

was determined. Subjects from the rural environment had more teeth affected by caries, and those from urban environment had better teeth sanitation (66 %). Subjects who brushed their teeth three or more times per day and who regularly visited the dentist had significantly higher values of FT and FST index. Health condition of subjects from urban environment, was better (higher values of FT index and slower cumulative distribution and statistical significance of FST index). There was no statistically significant difference in values of DMFT index in relation to subjects from rural environment. High values of DMFT index were determined in Croatian Army recruits. FST index is more adequate than DMFT index for application in a population with a higher level of dental caries. The conducted research contributes to determination of the dental health of Croatian Army recruits as well as to the organisation of optimal preventive programs.

## Prevenција karijesa u prvim razredima osnovnih škola grada Zagreba

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Suvremena istraživanja pokazuju da je učinkovitost zdravstvenog odgoja mnogo veća ako je orijentirana na održanje zdravlja a ne na bolesna stanja. Provedenim programom željeli smo obuhvatiti djecu pri polasku u prvi razred osnovne škole te ih nastavnim procesom obavijestiti o osnovama očuvanja oralnoga zdravlja. Programom je obuhvaćeno 7000 djece, učenika prvih razreda u zagrebačkim osnovnim školama. Pri obveznom pregledu za upis u školu njihov je stomatolog na unificiranom obrascu utvrdio stanje oralnoga zdravlja. U prvim danima nastave dodatno izobražena preventivna medicinska sestra održala im je zdravstveno-odgojno predavanje te su djeca neposredno nakon predavanja sudjelovala u igraonici radom na bojankama. Uključivanje roditelja provedeno je s pomoću Bojanki i za tu prigodu napisanog Biltena. Nakon dva mjeseca, predavanje i igraonica s ponešto proširenim sadržajem su ponovljeni. Za roditelje je pripremljen nov Bilten.

Pregledom djece pri upisu u prvi razred osnovne škole utvrđeno je da samo 26,5% pregledane djece ima zdrave sve mliječne zube, i 76,2% djece ima zdrave sve trajne zube.

Rezultati pregleda pri upisu u prvi razred potvrđuju da je potrebno provoditi stomatološki zdravstveni odgoj, a na taj način zdravstveno-odgojnim porukama obuhvaćena su ne samo djeca već i nastavno osoblje, medicinske sestre i roditelji. Loše stanje oralnoga zdravlja utvrđeno pri pregledu za upis u prvi razred te zanimanje s kojim su program prihvatili svi sudionici potvrđuje da ga je potrebno i dalje provoditi.

## Caries Prevention in First Grade Schoolchildren in Zagreb

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Contemporary studies have shown that oral health education is more effective when it is prevention-oriented rather than disease oriented. The implemented program aimed at including all first grade aged children and making them familiar with the basics of oral health protection through the educational program.

The program included 7.000 first grade aged children in primary schools in Zagreb. During the compulsory check-up required for enrolment in school, their dentist established the oral health status on a unified printed form. In the first school days, a nurse, previously additionally educated in oral health prevention, gave an oral health education lecture, and immediately after the lecture the children participated in a children's workshop by colouring the colouring books. Parent's involvement was achieved through colouring books and a special bulletin prepared and sent to them. Two months later, the lecture and the workshop with a slightly extended program were repeated. A new bulletin was prepared for the parents. The check-up of children for establishing their eligibility for enrolment in the first grade showed that only 26.5% of the children had caries-free primary teeth and 76.2% of the children had caries-free secondary teeth.

The results obtained at such oral health check-ups speak for the need to implement oral health education, and

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 dentobakterijskoga 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.