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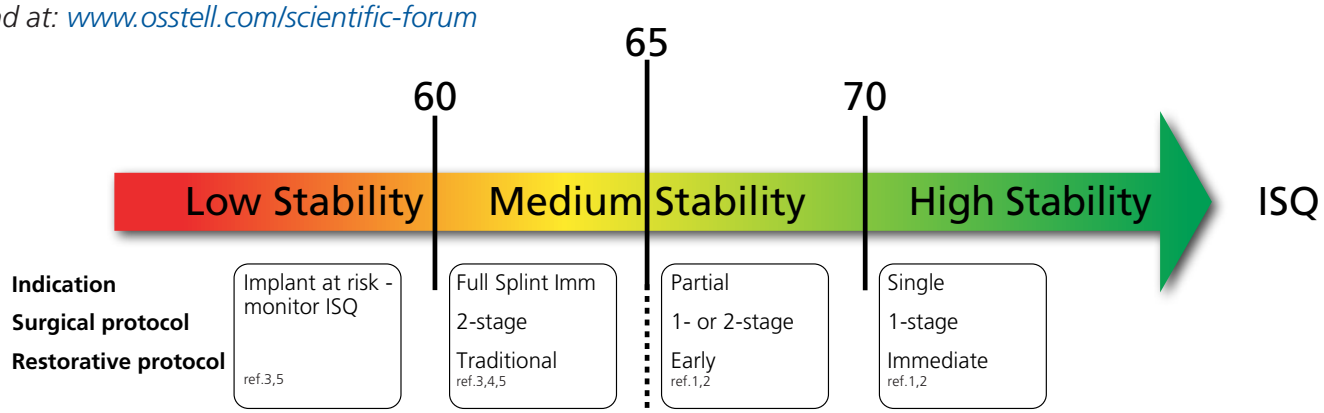

1) **Early Loading of Nonsubmerged Titanium Implants with a Chemically Modified Sand-Blasted and Acid-Etched Surface: 6-Month Results of a Prospective Case Series Study in the Posterior Mandible Focusing on Peri-Implant Crestal Bone Changes and Implant Stability Quotient (ISQ) Values**
Michael M. Bornstein, Dr. med. dent.; Christopher N. Hart, DMD; Sandro A. Halbritter, Dr. med. dent.; Dean Morton, BDS, MS;† Daniel Buser, Prof. Dr. med. dent.
Clin Implant Dent Relat Res 2009

These studies support the ISQ/RFA method to be a useful tool for the clinician in daily practice, if the concept of immediate or early loading is applied. For early loading, a consecutive measurement of ISQ values seems important to compare the values at implant placement and at the day of anticipated loading.

If the ISQ value at day to load is < 65, an additional healing period is recommended, and the ISQ values is measured again 3 weeks later until the required level is reached. This approach is practical and well understood by patients. (Prof. Daniel Buser prefers ≥ 70 ISQ, single teeth, early loading/Straumann, otherwise add three weeks, according to an oral presentation given at the Osstell Scientific Symposium in connection to the of the EAO 2010.)

2) **The Predictive Value of Resonance Frequency Analysis in the Surgical Placement and Loading of Endosseus Implants**
Baltayan, Serge; Mardirosian, Martin; El-Ghareeb, Moustafa; Aghaloo, Tara; Pi-Anfruns, Joan; Moy, Peter
AAID Poster 2011

One-stage placement of implants with ISQ values greater than 66 can be performed. Implants with ISQ values less than or equal to 66 should be placed using the two-stage protocol, which shows a higher survival rate. The computed ISQ = 66 cut-off value used to select between one-stage and two-stage placement is validated in this study. Moreover, early loading of implants with ISQ values greater than 64 can be performed. Implants with ISQ values less than 64 should utilize traditional loading, which shows a higher survival rate. The computed ISQ = 64 cut-off value used to select between early and traditional loading is validated in this study. Higher ISQ values at osseointegration correlate with higher survival rates.

3) **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

Two or more splinted implants were used as co-abutments for all of the implants included in the research. Limits for ISQ at placement was at least 60 ISQ and changes in ISQ are used to secure the clinical outcome. If the registered ISQ dropped below 50, the implant was unloaded by replacing the abutment with a short cover screw.

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4) **Direct Loading of Implants**
Pär-Olov Östman DDS, PhD, MD, Private practitioner, Falun- and Biomaterial group, Sahlgrenska Academy, Gothenburg - Tandläkartidningen årg 100 nr 3, 2008

Paper IV
20 consecutive patients with totally edentulous maxillas were included in the study. The criteria for direct loading was insertion torque 30 Ncm and an ISQ > 60 on the most posterior implants and a sum of 200 ISQ (average 50 ISQ) on the 4 anterior implants.

The overall conclusion with the thesis is that dental implants can be direct loaded with a good result if high primary stability can be obtained and if a stable provisional bridge with good occlusion is splinting the implants.

5) **Diagnosis of Implant Stability and its Impact on Implant Survival: A Prospective Case Series Study**
Daniel Rodrigo, Luis Aracil, Conchita Martin, Mariano Sanz
Clin. Oral Impl. Res. 21, 2010; 255-261

The evaluation of RFA values to assess implant secondary stability (Osstell 2) demonstrated a statistically significant correlation with implant outcome. In fact, **no implant with ISQ > 60 failed, while 19 % of implants with ISQ < 60 failed.**

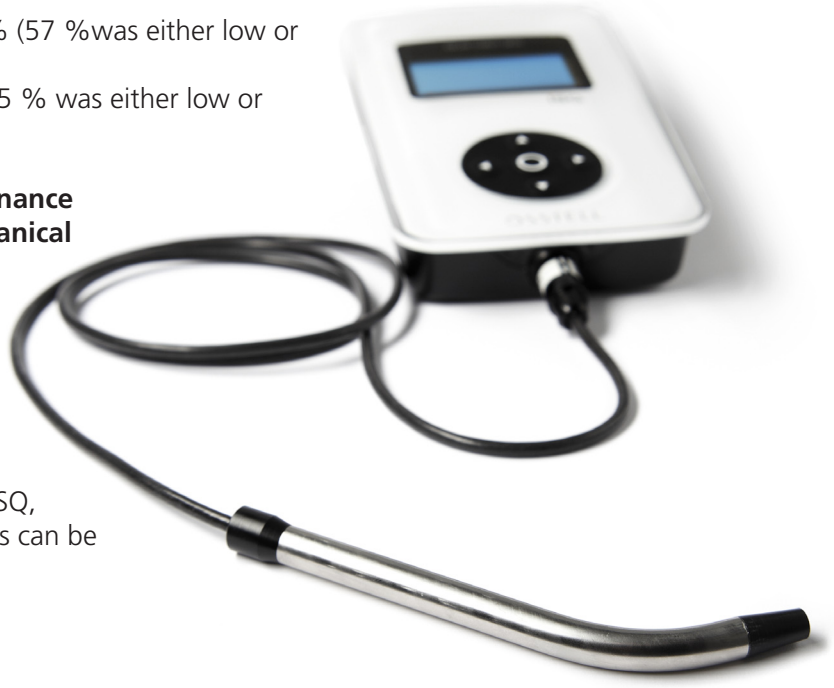
6) **Implant Stability Quotient (ISQ) vs Direct in Vitro Measurement of Primary Stability (Micromotion): Effect of Bone Density and Insertion Torque**
Paolo Trisi PhD, Teocrito Carlesi DDS, Marco Colagiovanni DDS, Giorgio Perfetti MD, DDS
Journal of Osteology and Biomaterials, Volume 1, Number 3, 2010

Results showed a high dependence between the observed micromotion and the ISQ values, indicating that micromotion decreased with increasing ISQ values. An in vitro study and the results cannot be directly transferred to clinical applications.

7) **Determination of Primary Stability: A Comparison of the Surgeon's Perception and Objective Measurements**
Degidi M, Daprile G, Piattelli A. - Int J Oral Maxillofac Implants. 2010 May-Jun;25(3):558-61.

The accuracy of primary stability prediction is not good enough to prevent mistakes when using an immediate loading technique, thus a more systematic use of objective measurements has to be encouraged.

- Low perception of RFA was correct in 19 % (81 % was either medium or high real RFA)
- Medium perception of RFA was correct in 43 % (57 %was either low or high)
- High perception of RFA was correct in 85 % (15 % was either low or medium)



8) **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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