The use of dental implants to replace missing teeth has become a routine treatment modality for patients missing teeth. With the acceptance of this form of treatment, patient demands have increased for sooner completion of their treatment and long-term predictability. The clinician must be able to meet the demands from their patients for quicker loading protocols and higher predictability. Unfortunately, with quicker loading protocols, this introduces some uncertainty whether an implant may take prosthetic loading or if it is still undergoing Osseointegration and at risk for failure if loading forces are applied to the healing implant.1

The Osstell Resonance Frequency Analyzer (RFA) unit is a device that measures the resonance frequency of a rod (SmartPeg) connected to the implant. Dependent on the value of the resonance frequency, the Osstell calculates a number, the Implant Stability Quotient or ISQ, Fig. 2) indicating how stable the implant is. The higher the number, the more stable the implant. The advancements and improvements made to the Osstell unit have made it possible for the clinician to determine the primary stability established at the time of implant placement by using the Osstell.2 Once the initial stability of an implant (ISQ) is measured this baseline reading can be used to compare additional and successive ISQ measurements enabling the clinician to determine how the biologic process of Osseointegration is progressing.3 This method of assessing implant stability can provide the clinician with information that can be used to determine that the implant is ready to take prosthetic loading and more importantly, the implant will provide long-term support for a definitive prosthesis. (Figs. 3–8) There are several advantages to comparing successive ISQ measurements to a baseline initial recording. These advantages include permitting the clinician to determine proper healing protocol for an implant that was placed4 (delayed, early or immediate loading), determine when the implant5, when an implant may be failing to integrate.

The use of Osstell and obtaining successive ISQ measurements in implant dentistry is well documented. There are well over six hundred articles published in refereed journals (available at www.osstell.com) that illustrate the science and benefits behind the use of ISQ measurements. This is one data generating device that an implant dentist must have and use on a daily basis to ensure optimizing clinical outcomes of implant treatment for their patients.

Editorial note: A complete list of references is available from the publisher.