

CONELOG® Implant System – facts and figures at a glance

Excellent results of the CONELOG® implant system
Precision of fit and preservation of crestal bone

Aim

To provide important insights into the scientific documentation of the CONELOG implant system based on facts and figures.

Introduction

Only very few implant systems have been systematically and thoroughly documented in the literature. The CONELOG implant system belongs to these well documented systems because encouraging independent research is fundamental to the Camlog strategy. The well-established features of the system like the sandblasted and acid-etched Promote® surface, the platform switching, the outer geometry, and the internal conical implant-abutment connection are based on the scientific state-of-the-art and were evaluated in numerous mechanical, in-vitro, and clinical studies (Fig. 1).

TAKE HOME MESSAGE:

1. Clinically well-established implant system
2. Superior precision of the implant-abutment connection
3. Excellent preservation of crestal bone level
4. Mastering modern treatment options

Success built on progress with clinical evidence

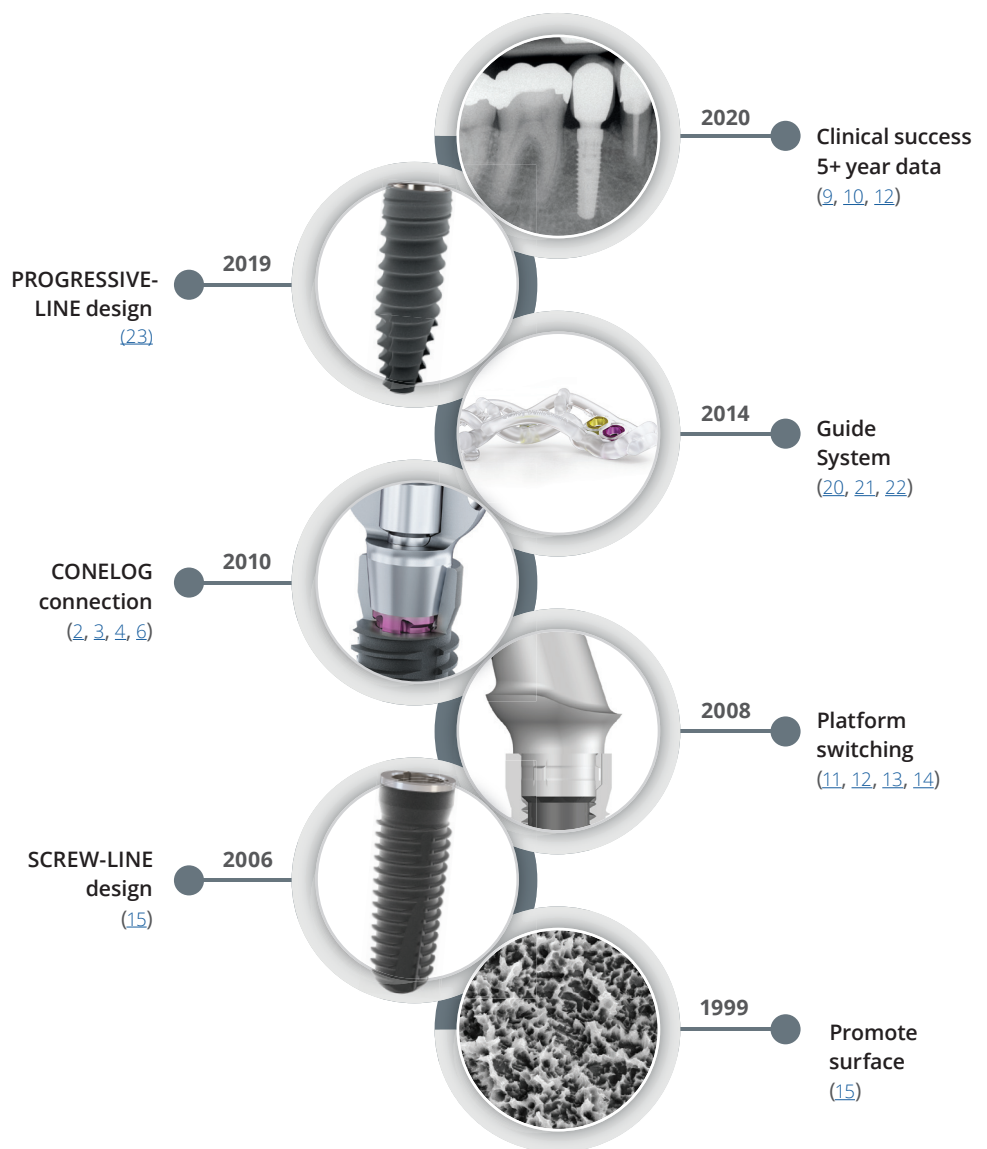


Fig. 1: The development of the CONELOG® implant system is based on a solid foundation of scientific research.

Precision of the conical connection

CONELOG implants offer a patented implant-abutment connection with self-locking cone geometry and cams/grooves indexing. Several in-vitro tests have demonstrated the precision and stability of the implant-abutment connection attributable to geometrical design and high-precision manufacturing (1, 2, 3, 4). The reduced rotational freedom given by the indexing design and the ability to reposition the abutment without vertical displacement play a major role in the precision of the final prosthetic restoration. Mechanical studies with disassembly and reassembly of the implant-abutment complex showed excellent results for the CONELOG connection compared to other systems with conical connections (3, 4) (Fig. 2).

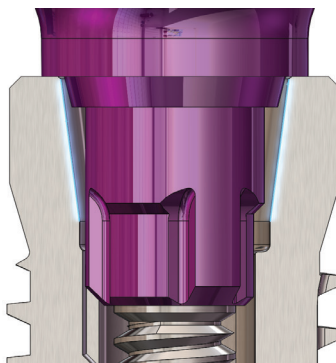


Fig. 3: "Vertical fit feature": the impression post is not in contact with the cone during impression taking. The vertical discrepancies – inherent to all conical connections – are reduced by this concept.

Excellent bone preservation with platform switching

Preservation of the crestal bone is important for the peri-implant long-term stability. Studies with CONELOG implants with integrated platform switching showed very stable conditions (9, 10) and even slight bone gain 5-year post-loading (11, 12). These data confirm the positive effect of platform switching found in various studies with Camlog implants (13, 14).

Clinically proven success and patient satisfaction

The Promote surface has proven to be effective in various preclinical and clinical studies over years (15). For the CONELOG SCREW-LINE implants several clinical studies documented very positive mid- and long-term treatment outcomes in different indications and loading modalities (9, 10, 16, 17, 18). High survival rate, excellent stability of hard and soft tissues as well as a patients' satisfaction of 100% could be shown in a multicenter study in daily dental practice with follow-up controls up to 7 years (9). The short implants (7mm) are established as reliable and safe treatment option to avoid sinus augmentation procedures in the posterior maxilla (10) as well as with splinted and non-splinted fixed dental prostheses in the posterior mandible (19).

Guide system accuracy

Template guided implant placement is a method to ensure the ideal implant position for immediate or delayed restoration. The difference between the virtually planned and the clinically achieved implant positions

with the CONELOG Guide system was evaluated in several clinical trials (20, 21, 22). The accuracy was proven to be high leading to predictable prosthetic results independent of the implant position and the implant dimensions used (20).

Modern treatment option – PROGRESSIVE-LINE

CONELOG implants are available with two different outer macro-designs: SCREW-LINE and PROGRESSIVE-LINE. The PROGRESSIVE-LINE implants have a conically shaped apical area and buttress threads to develop high initial stability. In the coronal area, a crestal anchoring thread gives support for optimal hold with limited bone height, e.g. in sinus lift procedures (Fig. 4).



Fig. 4: PROGRESSIVE-LINE implant placed in posterior maxilla with simultaneous sinus lift (picture courtesy of Dr. R. Polsbroek)

In extraction sockets, these implants showed excellent stability based on insertion torque and ISQ measurements (23) and thus enable modern treatment concepts such as immediate implantation or immediate loading even in soft bone.

Conclusion

The solid documentation of the CONELOG implant system is based on scientific evidence. This is an important contribution to Camlog's success story. The long-term data of the Promote surface, the use of platform switching, the positioning, and the stability of the implant-abutment connection are key factors contributing to the excellent performance of CONELOG implants in clinical practice. Continuous developments of the system satisfying modern treatment options are going hand in hand with clinical evidence.



Fig. 2: Precision of different conical connections: See White paper X.J7777.09/2020.

Microgaps and its impact, i.e. micro-leakage or bacterial penetration are the reason to aim for small manufacturing tolerances of all the components in two-piece implant systems. Microgaps are impossible to eliminate also in a conical connection (5, 6, 7, 8), but it is the good balance of the precision of a deep conical connection and CONELOG specific features which enable to support the clinician in achieving accurate restorations and easy workflow (Fig. 3).

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