Oxygen therapy in dental treatment

Fundamentals of holistic dentistry

Scientific evidence, treatment
recommendations & case reports

A leading oral care brand

Introduction

Oral health is vital to a person's overall well-being, impacting their ability to eat, speak, and maintain self-esteem. The oral cavity hosts a diverse microbiota essential for digestion and maintaining oral and systemic health. However, when micro organisms adhere to oral surfaces and form a matrix-like film known as dental plaque, it can lead to pathogenic biofilms contributing to dental infections, periodontal diseases, and peri-implantitis. Traditional antiseptic agents contain harsh chemicals that can have adverse effects on the therapeutic effectiveness of conventional antiseptics and wound healing.

blue®m has developed a product line that provides a controlled release of active oxygen without generating hydroxyl radicals. This formula is based on different antimicrobial mechanisms of action than other conventional antiseptic agents and has shown a remarkable selective effect on the most periodontal pathogenic bacteria (known as the red complex). This is backed by various studies. blue®m is effective against the colonization and growth of pathogenic biofilms associated with most oral infections (e.g., periodontitis, peri-implantitis, and endodontic infections) and has the potential to aid in deep cleaning and decontamination of the soft tissues. The slow release of oxygen also supports, enhances and accelerates wound healing following tooth extractions, implant surgery, oral and periodontal surgery or complications after chemotherapy (mucositis).

This Guidebook aims to explore the importance of oral health and the latest research on anti-biofilm therapies, specifically the use of blue®m. Dental practitioners and hygienists can utilize this knowledge to better care for their patients.

Happy reading!

Minas Leventis, Hamdan Alghamdi, Tatiana Deliberador, Alberto Miselli, Irfan Abas, Ajay Kakar and Ana Paz.

Who
we are

blue®m is a leading oral health company, based in the Netherlands and Brazil. Our mission is to improve health and well-being through oral care. With a proven track record of over 10 years in the dental industry, blue®m is available in over 60 countries with an award-winning range of professional oral care products made for everyday life. The secret of our formula is the gradual release of oxygen in the mouth.

The mouth is the window to our overall health and therefore crucial to the quality and longevity of our lives. We offer a complete range of high-quality, high-tech oral care products that restore and improve your oral health from daily care to special care and on-the-go.
The best oral care anytime, anywhere.

Fokke Jan Middendorp
Blue®m co-founder

Dr. Peter Blijdorp
Blue®m co-founder

Our *formula*

We have known for centuries that oxygen plays an important role in many stages of the healing process. Our formula was specially developed by a team of talented and highly qualified oral and maxillofacial surgeons, implantologists and periodontists, led by Dr. Peter Blijdorp, founder of blue®m and an authority in the field of oral surgery.

The secret is in the active oxygen, derived from the enzymes in biological honey and an inorganic salt. This formula works as a powerful antibacterial treatment and contributes to the health of gums, teeth and implants.

Active oxygen is released in a slow, gradual and controlled way in the oral cavity, penetrating deeply into the tissues, eliminating harmful micro-organisms, balancing the oral flora like no other product is capable of.

Used and indicated in the offices of many renowned dentists all around the world. blue®m products are a safer and healthier alternative since they are free of chemical components such as triclosan, chlorhexidine and fluoride.

Dr. Peter Blijdorp

Dr. Peter Blijdorp, former oral and maxillofacial surgeon was increasingly determined to find the right path to accelerate wound healing.

With hyperbaric oxygen therapy (systemic use) in mind, Peter began to focus on the relevant use of oxygen topically.
He developed a formula that made the results of his research and surgical procedures more predictable.

Our **Mission**

It is our mission to help as many people as possible who suffer from mouth problems.

We do this in the footsteps of our founder, oral surgeon Peter Blijdorp. His most important goal for his patients: the fastest possible recovery with the least possible pain. He was extremely dedicated to help people and solve their problems with the benefits of ‘his’ oxygen.

Team blue®m has taken over from him. From its head office in the Netherlands, the team works every day, with passion, to create a better and healthier world.

Our **Goal**

blue®m’s goal is to contribute to healthy routines and daily oral care. The mouth is the beginning of the digestive system and, therefore, taking care of the mouth is essential for the well-being of the body. After all: healthy mouth, healthy body!

blue m

Built with **passion**

Approved by **professionals**

Supported by **science**

Based on **nature**

Based on the power of **active oxygen**

LIFE IS A MIRACLE

Oxygen

Biofilm Control

Not surprisingly, oxygen is a critical factor affecting the composition and activity of dental biofilms. Clinically, blue®m oxygen therapy is very effective against the colonization and growth of pathogenic biofilms that associated with most oral infections (e.g., periodontal diseases, peri-implantitis, and other oral infections).

Wound Oxygenation

Wound healing is a complex process, which it has oxygen as a prerequisite in almost every step. Topical therapies that release O_2 molecules are great allies in reparative processes, favoring increased cell metabolism, collagen synthesis, antibacterial activity, release of growth factors and angiogenesis.

The Pillars of the Active Oxygen

1. Increases cell metabolism
2. Increase synthesis of collagen
3. Increased activity bactericide
4. Promotes and facilitates the release of growth factors by the body
5. Increases angiogenesis and promotes revascularization

Benefits
of blue®m products

1. Instant release of oxygen
2. Does not develop microbial resistance
3. Free of toxic components such as triclosan, fluoride and chlorhexidine
4. Great penetration into tissues, reaching deeper bacteria
5. No side effects
6. Easy application and use

Mechanisms
Of Action

blue®m uses a TOOTh (Topical Oral Oxygen Therapy) active oxygen delivery mechanism, which works by releasing oxygen in a controlled manner and direct to the injured tissues. The contact of the components of blue®m products with the moist surfaces of the mucosa, saliva and blood generate a decomposition reaction, releasing oxygen in the form of peroxide of hydrogen to the medium.

At low concentrations of 0.003% - 0.015%, the active oxygen released has an antibacterial action and can promote angiogenesis, increased collagen synthesis, increase of cellular metabolism, and growth factors released by the body, improving the oxygen (O_2) transport capacity.

Active
Ingredients

Tissue healing:

Active oxygen

Applying blue®m (oral gel) to injured tissue accelerates wound healing. It is known that oxygenation at sites with peri-implantitis decreased significantly ($p < 0.05$) when compared to healthy sites.

Bacterial plaque control:

Active oxygen, honey and xylitol

Oxygen (O_2) molecules can penetrate much deeper into the biofilm to kill anaerobic bacteria than the chlorhexidine molecule ($C_{22}\ H_{30}\ Cl_2\ N_{10}$).

Antiseptic:

Methylsalicylate

Methyl salicylate has an antiseptic effect and some think that methyl salicylate can also have an anti-inflammatory effect.

Stimulates bone formation:

Lactoferrina

Lactoferrin potently stimulates the proliferation and differentiation of primary osteoblastic cells, aiding bone regeneration.

Be *amazed*

by our complete range of products

LIFE IS A MIRACLE

Daily care

Recommended for continuous use, blue®m products can be used daily to improve bad breath, have an antiseptic and anti-inflammatory effect, eliminate harmful micro-organisms, balancing the oral flora without causing side effects.

Special care

Recommended for patients who are undergoing dental or post-surgical treatment. It helps to control the sensitivity/pain of patients who have recently been operated on or who have mucosal lesions. Speeds up the healing process and minimizes the inflammatory action.

On-the-Go

For patients who are constantly on the move, we have the 'on-the-go' collection to continue their oral routine beyond the bathroom: this way they have their oral care set available at the office, in the car, at the gym or they can take it with them to their favorite holiday destination.

The *amount* and *source* of *oxygen* in our products:

Product	What is the oxygen source?	Amount of oxygen released
Toothpaste	Mel, Sodium Percarbonate	+/- 20 mg O_2/L
Mouthwash	Mel, Sodium Percarbonate	+/- 20 mg O_2/L
Oxygen Fluid	Sodium Perborate	+/- 40 mg O_2/L
Oral Gel	Sodium Perborate	+/- 100 mg O_2/L
Oral Foam	Mel, Sodium Percarbonate	+/- 20 mg O_2/L
Mouth Spray	Mel, Sodium Percarbonate	+/- 20 mg O_2/L


BEST PRODUCT OF THE YEAR 2017-2018 NETHERLANDS
BEST PRODUCT OF THE YEAR 2018-2019 NETHERLANDS
BEST PRODUCT OF THE YEAR 2019-2020 NETHERLANDS
BEST PRODUCT OF THE YEAR 2020-2021 NETHERLANDS
BEST PRODUCT OF THE YEAR 2021-2022 NETHERLANDS
Five consecutive years voted best product among Dutch consumers.
blue'm
oral gel
blue'm
oxygen for health
oral foam
cleans / conditions
blue'm
oral foam
blue'm
toothpaste

BEST PRODUCT OF THE YEAR 2018-2019 NETHERLANDS

Range of products

Daily care

Mouthwash

5 L
(chair side)

500 ml
(at home)

250 ml
(on-the-go)

- Exclusive formula with active oxygen for the care of teeth, periodontal tissues and mucous membranes.
- It works in the prevention and treatment of gingivitis, periodontitis and peri-implantitis.
- Speeds up the healing process and stimulates the growth of new blood vessels.
- Fights bad breath (if used regularly).
- Reduces micro-organisms (Bacteria, fungi and viruses), helps maintain the health of periodontal tissues, teeth and gums.
- Does not contain alcohol.
- Does not contain fluoride.

Range of products

Daily care

75 ml Fluoride Free (at home)

75 ml Fluoride (at home)

15 ml Fluoride Free (on-the-go)

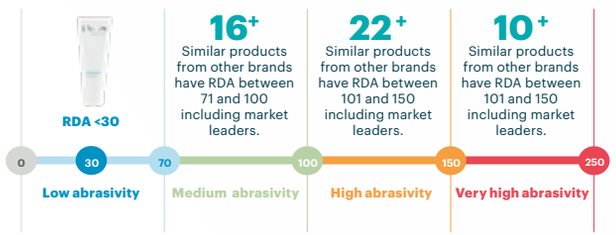
Toothpaste

- Exclusive formula with active oxygen.
- Less aggressive to the mucosa, teeth and implants* than other toothpastes.
- Works in the prevention and treatment of gingivitis, periodontitis and peri-implantitis*.
- Fights bad breath.
- Fluoride free toothpaste prevents oxidation of titanium in implants.
- Free of triclosan.
- Low abrasiveness compared to other toothpastes - dentin abrasiveness index (Relative Dentin Abrasivity - RDA) <30. Similar products have an RDA of 80, which accelerates tooth wear.

**this only concerns the Fluoride free toothpaste*

RDA | Relative dentin abrasivity

The toothpastes on the market have an RDA between 50 and 250, and the higher the RDA, the more abrasive the toothpaste. A toothpaste with a lower RDA value is desirable, thus being less abrasive and producing less damage to tooth enamel.



BEST PRODUCT OF THE YEAR 2017-2018 NETHERLANDS — Fluoride Free

BEST PRODUCT OF THE YEAR 2021-2022 NETHERLANDS — Fluoride Free

BEST PRODUCT OF THE YEAR 2020-2021 NETHERLANDS — with Fluoride

BEST PRODUCT OF THE YEAR 2019-2020 NETHERLANDS

The best way to thoroughly clean your clear aligner

Range of products

Daily care

100 ml (at home)

50 ml (on-the-go)

Oral foam / aligner cleaner

Simply incredible!

- Ideal for cleaning, depigmentation and maintenance of orthodontic aligners and mouthpieces.
- Helps in the health of teeth and gums.
- Operates in the control of oral flora and the reduction of micro-organisms (bacteria, fungi and viruses) from removable appliances.
- Instant refreshment and cleaning.
- Appropriate to the needs of patients in “home care” (people with oral hygiene difficulties).
- Moisturizes gums and oral mucosa.
- Prevents the formation of plaque in the mechanisms of orthodontic appliances.

Special care

500 ml
(at home)

Oxygen Fluid

Be amazed by the potential of active oxygen

- Exclusive formula with active oxygen.
- Neutral mouthwash.
- Relieves discomfort during chemotherapy and radiotherapy treatments.
- Improves healing, increasing oxygen levels in oral lesions resulting from cancer treatment. (chemotherapy/radiotherapy)
- Acts in the prevention and helps in the treatment of periodontitis and peri-implantitis.
- Fights bad breath.
- Helps control post-operative sensitivity and pain.
- Supplemental oxygen release (2x more oxygen release than regular mouthwash) to accelerate healing processes.
- Bactericidal action.
- Alcohol-free and fluoride-free.

Range of products

Special care

Oral gel

15 ml
(at home)

3 x 3 ml
(chair side)

Be amazed by the potential of active oxygen

- Exclusive formula with active oxygen. blue®m oral gel is the product with the highest concentration of oxygen.
- Healing action, due to the slow, continuous and gradual release of oxygen.
- Stimulates angiogenesis and collagen fiber formation.
- Bactericidal action.
- Indicated for the treatment of fungal, bacterial, viral or traumatic lesions of the oral cavity.
- Helps control post-operative sensitivity and pain.
- Acts by reducing periodontal pockets.
- Works in the prevention and treatment of periodontitis and peri-implantitis.
- It is used by the best dentists in their clinical and surgical procedures.

bluem
oral gel - oral wound support
bluem
oral gel - oral wound support
bluem
oral gel - oral wound support

Clinical cases

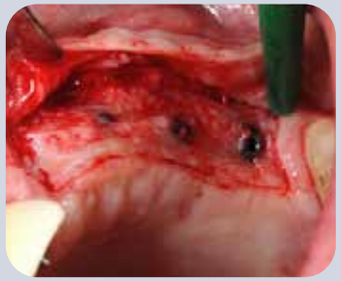
wound healing: **creating keratinized tissues**

Oral gel

Dr. Irfan Abas, MSc.
Implantologist

The effect of oxygen on wound healing: creating keratinized tissue around implants

6 months post-operative after implant placement and extensive GBR



Split thickness flap to uncover implants

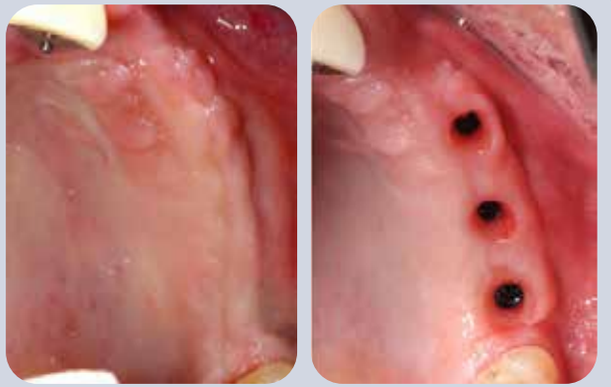
Rinsing implants with blue®m mouthwash

Connecting healing abutments

Suturing

Applying blue®m oral gel around the healing abutments

postoperative | 5 days | 2 weeks | 3 months | 3 months



Keratinized soft-tissue gained after 3 months

Deep **periodontal pocket** treatment

Oral gel

Dr. Marcelo Imano
Specialist in eriodontics and implantology

Dr. Tatiana Deliberador
Master, doctor and post-doctorate in periodontics and specialist in implant dentistry

14/05/2018

Periodontitis located in the distal canine during orthodontic treatment

14/05/2018

14/05/2018

14 mm probing depth

14/05/2018

Sub and supra gingival shaving and smoothing

14/05/2018

First application of blue®m oral gel

15/05/2018

Second application of blue®m oral gel

15/05/2018

15/05/2018

15/05/2018

15/05/2018

Third application of blue®m oral gel

18/06/2018

3 mm probing depth after 30 days

Key Opinion Leader blue®m 2019 winning clinical case

Flap dehiscence after **GBR**

Oral gel

Dr. Marcelo Imano
Specialist in periodontics and implantology

Dr. Tatiana Deliberador
Master, doctor and post-doctorate in periodontics and specialist in implant dentistry

16/03/18 | 16/03/18 | 16/03/18 | 16/03/18 | 16/03/18 | 16/03/18






Bone graft — Collagen membrane

20/03/18 | 20/03/18 | 20/03/18 | 21/03/18 | 22/03/18 | 23/03/18






Flap dehiscence due to suture tension — Removal of necrotic tissue — Daily application in office 3 x 10 minutes each — Flap tissue revascularization

27/03/18 | 29/03/18 | 10/04/18






It is already observed health in the gingival tissue — Gum tissue totally

Acute **ulcer**

Oral gel

Dr. Dulce Cabelho
Master professor in dentistry, specialist in stomatology, oral pathology and laser therapy

A 26-year-old male patient came to the office complaining of pain in the lower lip region for 05 days.

The intraoral physical examination identified two deep ulcers with reddish halos and whitish bottom, painful in the lower labial mucosa on the left side, with approximately 10 mm in diameter each.

As a function of evolution time, clinical characteristics and patient report, the diagnosis was clinically defined as gigantic canker sores.

The treatment instituted was applications of blue®m oral gel, 5x a day in the first 48 hours to reduce the acute inflammatory process, and after this period, 3x a day for another 5 days.

Result: epithelialization and final healing in 10 days.

Scientific article

Effect of oral oxygen-releasing gel compared to chlorhexidine gel in the treatment of periodontitis

R. Niveda e Gurumoorthy Kaarthikeyan

Wound healing problem after **apex resection**

Oral gel

Dr. Raphael Block Veras
Specialist in maxillofacial surgery

Application of blue®m oral gel

4 days of applying blue®m oral gel

17 days of applying blue®m oral gel

Apicectomy case

Oral gel

Dr. Minas Leventis
PhD in oral pathobiology and MSc in oral surgery, with more than 20 years of experience in the field

1. Initial situation.
2. A semilunar flap was used in order to prevent any gingival recessions in this patient. However, using this flap design an unesthetic scar in the soft tissues is probable to develop.
Some buccal bone was removed and the cystic lesion was thoroughly curetted. Small apicectomy was done using a straight Lindemann burr. The apex was prepared using ultrasound tips.
3. The surgical area was treated with oxygen-releasing Bluem oral gel for 5 minutes and then the gel was removed by rinsing with sterile saline.
4. After retrograde filling with MTA the site was grafted with a synthetic bone substitute.

5. The flap was repositioned and sutured with 5-0 PTFE sutures.
6. Oxygen-releasing Bluem gel was applied immediately post-op to enhance the healing of the soft tissues, and to control the bacteria. Bluem gel was also given to the patient to apply it at home twice/day during the initial healing period.

7. One week post-op the sutures were removed. The patient continued applying the Bluem gel for the next few weeks to promote the soft tissue healing.
8 Seven months post-op.
9. Four years post-op: Stable results and excellent soft tissue healing.

Extraction case

Oral gel

Dr. Minas Leventis
PhD in oral pathobiology and MSc in oral surgery, with more than 20 years of experience in the field

1. Initial situation. A male 36-year-old patient, presented urgently with a fractured, non-restorable upper right central incisor.

2. The tooth was removed under local anaesthesia in a non-surgical manner, and the socket was thoroughly curetted to remove all inflammatory soft tissues.

3. Blue®m oral gel was applied topically for 5 mins for disinfection and to remove necrotic cells, and then rinsed with sterile saline.

4. Subsequently, the site was grafted using a synthetic cone-shaped bone substitute.

5. Monofilament 5-0 sutures were used to stabilize the soft tissues. No primary closure to allow the site will heal in secondary intention. Bluem oral gel applied immediately post-op and twice a day for the next 7days in order to control the bacteria and promote the healing of the site.

6. Clinical view one week post-op revealing excellent healing. Note the uninflamed healthy tissues and the and the absence of biofilm on the sutures.

cleaning **orthodontic aligners**

Oral foam

Dr. Dulce Cabelho
Specialist in orthodontics

For over 20 years I have been looking for the best in the dental market to recommend to our patients.

Working intensively with Digital Orthodontics and visualized the need for something to help sanitize the aligners as well as keep teeth/periodontium healthy. I found this confidence in blue®m products!

To safely sanitize the aligner I recommend the blue®m oral foam, which has a specially developed formula to effectively and safely hydrate the gums and oral mucosa.

Aligners from the same patient:

Aligner without the use of blue®m foam

Aligner after 7 days of constant use of blue®m foam

cleaning **orthodontic aligners**

Oral foam

Dr. Daniel Neves
Specialist in orthodontics

Aligners have been increasingly used in orthodontic therapies, a powerful tool that, in a discreet and efficient way, it can produce significant changes in the general well-being of patients.

The advantages associated with the use of removable aligners do not dispense with the necessary care with oral hygiene and cleaning these devices. As the use is quite long and must be maintained in a disciplined way, several bacteria can adhere to the liner throughout the day. Basic care and brushing are essential, but adding a quality product to this, with components capable of protecting the dental surfaces and the oral mucosa, can make the routine of using aligners much more comfortable and healthier.

In our clinic, we recommend the use of blue®m Oral Foam with the orientation of application several times a day, applying the product directly on the aligners, adapting them and spitting out the excess. In cases where there is already a pigmentation in the aligners, the orientation is to let the foam act for 5 minutes, and then rinse the aligners.

The use of foam can also be used as a daily “mouthwash”, applying two pumps of the product directly in the mouth, and spitting out the excess. As it is a foam, the product is “impregnated” in the soft tissues and interproximal contacts, acting for a longer period. The difference in the color of the plates and preservation of their original characteristics is evident in patients who use the product, when compared to patients who do not use it.

Comparative

Patients’ aligner not using a blue®m foam

Patients’ aligner 15 days after constant use of blue®m foam

New aligners with no day of use

Aligners used for 15 days with the use of blue®m every day

The use of blue®m is strongly recommended and an important ally in treatments that use the aligners technique.

optimizer of **tissue healing**

Oral gel

Tatiana Deliberador, Marcelo Hissao Imano, Luís Henrique K. Chaves, Carmen Mueller Storrer

Background & Aim

The free gingival graft is a standard procedure widely used to augment and cover root surfaces in patients with recession. The main disadvantage of this graft procedure is the discomfort caused at the donor site on the palate. Currently, in order to optimize the tissue healing process of surgical beds and with the aim of reducing the discomfort caused by surgery, the use of an oral gel containing active oxygen is being discussed. Thus, the objective of this clinical case was to report the use of oxygen gel, both in the donor and recipient beds, in the free gingival graft technique and to evaluate its influence on the gingival healing process.

Case Report & Results

A female patient, age 51 years old systemically healthy, presenting gingival recession around the lower premolars on both the sides. The recession was Miller Class I recession on both the sides (Figure 1). The treatment plan included correcting the gingival recessions surgically with the free gingival graft (FGG). The surgery was performed on both the sides on the same day. The blue®m oxygen gel was topically applied only on the two premolars on the right side (44, 45) and compared with the left side premolars (34, 35). Patient monitoring and photos suggest that the oral oxygen gel may have increased the re-epithelialization of the wounds of the palatal donor site as well as the recipient.

Use of oxygen gel as an optimizer of tissue healing in donor and recipient areas along with the free gingival grafting technique

Fig. 1 – (a) Tooth numbers 34 and 35 and (b) numbers 44 and 45 exhibiting Miller Class 1 gingival recession.

Fig. 2 – Graft placed and stabilized with a suture (a) on 34 and 35; (b) on 44 and 45.

Fig. 3 – (a) Oxygen gel applied to the receiving bed, on the side right. The gel was applied over the entire length of the graft and was not washed out; (b) Grafted region on the side between 44 and 45, ten days post op. Mild presence of inflammation and keratinization of the graft epithelium can be seen.

Fig. 4 – Appearance of the palate after harvesting the gingival graft.

Fig. 5 – blue®m consistency and texture.

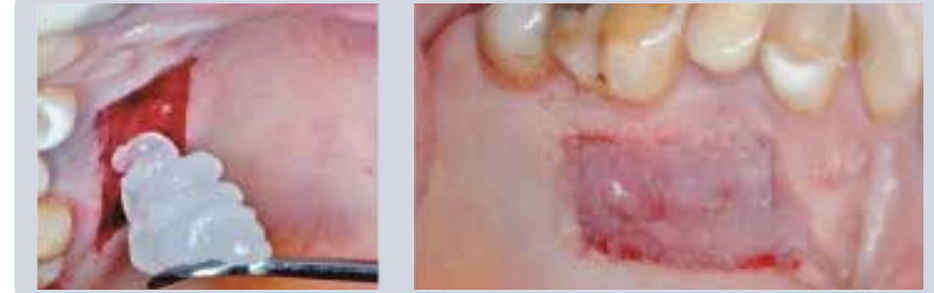


Fig. 6 – (a) Application of oxygen gel in the donor region on the right side of the palate; (b) Fresh application of the oxygen gel at the donor site on the right side, three days after surgery.

Fig. 7 -Donor areas of the palate after three days, beginning of reepithelialization, being more apparent in the area on the right side, FFF where the oxygen gel was used exhibiting advanced healing.

Conclusion

The reported clinical case suggests that the oral oxygen gel (blue®m) optimizes the process of tissue healing at the donor (palate) and at the recipient site (root cover areas). However, further clinical research should be carried out to affirm its therapeutic benefits.

References

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2 Dryden MS, Cooke J, Salib RJ, Holding RE, Biggs T, Salamat AA et al. Reactive oxygen: a novel antimi- crobial mechanism for targeting biofilm- associated infection. J Glob Antimicrob Resist 2017; 8:186-91.

The treatment of **periodontitis**

Oral gel

Dr. Irfan Abas, MSc.
Implantologist

Abstract

The use of oxygen for wound healing management have been described extensively in the medical field. In the dental field it is not common to use oxygen products as a supplement to enhance the wound healing process after dental (surgical) treatment. In this article the author describes a case in which a novel product with active oxygen is used as a supplement to existing therapies in periodontitis.

Periodontitis

The treatment of periodontal disease is more complex than gingivitis, so these cases do take a longer healing period. A new patient (female 37, healthy and non-smoker) came in to the office for a general checkup. Her husband suffered from severe chronic periodontitis and had to have full extraction and dentures.

Fig. 1 & 2

Fig. 3

Although the patient had no cavities nor radiolucencies on her x-rays, the color of the gums in the lower incisors seemed off, little greyish and marginally swollen (Fig. 1 & 2). The intra-oral radiograph showed up to 50% boneloss interdental of the two lower central incisors (Fig. 3) and clinically PPD of the lower incisors was up to 7 mm (Fig. 4 & 5).

Fig. 4 & 5

Fig. 6 & 7

Fig. 8 & 9

A recall visit was planned not 3 months but only 6 weeks after the treatment. The gingiva seemed to look healthy at recall, interdental recession did occur and PPD was reduced to 3 mm without BoP (Fig 10-13).

Fig. 10 & 11

Fig. 12 & 13

Further treatment was proposed to have periodontal recall consults every 6 months and continuation with the oxygen products. At one year after treatment new clinical photographs were made, showing healthy gingiva, PPD up to 2 mm without bleeding (Fig 14-16).

Fig. 14 & 15

Fig. 16

Dental specialties & blue®m products





	Mouthwash	Toothpaste	Oral Foam	Oxygen Fluid	Oral Gel
Maxillofacial surgery and traumatology	✓		✓	✓	✓
Aesthetic dentistry	✓	✓			✓
Temporomandibular disorder and orofacial pain			✓		
Endodontics	✓				✓
Stomatology	✓	✓	✓	✓	✓
Dentistry for patients with special needs	✓	✓	✓	✓	✓
Sports dentistry			✓		
Geriatric dentistry	✓	✓	✓	✓	✓
Pediatric dentistry		✓			✓
Orthodontics	✓		✓		✓
Periodontics	✓	✓	✓	✓	✓
Maxillofacial prosthesis			✓	✓	✓
Dental prosthesis	✓	✓	✓		✓
Public and family health	✓	✓	✓		
Orofacial Harmonisation (HOF)			✓		✓

LIFE IS A MIRACL

Clinical Situation





	Mouthwash	Toothpaste	Oral foam	Oxygen Fluid	Oral Gel
Dental implant surgery	✓	✓	✓	✓	✓
Post surgical complications				✓	✓
Periodontal surgeries			✓	✓	✓
Aphthous stomatitis				✓	✓
Extraction	✓		✓	✓	✓
Gingivitis	✓	✓	✓	✓	✓
Halitosis	✓	✓	✓	✓	
Lip herpes					✓
Dentin hypersensitivity		✓			✓
Hyposalivation	✓	✓		✓	
Trauma Injury				✓	✓
Cleaning removable appliances			✓		
Hairy tongue				✓	✓
Lichen planus				✓	✓
Oral mucositis				✓	✓
Peri-implant mucositis	✓	✓		✓	✓
Pemphigus vulgaris				✓	✓
Pericoronitis	✓	✓	✓	✓	✓
Peri-implantitis	✓	✓	✓	✓	✓
Maintenance of dental implants	✓	✓	✓	✓	
Burning mouth syndrome				✓	
Xerostomia				✓	

blue®m Oral Care: **Scientific Data**

By Clinical Problems:

Gingitivis/ Periodontitis

In fact, healthy periodontal tissues can be promoted by supra- and subgingival biofilm homeostasis. When oral microbiota becomes dysbiotic, periodontal pathogens evoke inflammation in the gingiva 'Gingivitis', and then tissue destruction 'Periodontitis'. New treatment modalities, such as blue®m oxygen therapy, have emerged to maintaining healthy oral flora 'biofilm homeostasis' and treating existing disease. In a microbiological study, Professor Tatiana Deliberador and co-workers (Brazil) proved the inhibition effect of blue®m oxygen therapy at higher concentration on Porphyromonas gingivalis, as the keystone pathogen of periodontitis [1]. Also, Dr. R Niveda and Dr. G Kaarthikeyan (India) confirmed the effect of blue®m oxygen therapy in the treatment of periodontitis [2, 3]. For gingivitis, Professor Tatiana Deliberador (Brazil) was also co-authored a randomized controlled clinical trial to study the long-term (up to 18-weeks) antigingivitis efficacies of commercially available dentifrices [4]. The study results demonstrated that blue®m oxygen therapy has remarkable effect in controlling supragingival biofilm, as the primary cause of gingival inflammation. Clinically, Dr. Irfan Abas (The Netherlands) and more dental specialists have presented several cases showing the significant impact of blue®m oxygen therapy on gingivitis and periodontitis [5,6].

Oral lesions

Professor Anna Turkina (Russia) demonstrated the significant improvement and healing in many cases with ulcerative form of Lichen planus after treating them with the use of topical corticosteroids in adjunction with blue®m oxygen therapy [11]. In addition, postoperative pain and the presence of inflammation are common symptoms after oral surgeries. The results of Professor Tatiana Deliberador (Brazil) and co-workers prove the promising effect of blue®m oxygen therapy to reduce any harmful effect on oral tissues, especially during the postsurgical healing phase [12,13]. In cases of large cystic lesions in mandible, blue®m oxygen therapy favors the healing and improving the success of the cases [14].

Peri-implantitis

Peri-implantitis is characterized by inflammation/infection around dental implants, and if not treated may lead to implant loss. In 2016, Professor Jamil Shibli (Brazil) participated in a research work to identify the true pathogens related with the etiology of peri-implantitis. Most evidence supporting association of the periodontal 'red-complex' pathogens, such as Porphyromonas gingivalis, Treponema denticola and Tannerella forsythia [7]. Professor Jamil Shibli (Brazil) assessed the metabolic activity of blue®m oral gel on a subgingival multispecies biofilm compared to chlorhexidine [8]. The results showed an excellent selective effect of blue®m oral gel in reducing the account of 'red complex' bacteria as well as inhibiting their ability of biofilm formation. Additionally, the data of many case-report studies showed that blue®m oral gel is more effective than regular anti-septic agents in improving the long-term clinical condition of dental implants that had been treated for peri-implantitis with a 3-years follow-up [9]. For example, Dr. Ronald Muts (The Netherlands) is always applying blue®m TOOTh protocol for treating cases of peri-implant disease [10].

Wound healing

Oral wounds can involve oral soft tissue and/or hard tissue. In fact, Oxygen plays an important role in wound healing, as it is vital for energy production and protein synthesis, cellular proliferation, angiogenesis, and the restoration of tissue functions. A review by Professor Wei Cheong Ngeow (Malaysia) and co-authors reappraises the current knowledge on the application of topical oxygen technology (blue®m) to promote oxygenation and angiogenesis in wound healing [15]. Recently, Dr. Marcos Motta, Professor Tatiana Deliberador, Dr. Camila Vianna, and Professor Geninho Thomé (Brazil) have published a full chapter on many clinical options to achieve predictable soft and bone tissue repair or regeneration. The use of blue®m oxygen therapy shows always a promising clinical outcomes [16]. Dr. Juliana Habib (Syria) proposed that the use of blue®m as dressing on gingival healing and pain after surgical depigmentation [17].

blue®m Oral Care: **Scientific Data**

Scientific References (by Products):

bue®m oral gel

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[4] Cunha EJ, Auersvald CM, Deliberador TM, Gonzaga CC, Esteban Florez FL, Correr GM, Storrer CL. Effects of active oxygen toothpaste in supragingival biofilm reduction: a randomized controlled clinical trial. International journal of dentistry. 2019 Jul 1;2019.
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[10] https://bluemcare.com/insights/following-the-tooth-guidelines-for-peri-implantitis-a-2-year-follow-up/

blue®m mouthwash

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[16] https://bluemcare.com/content/uploads/2023/01/Healing-Stimulators-Blue%C2%AEm-Oral-Gel.pdf
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blue®m Oral Care:
Scientific Data

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blue®m mouth wash

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blue®m toothpaste

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blue®m oral foam

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Scientific

Evidence

Bactericidal Action

An in vitro study showed that the blue®m oral gel has an effect similar to that of chlorhexidine on the microbial effect on the formation of the biofilm of anaerobic bacteria in periodontal and peri-implant diseases (Shibli JA, Rocha TF, Coelho F, de Oliveira Capote TS, Saska S, Melo MA, Pingueiro JMS, de Faveri M, Bueno-Silva B. Metabolic activity of hydro-carbon-oxo-borate on a multispecies subgingival periodontal biofilm: a short communication. Clin Oral Investig. 2021 Oct;25(10):5945-5953. doi: 10.1007/s00784-021-03900-0.)

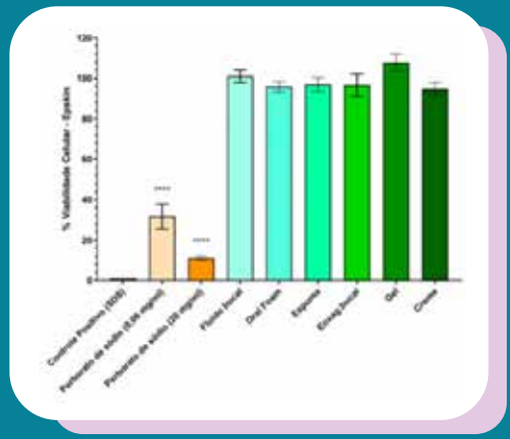
Angiogenic Action

An in vivo study showed that blue®m oral gel has an angiogenic action (stimulates the formation of new blood vessels) and stimulates the formation of collagen fibers, favoring better and faster healing (Deliberador TM, Macalossi JMS, Tenorio C, Dall´Agnol GS, Boia MF, Zielak JC. Oxygen-releasing agent promotes healing of skin wounds in rats. Accepted for publication in the Journal of Wound Care.)

Toxicity Test

All products in the blue®m range (toothpaste, mouthwash, oral foam, oxygen fluid and oral gel) were evaluated for toxicity using in vitro assays with spheroids and Epskin® equivalent reconstituted skin (3D).

The results showed that the tested products are not toxic in the experimental model used (FIGURE 1) (Source: Research of the in vitro toxicity evaluation of blue®m oral hygiene products, carried out by professors Marceli Leano da Silva/PPGBiotec Inmetro and Jose Mauro Granjeiro.



Scientific

Evidence

Use of x aligners and blue®m product

Clinical study showed that the use of mouthwash and oral foam; blue®m resulted in a statistically significant reduction in bleeding on probing and the presence of biofilm in patients treated with clear aligners compared to the patient's baseline situation. (Miguel YD, Shimizu RH. Periodontal evaluation in orthodontic treatment with orthodontic aligners: proof of concept [Dissertation]. Curitiba: Faculdade Ilapeo; 2020.)

It's proven: Continuous use of the oral care blue®m line reduces halitosis

Recent clinical research carried out at the IMED School of Dentistry – Porto Alegre, evaluated 17 individuals who had oral halitosis due to various causes. Patients were instructed to use bluem oral cream (3x/day) and bluem mouthwash (3x/day) for two weeks. No other therapeutic intervention or orientation was performed in this first moment of treatment.

The impact of using the products on improving the patients' breath condition was evident. The values of concentrations of volatile sulfur compounds (VSCs), the main cause of breath alterations, measured by the Halimeter©, reduced by an average of 43%, and in some patients the reduction was greater than 80%.

The use of the products also demonstrated an ability to improve the quality of life of patients, since the scores of the HALT questionnaire (Halitosis Associated Life-Quality Test), reduced by 26%.

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Testimonials

Dr. Geninho Thomé

Currently, Dr. Geninho Thomé is Scientific President of Neodent, Chairman of the Board of Directors of Neodent, General Director of Faculdade ILAPEO and CEO of GT Company and GT Building.

"I have been using blue®m products for some years in different clinical situations. In the pre-surgical period, I recommend the mouthwash and oral cream as a way to adjust the oral environment, even for those patients who have advanced periodontitis with extraction planning for rehabilitation with dental implants.

This greatly improves tissue quality, making the surgical procedure easier. I also frequently use the trans-surgical mouthwash to irrigate periodontal and peri-implant pockets, to perform antisepsis of surgical guides and personalized components.

I recommend oral gel for decontamination of infected sites, such as the presence of periapical and periodontal lesions associated with the immediate installation of implants. Also, I apply the gel before installing prosthetic components.

The oral gel has shown fantastic clinical results, accelerating post-surgical healing and therefore I apply it on the operated bed at the end of the procedures and I recommend that the patient continue with the application, at home, 3 times a day, together with the mouthwash. from blue®m."

Testimonials

Dr. Sergio Jaime

Master and Specialist in Implantology Doctor in Oral Rehabilitation - USP President of the Brazilian Academy of Osseointegration

''To prepare the patient's oral environment before surgery, we carry out the entire scaling, curettage and prophylaxis procedure and recommend the use of blue®m products. One week before surgery, the patient starts using the blue®m oral cream for tooth brushing, together with the mouthwash and/or foam, rinsing for up to 1 min with the products in the line. On the day of surgery, we use blue®m oral gel over the suture region and/or membranes. During the postoperative period, the patient must continue to apply the gel two to three times a day in the operated region, concomitantly with the use of mouthwash or oral foam. Healing is shown up to 50% faster with the use of the products and that's why I highly recommend it.''

Dr. Irfan Abas

Specialist in implantology

''Surgery is challenging! We can have the best surgical techniques and the most comprehensive digital planning. But wound healing affects the outcome. Thanks to the oxygen products from blue®m, we can control woundhealing.''

Dr. Hamdan Alghamdi

Periodontist, Bone Generation & Dental Implants Consultant. Professor and consultant in periodontics and dental implants, College of Dentistry, King Saud University, Riyadh, Saudi Arabia.

"During my PhD study in the Netherlands, it was the first time I learned about the concept of topical oxygen therapy by Dr. Peter Blijdorp. We were using the bluem gel with many surgical cases for dental implants and wound healing."

Dr. Emilio Marquardt

Master and specialist in maxillofacial surgery and traumatology Professor at UNIVAG Coordinator of the Specialization of Maxillofacial at FAIPE - Cuiabá-MT

''At the 2017 CIOSP, a Dutchman introduced me to a product called blue®m. I had the opportunity to test the products in my procedures and I had a sensational result, it was a real watershed.
Since 2017, when blue®m entered my life, it radically changed my surgeries and my harmonization processes, avoiding complications such as necrosis and bringing many other benefits. When you test the products, you see how they are different from anything else on the market, I use them in all my surgeries, and I recommend that all dental professionals use them too. ''

Dr. André Zétola

Doctor in implant dentistry, master in head and neck surgery and specialist in maxillofacial surgery
Fellowship in the Department of Oral and Maxillofacial by nothwesthern university (1992)

''I am a maxillofacial surgeon, coordinating professor at the University of Positivo and head of service at the Santa Cruz hospital. My focus is implant dentistry and maxillary surgery, my experience with blue®m started at the end of 2015. We were invited to learn about and evaluate this new product, little by little we were implementing the blue®m a in our protocol. Today we work with the blue®m philosophy with pre- and post-operative use of the product to obtain a better recovery and faster healing of our patients' wounds. I recommend using the mouthwash three times a day for one minute and applying the gel three times a day.''

Dr. Márcio Martins

Maxillofacial Surgeon, Stomatologist and Implantodontist

''The use of blue®m products are part of my protocol in treatments and in the postoperative period in oral cavity surgeries, facilitating the healing process, in addition to other benefits!''

Testimonials

Dr. Miguel Stanley

Specialist in Implantology

"I have been using blue®m products exclusively for my patients for some time now. Everything around this line was thought out to the last detail by people and scientists who really care about people's health. From toothpaste to post-surgical gel to toothbrush, everything is really amazing, and our patients love it. For me, there is nothing that compares on the market. If you are looking for differentiation, this brand is essential."

Dr. Felipe Rychuv

Master and Doctor in Dentistry and specialist in Periodontics and Implantology

"I use and recommend the blue®m gel because it has an oxygen release, having an immediate effect for different types of problems. It does not contain any toxic substance; it can be used continuously and is easy to apply. Its action and effectiveness have been proven in the treatment and prevention of inflammation, as well as accelerating the healing process of wounds and oral ulcers. Helps in bacterial control; stimulates blood flow by forming blood vessels and stimulates bone regeneration."

Dr. Roberto Espanhol

Specialist in periodontics, implantology and orthodontics

"I have been using blue®m products frequently for two years now and the results are very expressive. They greatly speed up the post-surgical healing process and in orthodontics they help to keep both the aligners and the teeth clean and transparent. I am very pleased that they have developed a product with this quality, which benefits us on a daily basis."

Dr. Lizandra Comparin

Specialist in Periodontics and Implantology

"I use and recommend blue®m products because of the versatility of indications, with a line of products that greatly help the patient and professional alike. For providing excellent clinical results, especially in terms of improved healing and tissue decontamination. In addition, they are made up of fantastic oxygen with extended release and natural ingredients, without contraindications.;;

Dr. Márcio Cury

Specialist in Periodontics and Orthodontics

"The blue®m Line products help me in various clinical situations, especially in sensitive patients, halitosis and xerostomia and in cases of control and long-term periodontal treatment."

Dr. Bruno Cerci

Master and specialist in orthodontics and TMD and orofacial pain

"I believe, use and recommend to all my patients daily use, as well as recommend it to professionals! blue®m is practical and efficient, improves gingival health and keeps aligners clean and transparent! It came to revolutionize the care of aligners, facilitating the daily routine at the orthodontic clinic!"

Testimonials

Dr. Ajay Kakar

Ex-President of the International Academy of Periodontology

''I recommend the use of blue®m get aplication in all kinds of periodontal cases, from initial gingivitis to advanced periodontitis with deep periodontal pockets. The beauty is the non existant learning curve and the exceptional results achieved in a few applications. All that is required after scaling is dilligence and dedication to place the gel in the lesions. The inflammation gets controlled bril-liantly and the infection is more or less eliminated. Most cases get completed treated with the blue®m gel after a comprehensive scaling. Very advanced cased become perfectly ready for regenerative surgical approach after a few rounds of blue®m Gel. I cannot imagine imparting periondtal therapy without blue®m Gel.''

Dr. Rafaela Scariot

PhD in Dentistry and specialist in maxillofacial surgery

''I use blue®m oral gel quite often in the office. I use it to improve the healing process after dental surgery, in patients with osteonecrosis of the jaws and in some lesions of the oral cavity. I have observed faster, better healing and less postoperative pain when I recommend the product. I highly recommend it!''

Dr. Claudia Tenorio

Master and PhD in Dentistry and specialist in Periodontics and Implantology

''I use and recommend blue®m because I have observed great effectiveness in accelerating healing of my surgical results in gingival grafts, both in the donor and recipient areas.''

Dr. Dulce Cabelho

Master professor in dentistry, specialist in stomatology, oral pathology and laser therapy

''As a stomatologist and oral pathologist, I was looking for differentiated products that could be effective in the prevention and treatment of oral health, in Dentistry. blue®m products have become allies in my services for the quality and resoluteness in oral tissues by helping in the healing process in both soft and hard oral tissues. Excellent products! I use, prescribe and recommend!''

Dr. Tatiana Miranda Deliberador

Master, doctor and postdoctoral in periodontics and specialist in implant dentistry

''I use and recommend blue®m products, because they are the only products on the national market that have a slow oxygen release in their formula. We know that oxygen is essential for tissue healing and bacterial control. After all surgical procedures and in periodontal and peri-implant pockets (after scaling and curettage) I apply the oral gel and the clinical results are fantastic, I see a faster and much better healing. The products have another great advantage, they do not have side effects, and that is why I recommend to patients the use of an oral rinse before and after surgery. I always tell my dental surgeon colleagues, if you still don't use or recommend blue®m products, use them and be amazed by the results.''

Dr. Carmen Lucia Mueller Storrer

Master and PhD in Periodontics and specialist in Periodontics and Implantology

''I can say, based on the results of the clinical study I conducted, that blue®m toothpaste demonstrated that active oxygen and lactoferrin have antiplaque potential as effective as triclosan in fighting gingivitis. So, I recommend its use.''

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