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# Bioactive titanium implants for shorter healing period

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A new type of surface treatment for titanium implants has been developed. It combines grit-blasting and acid- and alkali-etching procedures to create three levels of roughness on the macro, micro and sub-micro scale. It has been previously shown that this Bio surface exhibits bioactive and osseointegrative properties.

The effect of the Bio surface on cell differentiation was studied using in vitro cultivated cells isolated from chicken embryos. The first results indicated that the chemically treated titanium surface had the ability to influence differentiation of the surrounding cells towards osteoblastic phenotypic expression.

The possibility of reducing the healing period by using implants with a Bio surface has been the subject of a clinical study. Over a period of 27 months, 485 implants

were studied. The healing time was reduced to periods between 90 % and to 30 % of the standard healing period. The success rate of the osseointegration was 99.4%, and the overall success rate of the implants was 98.6%. The statistical data processing reveals that it is possible to reduce the healing period to one half of the conventional time. A prospective clinical study will investigate the possibility of shortening the healing period even further.

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