The new Vector Paro – the benchmark for low pain treatment

Periodontal treatment, recall, prophylaxis, and periimplantitis treatment

COMPRESSED AIR
SUCTION
IMAGING
DENTAL CARE
HYGIENE

DÜRR DENTAL

Unique and patented – Vector Paro can do what others only talk about!

Dürr Dental has represented progress and innovation in dentistry for decades. Many standards stem from company developments. The new Vector Paro stems from the rigorous development of a proven, low pain method of treatment that has changed decisively how periodontitis is dealt with – for the wellbeing of the patient.

Safe, gentle, and protective: The Vector principle

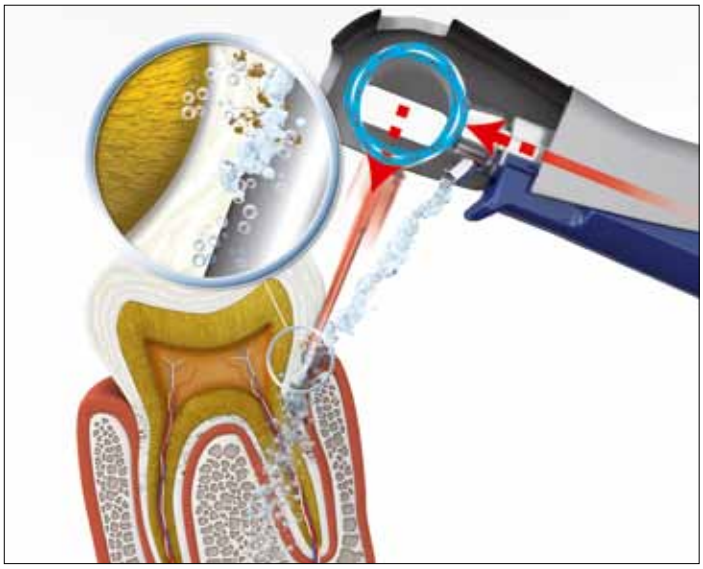
Sonic and ultrasound instruments have become established in periodontal treatment as an alternative to traditional manual instruments. However, ultrasonic instruments have disadvantages as well as advantages: Often, they move elliptically, meaning that even and vibration-free work is not always possible on every single tooth surface. This can result in irritation and unwanted loss of substance on the root surface.

The method thus far unrivaled, and meticulously put into practice by Dürr Dental: The Vector principle – a provably gentle and mild periodontal treatment. The ultrasound energy is accurately deflected in a linear direction. Thanks to this patented vibration deflection system, the instruments are then moved parallel to the surface of the root only. Treatment can be administered in a clinically efficient manner using ultrasound energy, causing no trauma to the patient.

Unique sensitivity of touch thanks to linear vibration deflection

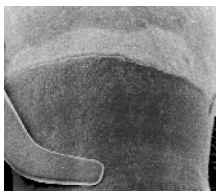
With Vector Paro, you can trust in your senses when administering treatment. This is possible thanks to the unique vibration deflection system that enables the practitioner to control this highly-sensitive work with precision, because the ultrasound instruments are totally tremor-free. During the actual treatment, the quality of the surface to be treated can be controlled with a great level of sensitivity of touch. This is made possible due to the linear movement of the instrument. It ensures the very best level of work without tremor, and makes possible a level of touch sensitivity comparable with that of common diagnostic probes.

The result: clean, smooth surfaces that can only be achieved using the patented linear vibration deflection system by Dürr Dental. This process is supported and optimized by means of the polishing elements of Vector Fluid polish. Gentle treatment with Vector is the only method which allows the surgeon to distinguish between the root element and concretions. Only after a treatment with the Vector method, no significant loss of tooth substance was found (Kishida et al. 2004).



The Vector principle:

- Linear deflection of the ultrasound dynamics in the Paro handpiece
- Instrument movement axially, parallel to the surface of the root
- Precise 90° deflection vertically
- Tremor-free work
- Careful removal of biofilm, bacteria and deposits
- Smooth, clean surfaces
- Thorough and sensitive like no other system



Smooth and clean: Root surface following Vector treatment

Loss of substance: Root surface following hand planing

The Vector system – synergy of design and function

The new Vector Paro – versatile and suitable for universal use

The new Vector system provides the answer to all clinical issues. With practitioners from clinics and medical practices, two handpieces, the Paro and the Scaler, were developed with all the specific instruments required for each application.

The Vector Paro offers a suitable solution for all ultrasound applications. The range of uses extends from removing subgingival plaque to removing supragingival tartar. In addition, the system has advantages when it comes to dental implant care and periodontitis treatment.

Extra sensitivity

The clear, capacitive control panel is intuitive to use.

Comfortable to use

The new design of the Paro handpiece is particularly ergonomic.

Completely system-oriented

Specially tailored accessories complete the Vector system.

Cost-effective

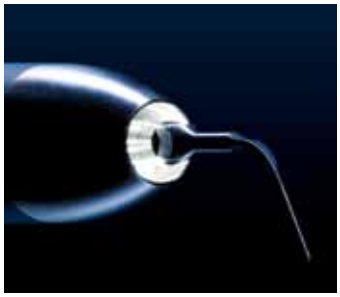
A large water tank means that there is no need for a fixed water supply.

Super-hygienic

Closed surfaces with no gaps mean that the appliance meets the highest hygiene requirements.

Very precise

The Scaler handpiece has six LEDs for improved visibility.



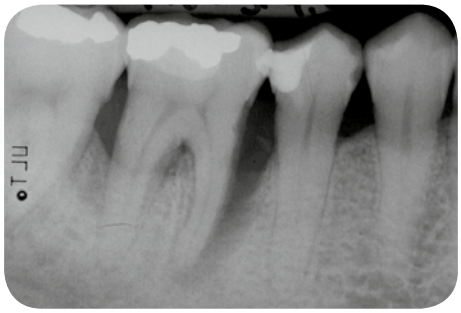
Periodontal treatment with the Paro handpiece

Initial therapy

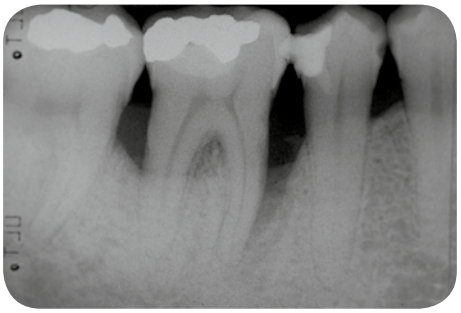
The most important aims of the initial treatment are to thoroughly remove the biofilm, the mineralised parts of the biofilm in the form of tartar, and to smooth the surface of the root right down into the fundus. Although the mineralized elements do not trigger a periodontal infection, they do provide the ideal breeding ground for the new growth of periodontal pathogens.

The precisely tailored Paro instruments are made from high-quality surgical steel and allow this type of treatment to be carried out in an efficient clinical manner and successfully. The exceptionally fine hydroxyapatite particles of the Vector Fluid polish optimize the polish and reduce hypersensitivity following treatment. The pocket is always rinsed out thoroughly – with no aerosol formation. Thanks to the hydro-dynamic effects, the bacterial count is reduced drastically.

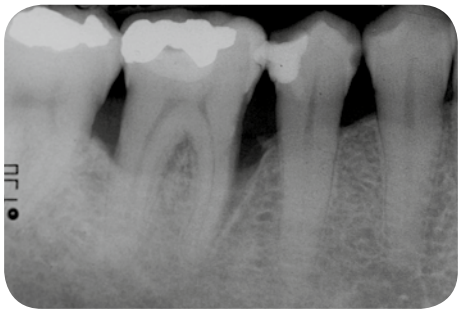
Molars



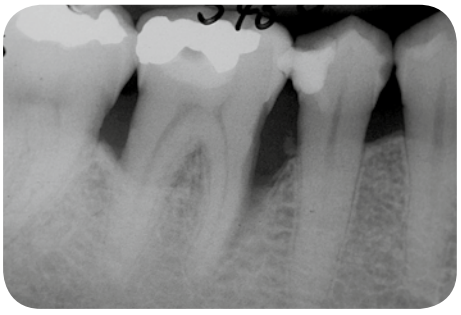
Condition at the start of treatment



Condition after 3 months



Condition after 1 year



Condition after 3 years

© Dr. Mauksch

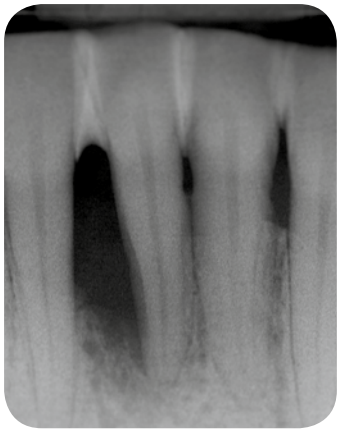
Maintenance treatment (recall)

Even following intensive cleaning of the root surface, the bacterial recolonization of the periodontal pockets can occur within a few days. For this reason, regular maintenance treatment or even supportive periodontal treatment must take place regularly following initial therapy in order to prevent the reinfection of the pockets. The intervals between recall sessions must be determined individually for each patient.

The Vector system offers ideal instruments – made of flexible plastic – and carbon fibre reinforced probes and prophylaxis curettes for this type of treatment. In this way, the risk of damaging the surface of the root, or unintentionally causing tissue trauma is low. By using the Vector Fluid polish, the bio-film is effectively removed, in turn effectively preventing a bacterial community from reforming. And this can be done in a really gentle manner*.

Front teeth

Condition at the start of treatment



Condition after 3 months

Condition after 1 year

Condition after 3 years

This is what counts:

- Targeted control of causes of periodontitis
- Gentle and effective removal of bacteria, bio-film, and tartar
- Low-pain therapy*
- Efficient concrement removal without irritation
- Greatest possible retention of regenerative tissue
- Root surface cleaning right down to the bottom of the pockets
- No damage to soft tissue or root surface
- Effective even in anatomically difficult areas

*See study: A. Braun, F. Krause, G. Hahn, M. Frentzen: Subjektive Schmerzempfindungen bei der periodontalen Behandlung, Quintessenz 53, 7, 749-754 (2002)

Periimplantitis treatment with the Paro handpiece

Vector Paro tool kit: Each tip is delivered individually in an instrument box which acts as a storage container and as a tool for fixing the tip to the handpiece

In order to keep dental implants and peri-implant soft tissue healthy, the regular and systematic removal of bacterial deposits and bio-film is absolutely vital – just like for prophylaxis treatment for gingivitis and periodontitis. Implants are surrounded by bacterial plaque. This results in inflammatory changes in the soft tissue which – in the worst case scenario – can cause the loss of the implant.

Vector instruments are designed especially for this type of treatment. They permit the reliable and thorough cleaning of implant surfaces without damaging the implant. Instruments made from special fibrous composite materials and plastic instruments made especially for treating implant surfaces enable clinically successful periimplantitis treatment.

Professional tooth cleaning with the Scaler handpiece

Diverse applications

The new Scaler handpiece by Dürr Dental enables the highest level of professional tooth cleaning. New to the programme: delicate instruments for supra and subgingival use. The piezoceramic drive enables the efficient removal of dental plaque whilst protecting sensitive tissue structures to the greatest extent possible. The Scaler handpiece can be partially taken apart, making it especially easy to clean and disinfect.

A technological highlight

In addition to the modern, timeless design of the device, and the new ergonomic Scaler handpiece, six high performance LEDs light up even hard to access areas. The sterilisable light conductor has a very long product lifetime, and is extremely cost-effective.

Vector accessories

Ergonomically shaped handpieces

You will be impressed by both the Paro and the Scaler handpiece as they are both very user-friendly. They are connected to the base station by means of a lightweight, flexible hose. The handpieces and the instruments can be autoclaved at 134 °C and can be stored in a sterilisation box specially designed for them that complies with current hygiene requirements.

Vector accessories

Vector Fluid polish: Polishing fluid with increased abrasive capacity based on hydroxylapatite with a fresh mint aroma (Vector Paro system only)

Tool kits – can be sterilized at 134 °C

Multifunction foot switch (wireless or cable version)

Toolcard for instrument wear control

Ergonomic handpieces

Service kit

The base units: Unique technology and design

They were developed in line with the latest ergonomic requirements. The devices are easy to use with the foot switch, and the hygienic control panel makes it simple to adjust the settings as desired.

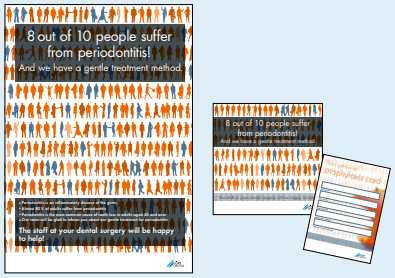
The systems are completed with an intelligent disinfection and cleaning program.

Vector Paro basic device

Service

Vector/RinsEndo Disinfectant and Vector cleaner for the hose system

Sterilisation and storage boxes



Vector Marketing package:
We will help you to market your Vector treatment with free advertising material, comprising patient brochures, displays and posters.

Vector DVD:
A user film explains how the instruments are used. A lively user manual and other documents provide additional information.

Vector Scaler basic device

Technical information and literature references

	Vector Paro
Installed load (V/Hz)	230, 50/60
Working frequency (kHz)	25–35
Water tank volume (ml)	600
Water consumption of Paro handpiece (ml/min)	Approx. 30
Vector Fluid polish (µm)	Average particle size: <10
Bag content of Vector Fluid polish (ml)	200
Dimensions (H x T x B cm)	16 x 21.5 x 25.5
Weight (kg)	2.5

Vector literature references

1. **Braun et al. (2003)** Subjective intensity of pain during the treatment of periodontal lesions with the Vector-system
2. **Christgau et al. (2007)** Periodontal healing after non-surgical therapy with a new ultrasonic device: a randomized controlled clinical trial
3. **D'Ercole et al. (2006)** Effectiveness of ultrasonic instruments in the therapy of severe periodontitis: a comparative clinical-microbiological assessment with currettes
4. **Hoffman et al. (2005)** Use of the Vector scaling unit in supportive periodontal therapy: a subjective patient evaluation
5. **Kahl et al. (2007)** Clinical effects after subgingival polishing with a non-aggressive ultrasonic device in; initial therapy
6. **Kawashima et al. (2007)** A comparison of root surface instrumentation using two piezoscalers and a hand scaler in vivo
7. **Kishida et al. (2004)** Effects of a new ultrasonic scaler on fibroblast attachment to root surfaces: a scanning electron microscopy analysis
8. **Kocher et al. (2005)** A new ultrasonic device in maintenance therapy: perception of pain and clinical efficacy
9. **Rupf et al. (2005)** In vitro, clinical and microbiological evaluation of a linear oscillating device for scaling and root planning
   In vivo: 11 patients with chronic periodontitis. They had in total 120 single rooted teeth with a clinical attachment level and probing depth of 5 mm
10. **Schwarz et al. (2003)** Influence of fluorescence-controlled ER: YAG laser radiation, the Vector system and hand instruments on periodontally diseased root surfaces in vivo
11. **Schwarz et al. (2003)** In vivo effects of an ER: YAG laser, an ultrasonic system and scaling and root planning on the biocompatibility of periodontally diseases root surfaces in cultures of human PDL fibroblasts
12. **Sculean et al. (2004)** Non-surgical periodontal treatment with a new ultrasonic device (Vector ultrasonic system) or hand instruments. A prospective, controlled clinical study

DÜRR DENTAL AG
Höpfigheimer Strasse 17
74321 Bietigheim-Bissingen
Germany
www.duerr.de
info@duerr.de

DÜRR DENTAL