Disconnection and reconnection of the abutment disrupts the biological zone, inducing the junctional epithelium to migrate apically beyond the implant-abutment junction until it can adhere again. This often results in marginal bone loss, particularly in cases of thin gingival biotype.

It is important to minimize the bacterial contamination in and around the implant-abutment junction. The seal provided by an abutment of locking-tapered design has been demonstrated to be optimal in this respect, in vitro (Dibart et al., 2005).

Implant abutments of gold or glazed ceramic should be avoided. Only titanium or zirconium abutments are recommended because hemidesmosomes have been shown to attach to them (Touati and Guez, 2002).

In order to retain soft and hard tissue around the implant-abutment connection, the transmucosal aspect of the implant abutment should not be oversized and divergent, but rather narrow and concave in order to induce thickening and immobilization of the peri-implant tissues, thus increasing the interface between the implant and the soft tissue, and creating an “O-ring connective tissue”. This will ensure the long-term stability of the biological width (Rompen et al., 2007).

Beneath the restoration, the concave abutment should provide maximum space to the soft tissue and clearly avoid a flared geometry. Its submerged profile should be negative to avoid compression of and to allow maximum thickness and stability of the soft tissue, as well as for more room for the biologic width (Touati 2004). On the buccal aspect, the emergence profile of both the provisional and the final restorations should be flat or concave (under-contoured), to minimize pressure-induced apical migration of the gingival margin.

Design of final crowns to comply with the following “norms” will go a long way toward optimising papillary form (Salama et al., 1999; Elian et al., 2002):

- Distance from interdental bony crest to contact point between natural crown and implant-borne crown: 4.5 mm
- Distance from inter-implant bony crest to contact point between two implant-borne crowns: 5.8 mm
- Distance between bony crest and connection point between an implant-borne crown and a pontic: 5.5 mm

7) Occlusal trauma

It has been proven that an excessive occlusal load during...