

## The effect of salivary contamination on the torque tightening of the dental implant abutments

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**Background:** Among the different problems in both of biological and mechanical aspects of the support implant prostheses occurs, screw loosening of abutment is one of the most common problems clinical report. It has always been concerned on what kinds of affects the infection of threads into the oral fluids on the abutment screw loosening.

**Method:** In this study 10 fixtures (Regular Neck ITI, Internal hex size 12×4. 1 mm) and also 10 direct one-piece Solid abutments (10 mm in length) and 10 direct two-piece Synocta abutments was used. A torque measuring devise (torque meter digital Mark10) was used to measure the resulting torque. Experiments were done in two stages, once for direct Solid abutment and another time for direct Synocta abutment. With the use of ratchet torque control, abutments were sealed with 10, 20 and 35 Ncm torque and necessary torque to open it using the device was measured. The experiment was conducted in three phases. First, in a dry and standard environment, Second threads impregnated with artificial saliva and in the third stage, filling the Fixture with artificial saliva. Results were analyzed using independent T-test or its nonparametric equivalent.

**Results:** With changing environment from dry to impregnate with artificial saliva, the required torque to open both abutments increase shows significant effect of the environment on required torque to open the abutment. The Solid abutments show higher torque than the Synocta abutments for opening.