



# Osstell ISQ

Your guide to  
optimal implant loading decisions

# Three reasons why you need Osstell ISQ.

## With a success rate above 95%, who needs diagnostics?

Implant treatment is one of the most predictable dental therapies, with near-perfect success rates.

However, the nature of the treatment is evolving. Today, more patients ask for immediate loading of their implants. And patients who in the past might not have been candidates for implants ask to be treated, too.

This naturally puts greater requirements on the dentists and the technology. Allowing early loading, and successfully treating risk patients – despite the less favorable odds – create a need for more capable diagnostic tools.

Osstell ISQ is such a tool. It's a complete diagnostics system for determining dental implant stability. It provides the treating dentist with the accurate, consistent and reliable stability measures needed for making informed load decisions, avoid failure and give patients added quality assurance.

1. Optimal loading decisions
2. Early warnings – preventing failure
3. Quality assurance

## 1. When is the right time to load? Osstell ISQ helps you decide.

The Osstell® ISQ system makes it easier for dentists to decide when is the optimal time to load implants. It's the ideal complement to their own tactile assessment.

The decision will always be a complex one. Several key clinical parameters and risk factors are involved – most of them related to the stability of the implant. Accurate measurements of implant stability therefore provide valuable diagnostic insight that helps ensure successful treatments.

At placement, stability can be difficult to quantify objectively by merely relying on tactile perception. Torque measurements are difficult to repeat once the implant has started to integrate and can therefore not provide a baseline for subsequent comparisons. The invasive torque method may even damage the healing if used for monitoring osseointegration.

The Osstell ISQ meter addresses this dilemma in a unique way. Not only does it measure and quantify the primary implant stability with unparalleled accuracy. In a two-step treatment – still the predominant scenario – it also provides secondary measures. This makes it possible to monitor osseointegration over time and determine the optimal time for loading the implant.

## 2. Early warnings instead of failure.

A failed treatment results in suffering for the patient and considerable costs for both the patient and the dentist. A precise and reliable diagnostics tool like Osstell ISQ reduces the risk of failure.

Each implant patient is unique and must be judged by his/her own characteristics. Factors affecting the

outcome of loading include the patient's age, the density and volume of the bone – as well as the degree of osseointegration.

Dentists sometimes encounter patients whose initial stability score is low. The reason could be that they have had to undergo a bone graft. In such higher-risk situations, most surgeons would avoid an early-loading protocol.

Similarly, a significant decrease in stability indicates a potential problem and should be considered an early warning. The surgeon may prefer to unload the implant – or perhaps place additional implants – and then wait until stability increases.

Thanks to the accuracy of ISQ measurements, surgeons can make a more well-informed choice of protocol for each patient. And by comparing initial and secondary stability readings, they can detect and act on any unexpected development during healing and osseointegration.

This makes the treatment of high-risk patients easier and more predictable – allowing more of these patients to be treated and more of their treatments to be successful.

## 3. Diagnostics add quality.

Because Osstell ISQ helps the dentist decide when to load and avoid failure in high-risk situations, it becomes a quality-assurance system for the clinic. Most patients intuitively understand the stability measures and how they govern when to load an implant and when to wait. This increases their sense of confidence, security and quality.

Osstell ISQ also facilitates communications – between surgeon and dentist, as well as between different clinics. They can now compare treatments and results in an objective manner, and transfer valuable knowledge and experience among themselves or to dentists in training.

*Dr Tiziano Testori, Private Practice, Como, Italy:  
"I use the Osstell meter as a quality-assurance tool for documentation and for communication within my team, with referrals and with my patients."*

*Dr Peter Andersson, Private Practice, Feltre, Italy:  
"I use the Osstell meter to follow ISQ for implants in compromised situations, and for quality assurance."*



# ISQ. The blessings of a universal scale.

ISQ (Implant Stability Quotient) is a measurement scale for use with the RFA (Resonance Frequency Analysis) method of determining implant stability. It's a mapping of resonance frequencies (kHz), presented as a clinically useful scale of 1-100 ISQ.

Here is how ISQ works and what it achieves.

The Osstell ISQ meter stimulates a SmartPeg™ mounted on the implant, by emitting magnetic pulses. These cause the SmartPeg to resonate with certain frequencies depending on the stability of the implant. The resonance is picked up by the Osstell ISQ meter.

The SmartPegs have been calibrated in such a way that they all show comparable values for the same degree of stability, even when measuring implants from different systems.

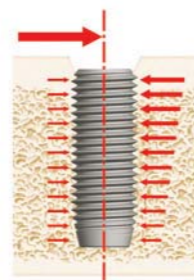
The ISQ scale makes it possible to establish a standard clinical range within which stability values should fall to make a successful treatment outcome likely. Several

**ISQ™**

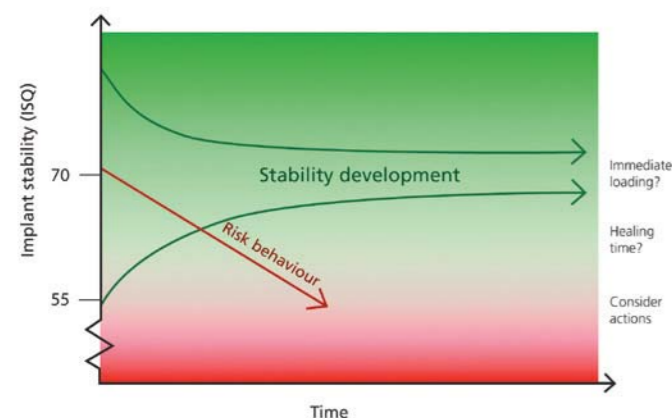
Find out more about the universal ISQ scale by visiting [www.isqforum.com](http://www.isqforum.com)

studies have been conducted based on RFA measurements and the ISQ scale. They provide valid indications that the acceptable stability range lies above 55 ISQ.

ISQ values have also been used to generate the graph shown here, which has proven useful for determining if an implant is sufficiently stable at any stage of the treatment process.



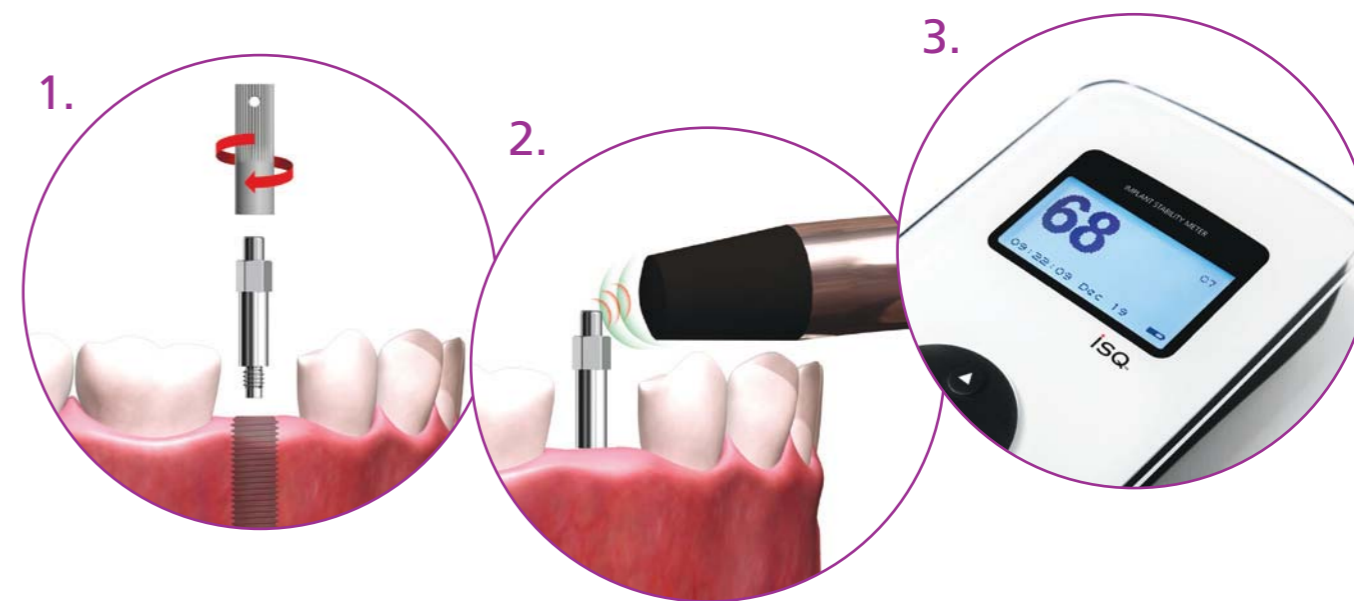
The lateral stability of an implant depends on the rigidity of the bond between the implant surface and the surrounding bone. This rigidity can easily be measured.



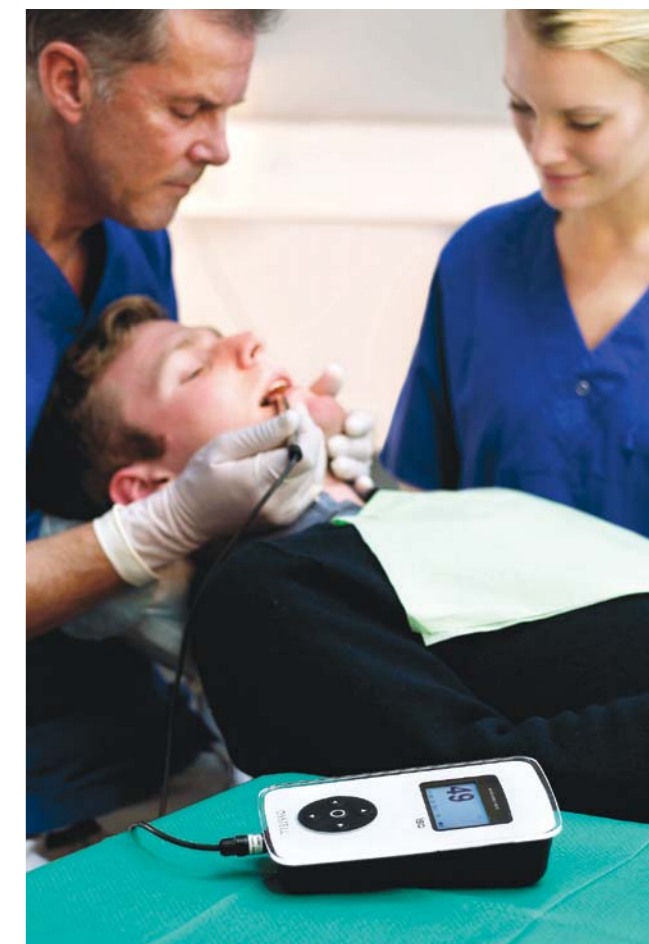
This graph illustrates the progress of implant stability over time, expressed in ISQ terms. The converging green curves show the two most likely scenarios: implant stability eventually sets at around 70 ISQ. A high initial ISQ value tends to decrease, as mechanical stability is supplanted by osseointegration. And a low initial value tends to increase, as osseointegration sets in. The scenario to watch out for is illustrated by the red curve. Here, osseointegration is not progressing as planned, and loading such an implant may result in a failed treatment.

## Osstell ISQ. Comfortable, fast and easy to use.

Obtaining exact implant stability measures using the Osstell ISQ meter is a completely non-invasive procedure. It can normally be performed in a few seconds. Experience shows that patients find it both comfortable and reassuring.



1. The SmartPeg is attached to an implant. It screws effortlessly into the implant's inside thread.
2. The hand-held probe stimulates the SmartPeg magnetically, without actually being connected to it – or even touching it.
3. An ISQ value is generated and shown on the display. It reflects the level of stability on the universal ISQ scale – from 1 to 100. The higher the ISQ value, the more stable the implant.





# Scientific references.

More than 300 scientific reports and papers on the measurement of dental implant stability have been published around the world. Some of these are listed below. More can be found on Osstell's website, [www.osstell.com](http://www.osstell.com)

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