

[Acta Biomater.](#) 2009 Nov 16. [Epub ahead of print]

Adhesion of *Candida albicans* to various dental implant surfaces and the influence of salivary pellicle proteins.

[Bürgers R](#), [Hahnel S](#), [Reichert TE](#), [Rosentritt M](#), [Behr M](#), [Gerlach T](#), [Handel G](#), [Gosau M](#).

Department of Prosthetic Dentistry, University Medical Center Regensburg, 93042 Regensburg, Germany.

Dental implants may be considered a potential reservoir for (re)infection with oral *Candida albicans*. Our aim was to evaluate initial fungal adhesion to three differentially textured titanium and one zirconia implant surface, and to correlate these findings to differences in specific surface characteristics (surface roughness (R(a)) and surface free energy (SFE)). Additionally, we investigated the influence of salivary protein films and two pellicle proteins (mucin and albumin). Implant surfaces were characterized by perthometer (R(a)) and goniometer (SFE) measurements. Implant specimens were rinsed with human whole saliva, mucin, albumin, or phosphate buffered saline and incubated in *C. albicans* suspension for 2.5h. Adherent fungi were quantified by means of a bioluminometric assay. The lowest amount of fungal cells was found on sand-blasted titanium, whereas zirconia implants did not show any reduced potential to adhere *C. albicans*. The influence of the implant SFE on fungal biofilm formation appears to be more important than the influence of R(a). The protein mucin enhanced *C. albicans* accumulation. In contrast, albumin is unlikely to be involved in the adhesion process of *C. albicans*.

Copyright © 2009. Published by Elsevier Ltd.