Dental implants can be successful with less root than crown

Dental implants are now a common way to replace a tooth. But a dentist must first determine that an implant restoration can be successful for a particular patient.

As an indicator, dentists use the crown-to-root ratio — how much of the tooth extends above the jawbone and how much is in the bone. However, the ideal crown-to-implant ratio for the replacement tooth has yet to be determined.

A new study in the current issue of the Journal of Oral Implantology evaluated the health of implants that had been in place more than five years. By examining the crown-to-implant ratios in these cases, the authors found that this factor was not as important to the success of implants as previously thought.

Radiographs were used to examine 309 single-tooth short-length implant-supported restorations in 194 patients. All the implants had been surgically placed between February 1997 and December 2005.

The ideal crown-to-root ratio for a tooth to serve as an abutment for a partial denture is considered 1 to 1.
2 — twice as much root as crown. But previous studies have given mixed results about ratios for implanted teeth. Excessive crown-to-implant ratios have been named as detrimental to long-term survival of an implant, while disproportionate ratios have been noted in high rates of implant survival.

The current study found an average crown-to-implant ratio of 2 to 1. Natural teeth with such ratios would often be recommended for extraction and replacement. The authors found that stable implants could be produced with less of the tooth serving as root. Additionally, the study found no statistically significant relationship between increasing crown-to-implant ratios and decreasing bone-to-implant contact levels around the implant.


About the Journal of Oral Implantology
The Journal of Oral Implantology (JOI) is the official publication of the American Academy of Implant Dentistry and of the American Academy of Implant Prosthodontics. It is dedicated to providing valuable information to general dentists, oral surgeons, prosthodontists, periodontists, scientists, clinicians, laboratory owners and technicians, manufacturers and educators. The JOI distinguishes itself as the first and oldest journal in the world devoted exclusively to implant dentistry. For more information about the journal or society, visit www.joi-online.org.