

in this way the oral health educational messages reach not only the children but also their teachers, nurses and parents. A rather bad oral health situation, established at compulsory check-ups for enrolment in school, and the interest raised with those involved in the program indicate the need to continue its implementation.

## Biokorozijnsko ponašanje plemenite Au-Pt slitine u otopinama različita sastava i pH vrijednosti

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Korozijnska stabilnost i biokompatibilnost najvažniji su čimbenici za upotrebu neke slitine u ustima. Svrha ovoga rada bila je analizirati otpuštanje metalnih iona iz visoko plemenite zlatno-platinske (Au/Pt) slitine u različite otopine koje oponašaju različite uvjete u usnoj šupljini.

Zlatno-platinska (Au/Pt) slitina bila je *in vitro* izložena otopini koja oponaša slinu (Saliva; fosfatni pufer pH 6.0), u jako kiselome mediju koji oponaša ekstremne uvjete u usnoj šupljini (Ekstrem; fosfatni pufer pH 3.5) i u mliječnoj kiselini pri pH 3,5 što oponaša uvjete ispod dento-bakterijskoga plaka (Plak, mliječna kiselina pH 3.5). Po 6 uzoraka tvorničke slitine bilo je uronjeno u slinu, ekstrem i plak 1, 2, 3, 4, 5, 6, 7, 14, 21 i 30 dana. Otopine su analizirane na 15 metalnih iona s pomoću ICP-AES.

Rezultati pokazuju da je otpuštanje iona Zn, Cu, Fe i Cr ovisno o vremenu izloženosti i o vrsti otopine i njezina pH (ANOVA,  $p < 0.01$  za vrstu otopine, vrijeme ekspozicije i interakcijske uporedbe). Krom i željezo nisu bili deklarirani u Au/Pt slitini, a pronađeni su u otopinama.

Nedeklarirani ioni (npr. Cr) vjerojatno mogu biti uzrokom alergija koje se pripisuju zlatu.

## Biocorrosion Behavior of High Noble Au-Pt Dental Alloy in Different Solutions and pH Values

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Corrosion stability and biocompatibility are basic factors for oral use of dental alloys. The aim of this study was to analyse the release of metal ions from Gold/platinum (Au/Pt) dental alloy in the different conditions that may be found in the oral cavity.

Gold/platinum (Au/Pt) dental alloy was exposed *in vitro* to either simulated saliva (Saliva; phosphate buffer pH 6.0), highly acidic medium resembling the extreme conditions in the oral cavity (Acid; phosphate buffer pH 3.5), and in lactic acid at pH which occurs under the dental plaque (Plaque, lactic acid pH 3.5). The alloy was immersed in the Saliva, Acid, and Plaque solution for 1, 2, 3, 4, 5, 6, 7, 14, 21, and 30 days. The solution was analyzed for fifteen metals with the ICP-AES.

The results revealed time and solution dependent leaching of Zn, Cu, Fe, and Cr (ANOVA,  $p < 0.01$  for solution, time, and interaction comparison). Chromium and iron were not declared in the Au/Pt dental alloy.

Undeclared ions (eg. Cr) may be responsible for the allergy attributed to gold.