

IMPLANTS

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Shimstock and Occlusal Maintenance of Dental Implants

By Jeffrey Bonk (/spear-review/author/jeff-bonk/) on March 10, 2021 |  (/bookmarks/bookmark/39790) SHARE

Implants are a mainstream and important treatment choice for replacement of missing teeth. Maintaining dental implants, just as natural teeth, is a crucial component or factor for promoting health and long-term viability.

It is recommended all dentists have a prescribed regimen for the evaluation and maintenance of dental implants. Patients who get implant (<https://www.speareducation.com/spear-review/category/implants>) treatment should receive systematic and continuous supportive care for the dental implant and the supporting tissues. Ideally, the evaluation of the dental implant should include the following:

- Condition of the soft tissues
- Plaque index
- Tissue probing depth
- Bleeding on probing documentation
- Evidence of suppuration
- Tissue margin position and stability

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- Keratinized tissue evaluation
- Mobility and occlusion.

All these aspects should be routinely evaluated on regular re-care or dental checkup appointments. At the check-up, the dentist, hygienist, or another supportive team member can evaluate all criteria and subsequently report to the dentist any findings.

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Occlusal evaluation is a critical to the longevity of the dental implant

Mucositis is defined as, “the reversible inflammation of peri-implant soft tissues.” Alternatively, peri-implantitis is characterized by, “the irreversible loss of bone support.” Peri-implantitis is a serious condition that requires continuous monitoring and active interception.

As successful as implant therapy has been over the previous 30+ years in clinical practice, there has been a steady increase in peri-implant mucositis and peri-implantitis. Recent studies determined the prevalence of peri-implantitis range from 1%-22%.

Current guidelines for maintenance of implant restorations are poorly defined. Most procedures are based upon protocols for patients with natural dentitions. As indicated previously, sound guidelines are necessary for evaluating and providing direction toward improving implant outcomes and reducing the incidence of peri-implant disease.

Occlusal evaluation is a critical component for the longevity of the dental implant. Occlusion provides for adequate posterior support and eccentric guidance at an appropriate vertical dimension. Potentially destructive effects occur from excursive parafunctional movement and excessive vertical overload. These excessive forces can contribute to rapid and substantial peri-implant bone loss.

The occlusal tactile sensitivity for natural teeth has been measured to be as low as 8-10 microns. Alternatively, the occlusal sensitivity of dental implants is approximately 48 microns. The lack of periodontal ligament contributes to this delayed response. Bone deformation must occur for an individual to become aware of an occlusal interference. This disparity may easily result in occlusal trauma and a potential for implant periodontitis, bone loss and subsequent implant loss. Managing occlusal forces is critical for long-term viability of dental implants.

Here is a suggested protocol for evaluating and managing occlusal forces on dental implants at dental re-care appointments.

It is common for dentists to check occlusion with articulating papers or ribbon when an occlusal disparity is present. The contact mark left behind allows for visualization of the touchpoint; however, papers and ribbons are too thick, relative to the destructive micro forces applied to dental implants. Dental marking ribbons have thicknesses ranging from 20-200 microns (depending upon manufacturer). This large disparity does not provide adequate information for assessing implant overloading.

A simple tool and approach to assess implant contact is to use shimstock foil as a tooth/implant contact evaluation tool. Shimstock thickness is on the order of 8-13 microns. It is thinner than articulating papers and ribbons. Although it is not inked and will not leave a mark on the tooth, it provides for a micro-assessment of occlusal holding forces.

Implant patients in my practice are generally placed on a 3-4-month re-care cycle. All parameters outlined above are implemented by the hygienist in evaluating dental implant health and stability. Many times, these appointments are alternating between my collaborative implant surgeon/periodontist and our office.

As part of the occlusal evaluation sequence protocol, the dental hygienist places a strip of shimstock foil on the occlusal surface of the dental implant restoration. The patient is instructed to bite together with gentle/normal tooth contact (MIP). While the patient is maintaining this contact, the dental hygienist attempts to remove the shim stock with the cotton forceps.

If the occlusal force is proper, the shimstock should easily be removed with minimal or no resistance. If occlusal contact is present, this indicates that excess force is being applied to the dental implant and² occlusal adjustment is necessary.

The shimstock should only be retained by the patient when a heavy loading (biting) force is applied. Patients who exhibit holding contact at MIP are scheduled for a subsequent occlusal evaluation and occlusal implant adjustment.

I have found patients are willing to schedule follow-up occlusal adjustment appointments, as they realize the comprehensive evaluation approach and the importance of occlusion and implant longevity.

Patients make large investments in their dental health. Dental implants are a strategic piece of many dental reconstructions. Maintaining and reinforcing implant longevity is part of our shared objective with patients.

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