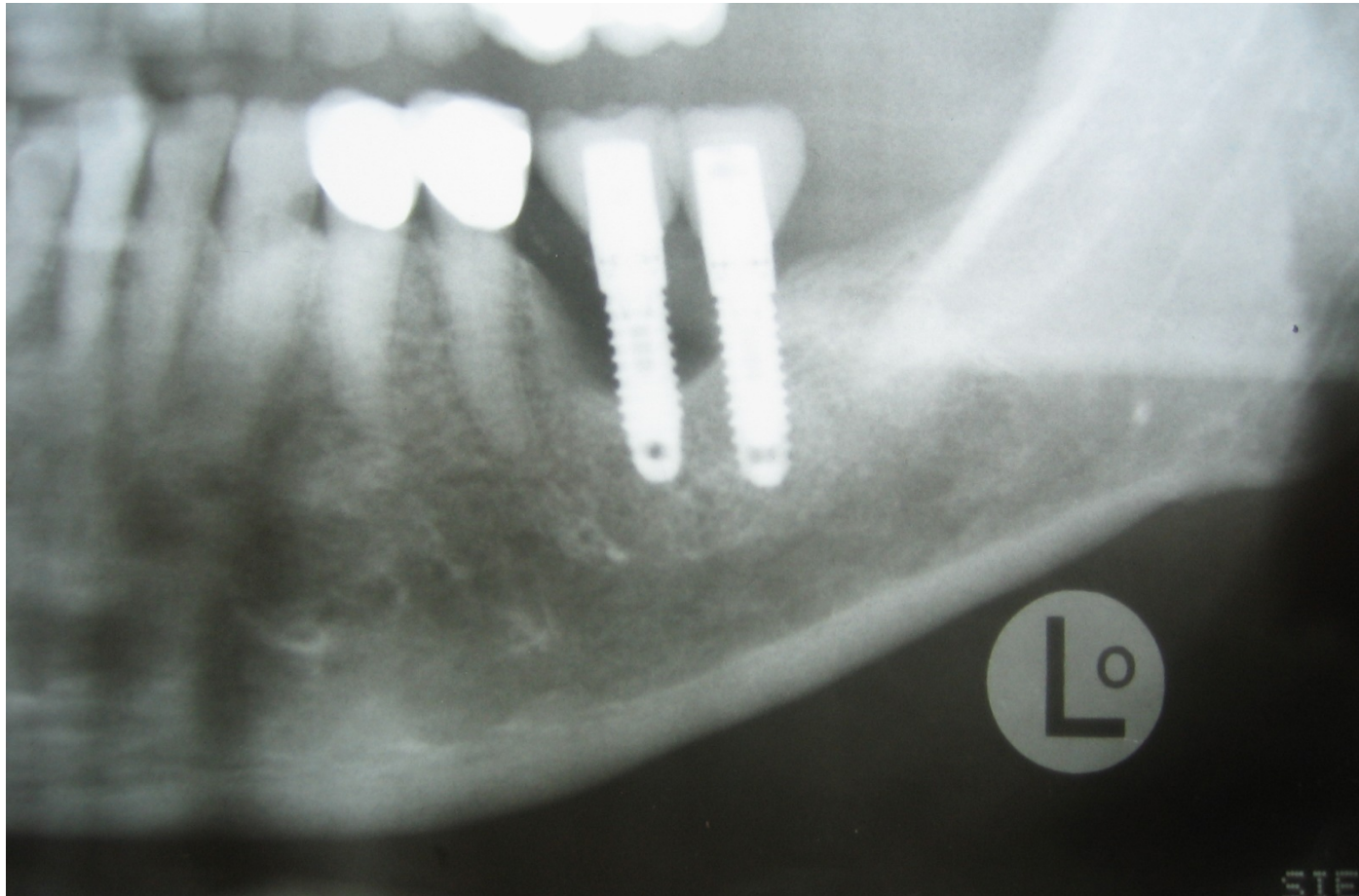


Peri implantitis

Intoduction of this principle bij Dr. Peter Blijdorp
in 1989 *preprosthetic congres, Arnhem (NL)*



Peri-implantitis

*Periodontitis and peri-implantitis are thought to be caused by **anaerobic bacteria** living within the biofilm localized to the subgingival region. Recent investigations of bacterial species associated with periodontitis suggest that the disease is caused by a number of different bacteria and that many novel species may be involved in its etiology.*

Periodontitis/ Peri-implantitis causing organisms	Classification
<i>Tannerella forsythensis (Bacteroides forsythus)</i>	Anaerobic
<i>Porphyromonas gingivalis</i>	Anaerobic
<i>Aggregatibacter (Actinobacillus)</i>	Anaerobic
<i>Campylobacter rectus</i>	Anaerobic
<i>Prevotella intermedia</i>	Anaerobic
Peri-implantitis causing organisms	Classification
<i>Actinobacillus actinomycetemcomitans</i>	Anaerobic
<i>S. aureus</i>	Anaerobic
<i>Porphyromonas intermedia/P. nigrescens</i>	Anaerobic
<i>Staphylococcus aureus</i>	Anaerobic
<i>Fusobacterium nucleatum</i>	Anaerobic
<i>Veillonella sp.</i>	Anaerobic
<i>Capnocytophaga</i>	Anaerobic
<i>Campylobacter rectus (PI)</i>	Anaerobic
<i>Eikenella corrodens (PI)</i>	Anaerobic
<i>Bacteroides forsythus (PI)</i>	Anaerobic
<i>Treponema denticola (PI)</i>	Anaerobic
<i>Peptostreptococcus micros (PI)</i>	Anaerobic
<i>Capnocytophaga spp. (PI)</i>	Anaerobic
<i>Prevotella intermedia</i>	Anaerobic

Tissue oxygenation at peri-implantitis sites

Tissue oxygenation at peri-implantitis sites was significantly decreased ($p < 0.05$) when compared with that at healthy sites, which was largely due to an increase in deoxyhemoglobin and a decrease in oxyhemoglobin at the peri-implantitis sites compared with the mucositis and healthy sites. In addition, the tissue hydration index derived from the optical spectra in mucositis was significantly higher than that in other groups ($p < 0.05$).

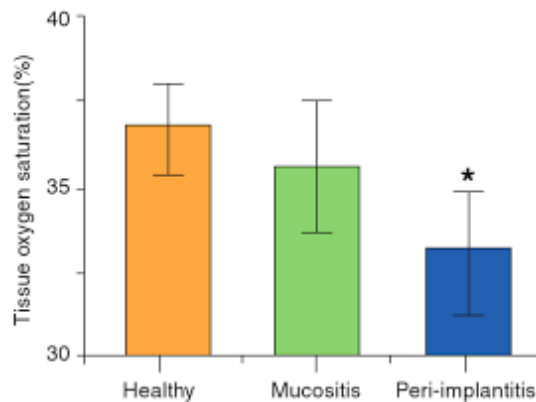


Fig. 12.21 The percentage of tissue hemoglobin oxygen saturation derived from the relative concentrations of Hb and HbO₂. Indices are compared between healthy, mucositis and peri-implantitis sites. * Significant difference from healthy sites, $P < 0.05$. Vertical bars denote 0.95 confidence intervals (Nogueira-Filho et al. 2011. Reprinted with permission from John Wiley & Sons, Inc.)

J Periodontol Res. 2011 Jun;46(3):382-8. doi: 10.1111/j.1600-0765.2011.01361.x. Epub 2011 Mar 11.

On site noninvasive assessment of peri-implant inflammation by optical spectroscopy.

[Nogueira-Filho G](#), [Xiang XM](#), [Shibli JA](#), [Duarte PM](#), [Sowa MG](#), [Ferrari DS](#), [Onuma T](#), [de Cardoso LA](#), [Liu KZ](#).

Department of Dental Diagnostics and Surgical Sciences, University of Manitoba, Winnipeg, MB, Canada.

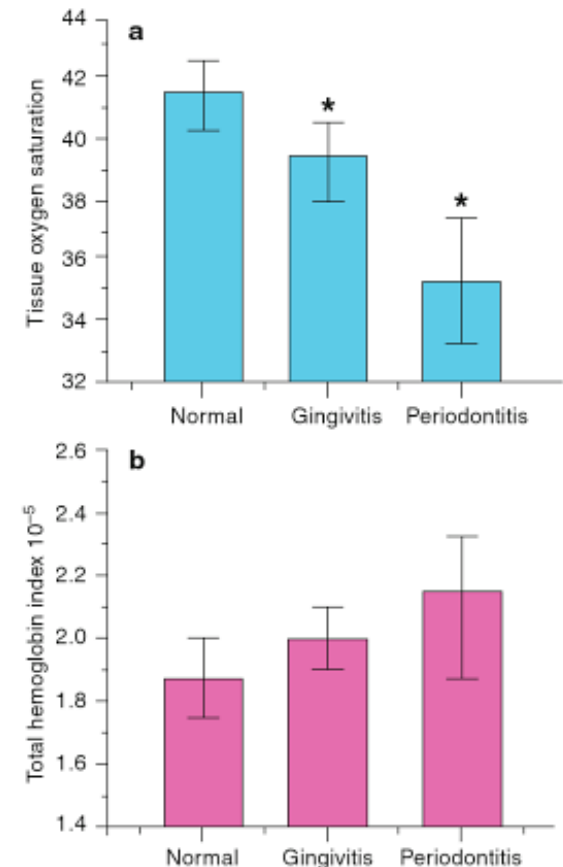


Fig. 12.20 Per cent tissue hemoglobin oxygen saturation (a) and total hemoglobin indices (b) derived from the relative concentrations of deoxygenated hemoglobin and oxygenated hemoglobin. Indices are compared among healthy, gingivitis and periodontitis sites. * Represents a significant difference from healthy sites, $P < 0.01$. Vertical bars denote 0.95 confidence intervals (Liu et al. 2009. Reprinted with permission from John Wiley & Sons, Inc.)

Peri-implantitis study 2008

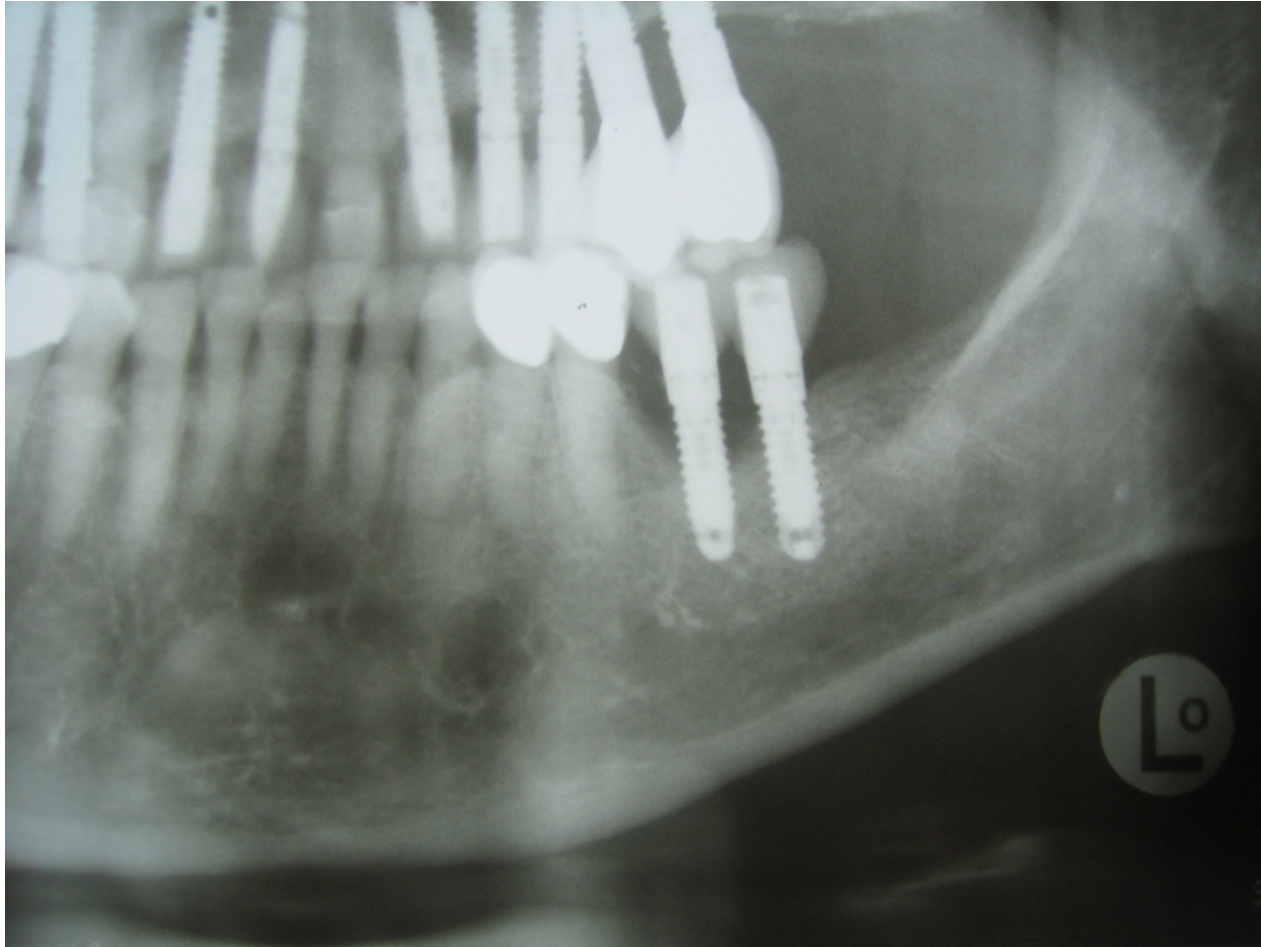
The peri-implantitis treatment protocol in short:

- Curettage of the pocket
- Syringe the pocket with Bluem oral gel, remaining in situ for 5 minutes.
- Washing the gel away with saline
- Syringe the pocket again with Bluem oral gel, application remains
- Instruct the patient to rinse and/or brush three times a day with Bluem mouthwash/Bluem toothpaste.

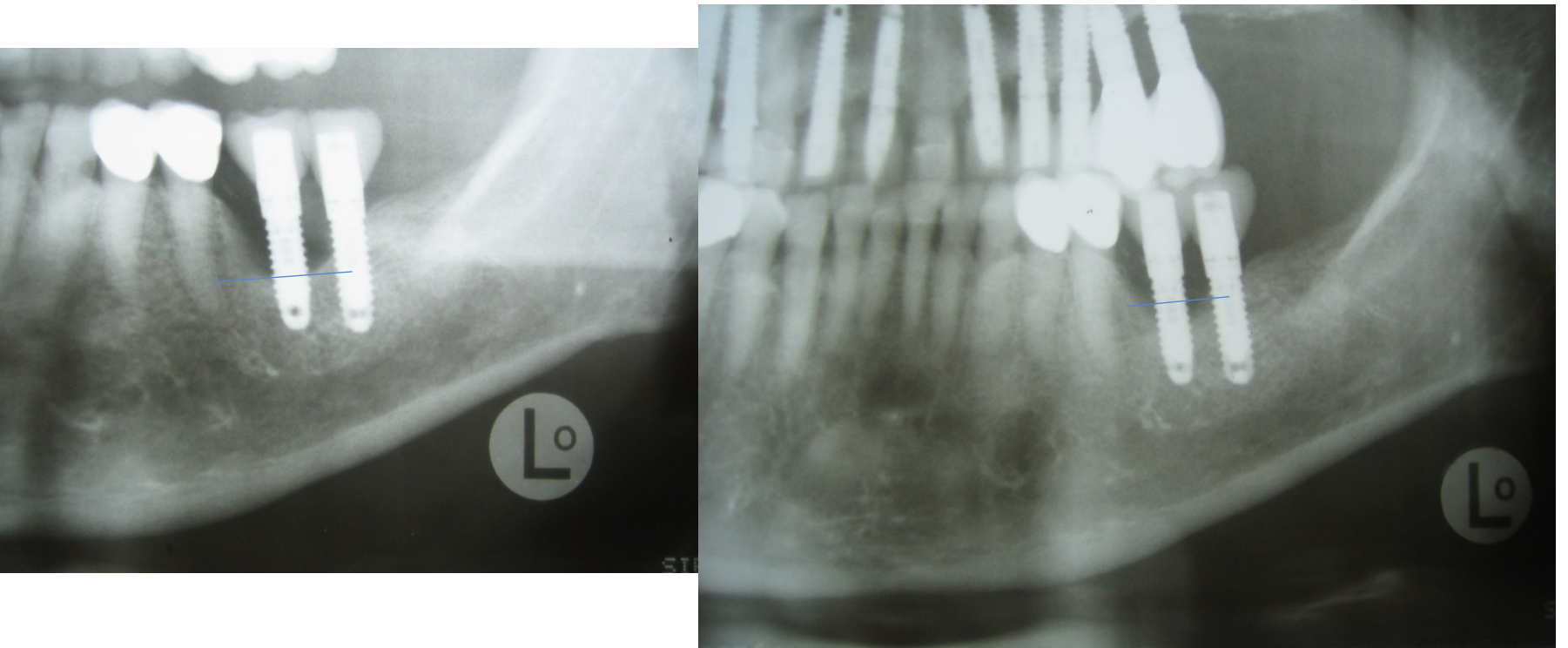
Results peri-implantitis study 2008

Peri-implantitis patients	n = 34
Implants	n = 40
After 3 weeks, in patients	- In 34 patients clinical improvement – healthy look
After 6 weeks, in patients - probing	- In 34 patients pocket depth reduction - In 30 patients soft tissue firmer/tighter around the implant(s) - In 4 patients indication for repeating treatment: irrigation pockets with Bluem oral gel et cetera (see protocol)
After 3 months, in implants (clinically and radiographically)	- 1 implant lost - 9 implants not yet cured - 30 implants free of pathology (75%) - 6 implants re-osseointegration noticeable on the radiographs (15%)
After 6 months, in implants (radiographically)	- 6 implants re-osseointegration 3 mm (15%) - 24 implants re-osseointegration 2 mm (60%) - 4 implants no signs of re-osseointegration

6 month after ROS treatment & curritation of the pocket : Bone ingrowth!



Before and After



Results peri-implantitis study Bone growth



Before:
Manifest Peri-Implantitis
with swollen soft tissues
around the implant



After:
Within **3 months** of
bluem protocol
therapy: soft tissue
recovery and
significant healthier
situation