OSSTELL

# Seven Osstell articles – summaries

## Application of Platelet-Rich Plasma as an Accelerator of the Secondary Stability of Immediate-Loaded implants.

*Stefan Peev, DMD*. Inside Dentistry, September 2007, Special Issue 2

Study: This article describes a protocol for immediate functional loading of osseointegratable implants that relies on high primary stability and the acceleration of secondary stability by the use of platelet-rich plasma (PRP) as a source of autogenuos growth factors. Limits for ISQ at placement (60) and changes in ISQ (not going lower than 50 during healing) are used to secure the clinical outcome.

## Use of Resonance Frequency Analysis to Optimize Implant Therapy.

*Hart C, Buser D*. Starget 2006, no 4.

This is an article that describes how Osstell mentor is used in clinical practice and includes three case reports. The first case is about three implants placed in the posterior maxilla, eight weeks of healing and then loading. The second case describes how poor bone density causes the initial ISQ to be low, and after 12 weeks with increasing values, the implants are loaded. The third case is a case with two implants, whereas one is showing decreasing values. After further healing however, the implants became successful.

## Reconstruction of the Atrophic Edentulous Maxilla with Free Iliac Grafts and Implants: A 3-Year Report of a Prospective Clinical Study.

*Sjöström M, Sennerby L, Nilsson H, Lundgren S.* Clinical Implant Dentistry and related Research, Volume 9, Number 1, March 2007, pp. 46-59(14)

Study: Longitudinal follow-up study of implant stability in grafted maxillae with the aid of ISQ measurements, clinical and radiological parameters. The study included 29 patients and 192 Branemark implants. The Osstell instrument has been used in this study.

Conclusion: When comparing the mean ISQ for sucessful (n=170) and failing (n=20) implants, there was a significant difference in ISQ value between sucessful and failed implants at placement.
The authors conclude that the ISQ value at time of placement can probably serve as an indicator of the level of risk for implant failure. The Osstell® instrument has been used in this study.

## Evaluation of Two Different Resonance Frequency Devices to Detect Implant Stability: A Clinical Trial.

*Valderrama P, Oates T, Jones A, Simpson J, Schoolfield J, Cochran D*. Journal of Periodontics. 2007, Vol 78, 262-272.

Study: The study compares Osstell instrument and Osstell mentor in 17 patients with 34 Straumann implants. Conclusion: The study demonstrates good correlation between the two instruments. Both devices confirmed the initial decreases in implant stability that occur following placement and identified an increase in stability during the first 6 weeks of functional loading.

## Implant stability measurements using resonance frequency analysis: biological and biomechanical aspects and clinical implications. *Sennerby L, Meredith N.*

Periodontology 2000, Vol. 47, 2008, 51–66.
This article summarizes much of the science around Osstell and ISQ. It describes what implant stability is and how it can be measured. It talks about clinical implications of measuring ISQ, as well as how different ISQ levels and ISQ trends can be interpreted.

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## Primary stability determination: operating surgeon's perception and objective measurement.

*Degidi M, Daprile G, Piattelli A.* Int J Oral Maxillofac Surg. 200x in press.
A comparison between perceived ISQ and Torque values, and measured values. The result of the study is that it is not possible to correctly estimate implant stability by using tactile feeling at installation.

## Use of Osstell for determination of implant staging and loading protocols to improve implant success rates.

*Jimenez D, Shah K, El-Ghareeb M, Aghaloo T, Pi-Anfruns J, Hameed S, Chiang J, Judge N, Ivry B, Wakimoto M, Moy P.* Poster presentation AO, 2009.
The study shows that when directly loading implants with ISQ < 50, the failure rate increases three times compared to implants with ISQ > 50.