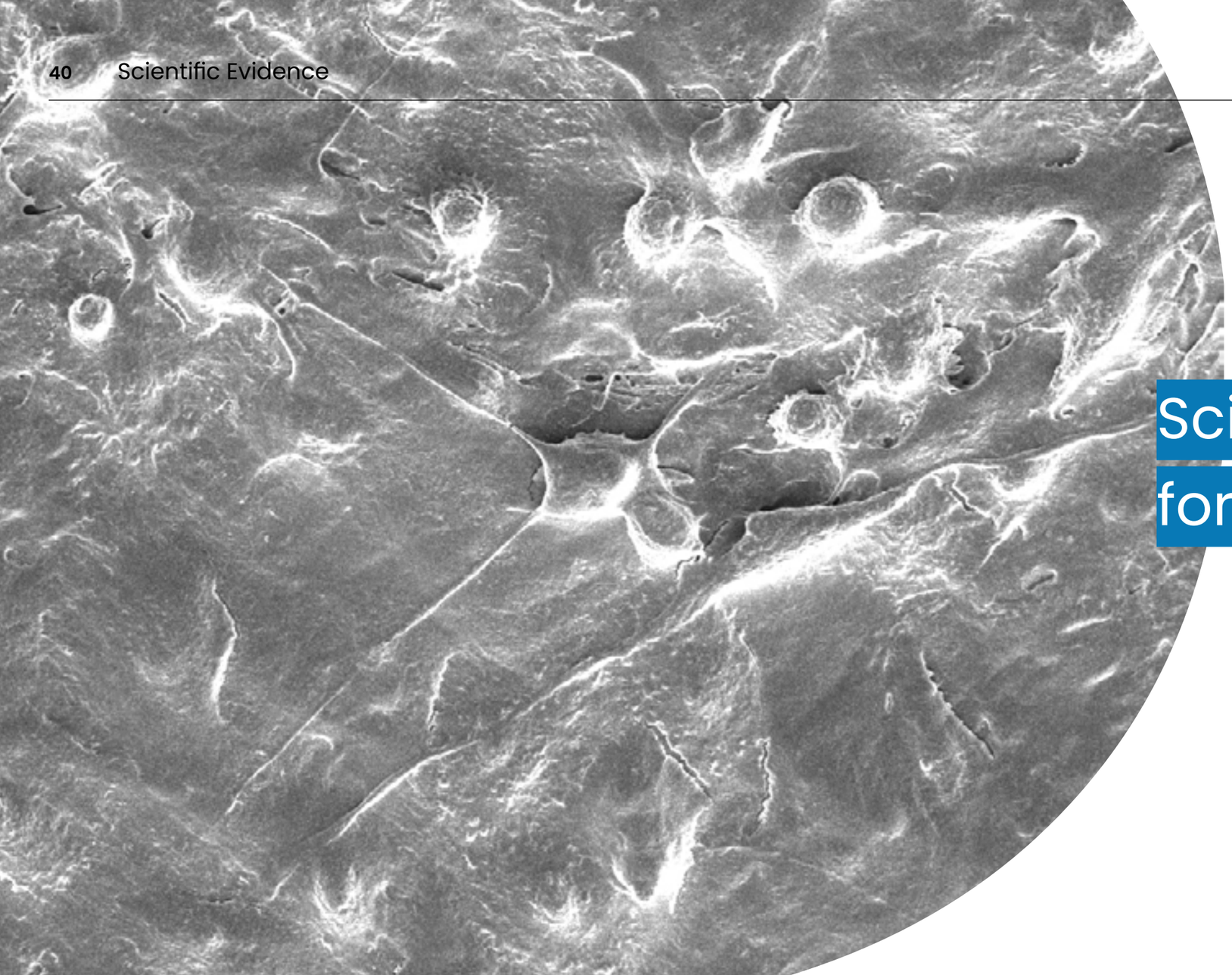
Right before the surgery, the material is shaped onto the palate to create the stent.



7 day follow-up reveals excellent re-epithelialization.

Right before the surgery I create the stent ,
so I can cover the donor site wound immediatley after harvesting the graft.

The healing after 1 week (fig. 4)
ressembles what I previously saw after 2 weeks.



Scientific Evidence for Elemental

Photo of heated granulate
by Guillaume De Moyer

PATENTED TECHNOLOGY

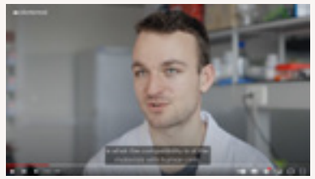
Elemental is based on a patented technology that infuses **zinc-oxide cations (Zn2+)** into polymers.

This makes our material:

- **Biocompatible with human cell growth**
- **Bacteriostatic**

Scan to watch the video:

Compatibility with Human Cells & Antibiofilm Properties



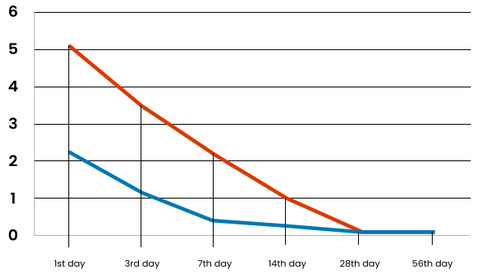
Pre-operative, chair-side Zn-containing surgical stents affect morbidity and wound healing after free gingival graft harvesting: a randomized clinical trial.

Clinical Oral Investigations

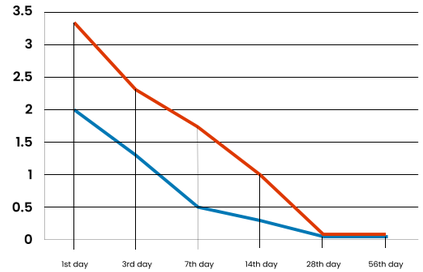
Objective: To compare a pre-operatively, chairside made, zinc-containing surgical stent (ZN) and suturing of a gelatin-based hemostatic agent (HA) on palatal wound healing and patient morbidity after free gingival graft surgery (FGG).

Conclusion: Pre-operatively, chair-side made, zinc-containing surgical stents provided significant benefits for wound healing parameters and patients' postoperative morbidity after FGG harvesting.

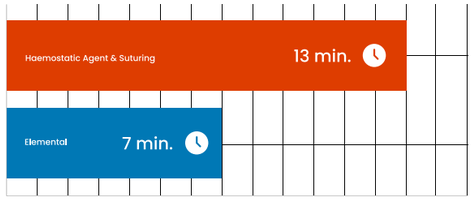
Post-operative Pain on donor site



Burning Sensation on donor site



Surgical time on donor site



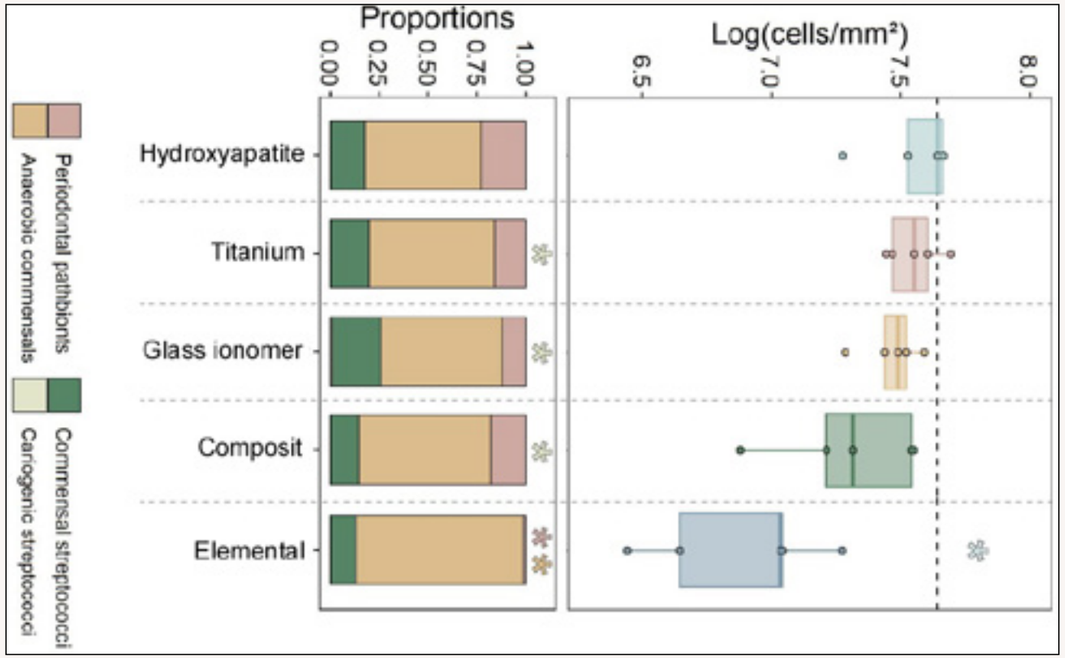
Group HA-S (Haemostatic Agent & Suturing)
Group Zn-S (Elemental)

"The study shows that Elemental minimizes pain, saves surgical time, and leads to spectacular healing."

Prof. Dr. Wim Teughels

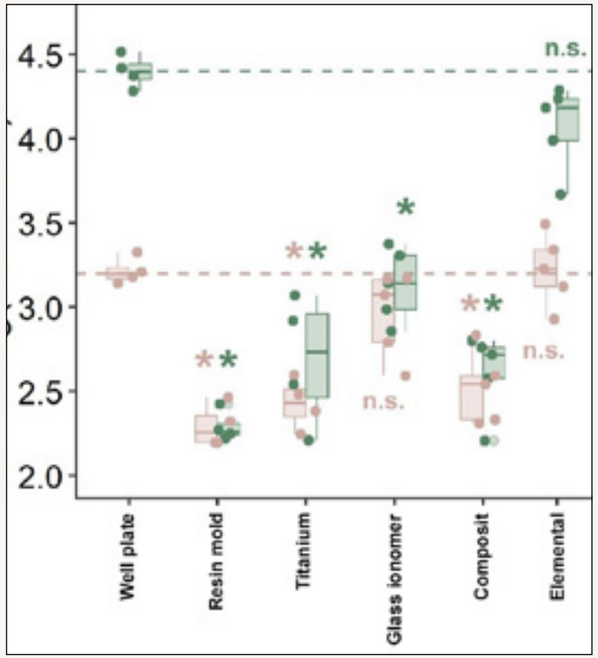
Experiments performed by KU Leuven University demonstrating **bacteriostatic properties.**

- **Oral biofilm growth inhibited on Elemental.**
- **The composition becoming less pathogenic.**



Experiments performed by KU Leuven University demonstrating **superior biocompatibility.**

- **Human keratinocyte cells growing best on Elemental.**

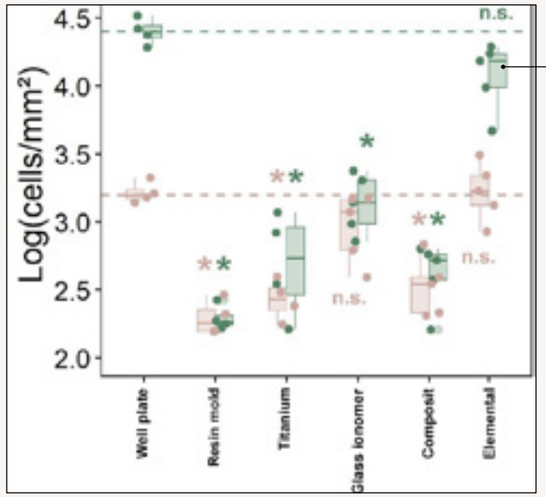


Testing biocompatibility through measuring the adherence of human keratinocyte cells.

Human keratinocyte cells grow on Elemental as good as they grow on a cell culture plate.

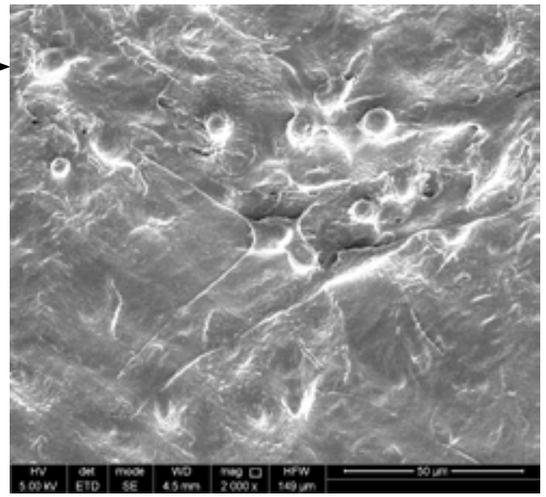
Experiments performed by KU Leuven University demonstrating **superior biocompatibility.**

Human keratinocyte cells growing best on Elemental.



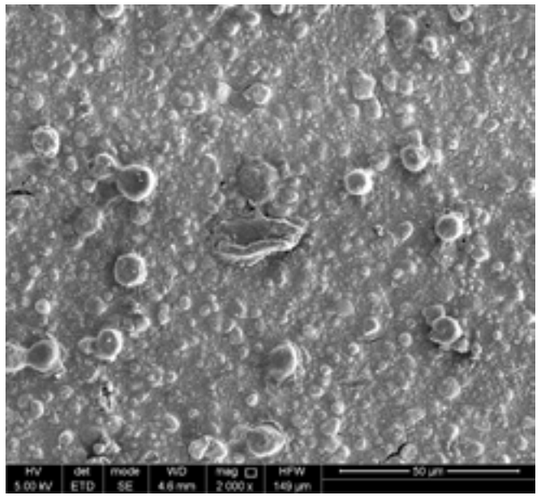
KU LEUVEN

Elemental



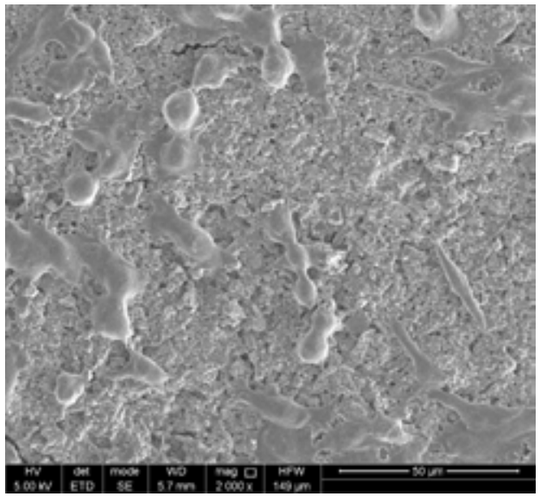
Elemental material fully covered in monolayer of healthy cells.

vs. **Composite**



Attached, unhealthy cells.

vs. **Glass Ionomer**



Monolayers attempting to grow.

How long does the patient wear the stent?

Elemental can remain in the mouth for up to 30 days. In reality, depending on the case, this is between 5-10 days. Depending on the design of the stent, it can be removed by the patient or during a follow-up check shortly after treatment.

How much granulate is needed for 1 patient? (see page 6)

This depends on the design of the stent. A package of granules contains 10 grams. A palatal stent on average requires ±3-4 grams of granules.

How warm should it be heated? (see page 6)

For optimal results, it is recommended to use water of 80 degrees Celsius and heat the material for at least 10 to 20 seconds.

How do I get retention? (see page 8)

The material is flexible, yet sufficiently hard to maintain mechanical retention. Mechanical retention is mostly achieved in the interdental spaces, undercuts and occlusal surfaces. Alternatively, Elemental Granulate can also be chemically bonded with universal bonding agents.

Can Elemental Granulate be polished?

Due to the thermoplastic properties of the material, frictional heat may cause remelting. If polishing is necessary, it is recommended to do this at a low speed and preferably with water cooling.

Can Elemental Granulate be reused?

Naturally, new material is always used on each patient. However, the material can be reheated to form a kneadable paste if the result is suboptimal.

How is Elemental Granulate antibacterial? (see page 45)

Elemental Granulate contains organic zinc salts that have a bacteriostatic effect. This reduces the attachment and growth of bacteria by up to 99.9% and keeps the stent and surgical site clean.

Can a patient consume hot food & drinks when wearing Elemental Granulate?

Hot drinks or food are generally not hot enough to remelt the material.
The patient can therefore eat and drink normally.

Can Elemental Granulate be used with sutures?

Although the recommended protocol does not prescribe the use of sutures, they can be used. To avoid adhesion of the suture line, it is recommended to prepare the stent in advance and apply it already hardened after suturing.

Does Elemental Granulate stick?

When heated, Elemental Granulate can become sticky, especially on plastics and nitrile gloves. Therefore, the use of metal instruments and latex gloves is recommended.

Graft the palate, avoid the pain.

"Since I use Elemental, I'm more proud of the care our clinic provides."

Bo Molemans

elemental®

www.withelemental.com

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