

International publications of authors from Bosnia and Herzegovina in Current Contents indexed publications in the second half of 2012*

Alagić-Smailbegović J, Kučukalić-Selimović E, Šetić I, Bećirović M, Begović L. Importance of measurement of thyroglobulin and anti-thyroglobulin antibodies in differentiated thyroid cancer. Coll Antropol. 2012 Nov;36 Suppl 2:33-8.

Clinical Center University of Sarajevo, Clinic of Otorhinolaryngology, Sarajevo, Bosnia and Herzegovina.

Differentiated thyroid cancers include papillary and follicular carcinomas, both originating from follicular epithelium. Treatment of choice is usually total or near total thyroidectomy, followed by ablative radioiodine ¹³¹I treatment, and by the long-term administration of thyroid hormone. Despite its excellent prognosis, recurrent disease does occur in approximately 20-40% of patients. Guidelines for the follow-up management of differentiated thyroid cancer are commonly based on circulating thyroglobulin measurement in the complete absence of eutopic thyroid tissue. A retrospective review was conducted on 116 patients (66 papillary and 50 follicular carcinoma, mean age 51.2 years) who had undergone total or near total thyroidectomy and radioactive iodine remnant ablation. Serum thyroglobulin (Tg) and anti-thyroglobulin antibodies (TgAb) levels were measured preoperatively, 1 month after thyroidectomy (before ¹³¹I treatment) and 6 and 12 months after ablation therapy (Tg1, TgAb1 and Tg2, TgAb2, respectively). During one year of follow-up, in a total of 24 patients (21%) recurrent disease were confirmed by ultrasonography and whole-body-scanning, mostly. It was found significant correlation

between serum Tg levels (measured preoperatively and postoperatively) and recurrent diseases ($p < 0.05$), while serum TgAb levels did not have any statistical significance. However, in multivariate regression analysis only Tg levels measured 12 months after the therapy (Tg2) remained a significant predictor of recurrent disease ($p = 0.008$). Although a high Tg level before surgery does not indicate that tumor is present, in the postoperative period and after ablative therapy Tg has proven predictive value because stimulated Tg levels above 10 ng/ml confirmed that indicate residual or recurrent cancer, and its periodically measurements is recommended.

Bišćević M, Bišćević S, Ljuca F, Smrke BU, Kapur E, Tezer M, Smrke D. Clinical and radiological morphometry of posterior parts of thoracic and lumbal vertebrae. Coll Antropol. 2012 Dec;36(4):1313-7.

University of Sarajevo, Sarajevo Clinical Center, Department of Orthopedics and Traumatology, Sarajevo, Bosnia and Herzegovina.

The aim of this work is to measure clinically important dimensions of thoracic and lumbal vertebrae. Charts of one-hundred and seventeen patients with implanted internal fixateur on the thoracic and lumbal spine between 01.01. 2008. and 31.3.2010. at the Department for Orthopedics and Traumatology, of the Sarajevo Clinical center were retrieved, and only 14 patients, with 46 vertebrae and 89 pedicles have had complete documentation (clearly visible measured

*Data for this survey were collected from PubMed database using the keywords Bosnia and Herzegovina and 2012.

structures on X-ray and CT scans). Digitalized antero-posterior and latero-lateral X-ray, and transversal and sagittal CT scans were basic inputs for measurement of height and width of the pedicle--PH, PW, axial and vertical cortico-cortical transpedicular distances--AL, VL, and interpedicular distance--IP. The correction of enlargement on X-ray pictures was performed according to known dimensions of implants and length scale on CT scans. Enlargement of those parameters, from T1 to L5 level was from 50 to 150%. This increasing was not always linear, sometimes there was even decreasing. For instance, the IP on second and third thoracic vertebra was shorter compared to the first thoracic vertebra. Pedicles from the third to the eighth thoracic vertebra were narrower compared to the second thoracic vertebra. The importance of this work is in to analyze the mentioned dimensions by methods available to the clinician. Every other in vivo measurement is impossible because of the excessive surgical approach, while preoperative CT scanning with a great number of slices per one millimeter for this purpose is not ethical.

Bjelanović V, Babić D, Orešković S, Tomić V, Martinac M, Juras J. Pathological pregnancy and psychological symptoms in women. Coll Antropol. 2012 Sep;36(3):847-52.

Mostar University Hospital Centre, Department of Gynecology and Obstetrics, Mostar, Bosnia and Herzegovina.

Pregnancy is followed by many physiologic, organic and psychological changes and disorders, which can become more serious in pregnancy followed by complications, especially in women with pathological conditions during pregnancy. The purpose of this study was to find out and analyze the prevalence and intensity of psychological disorders in women with pathological conditions during pregnancy and compare it with conditions in pregnant women who had normal development of pregnancy. The research is approved by the Ethical committee of the Mostar University Hospital Center, and it was made in accordance with Helsinki declaration and good clinical practices. The research conducted section for pathology of pregnancy of Department for gynecology and obstetrics of the Mostar University Hospital Center. It included 82 pregnant women with disorders in pregnancy development and control group consisted of pregnant women who had normal development of pregnancy. The research work was conducted from September 2007 to August 2008 in Mostar University Hospital Center. Pregnant women had Standard and laboratory tests, Ultrasound. CTG examinations were done for all pregnant women and additional tests for those women with complications during pregnancy. Pregnant wom-

en completed sociobiographical, obstetrical-clinical and psychological SCL 90-R questionnaire. Pregnant women with pathological pregnancy exhibited significantly more psychological symptoms in comparison to pregnant women with normal pregnancy ($p < 0.001$ to $p = 0.004$). Frequency and intensity of psychical symptoms and disorders statistically are more characteristic in pathological pregnancy (61%/40.6%). The statistical data indicate a significantly higher score of psychological disorders in those pregnant women with primary school education ($p = 0.050$), those who take more than 60% carbohydrates ($p = 0.001$), those with pathological CTG records ($p < 0.001$), those with pathological ultrasound results ($p < 0.001$ to 0.216) and those pregnant women with medium obesity and obesity ($p = 0.046$). Body mass index (BMI) during normal pregnancy development is lower ($p = 0.002$) but the levels of glucose, triglycerides, cholesterol, HDL and LDL in blood are higher Blood pressure in pregnant women with pathological pregnancy was statistically significantly higher ($p < 0.001$). Diagnostic criteria for the metabolic syndrome were found in 19 pregnant women with the pathological pregnancy. Statistically, in those women, a significantly higher appearance of psychological symptoms and disorders was observed in comparison to the pregnant women without metabolic syndrome ($p < 0.001$). The research has shown that 87.8% from all pregnant women included in this study have been hospitalized due to premature birth, hypertensive disorders, and diabetes in pregnancy, and also due to bleeding in the second and third trimester of pregnancy.

Busuladžić M, Hasović E, Becker W, Milošević DB. Application of the dressed-bound-state molecular strong-field approximation to above-threshold ionization of heteronuclear molecules: NO vs. CO. J Chem Phys. 2012 Oct 7;137(13):134307. doi: 10.1063/1.4757255.

Medical Faculty, University of Sarajevo, Čekaluša 90, Sarajevo, Bosnia and Herzegovina.

We theoretically investigate high-order above-threshold ionization (HATI) of heteronuclear diatomic molecules applying the molecular strong-field approximation which includes dressing of the molecular bound state. We consider HATI of nitrogen monoxide molecules, which are characterized by the π symmetry of their highest occupied molecular orbital. We show that the HATI spectra of NO exhibit characteristic interference structures. We analyze the differences and similarities of the HATI spectra of NO molecules and the spectra of CO (σ symmetry) and O(2) ($\pi(g)$ symmetry) molecules. The symmetry properties of the molecular HATI spectra governed by linearly and elliptically polarized fields are considered in detail. The

yields of high-energy electrons, contributing to the plateau region of the photoelectron spectra, strongly depend on the employed ellipticity.

Čavar S, Vidic D, Maksimović M. Volatile constituents, phenolic compounds, and antioxidant activity of *Calamintha glandulosa* (Req.) Benth. J Sci Food Agric. 2013 May;93(7):1758-64. doi: 10.1002/jsfa.5967. Epub 2012 Nov 26.

University of Sarajevo, Faculty of Science, Department of Chemistry, Zmaja od Bosne 33-35, Sarajevo, Bosnia and Herzegovina.

BACKGROUND: *Calamintha glandulosa* (Req.) Benth. is an aromatic perennial plant belonging to the family Lamiaceae, mostly found on rocky pastures, dry meadows, and abandoned places of the Mediterranean area. Plants belonging to this genus are known as highly aromatic and to possess significant antimicrobial and antifungal properties. The aim of this study was to provide clear picture of the volatiles of this plant species, and, for the first time, to present *C. glandulosa* from Croatia in terms of its antioxidant activity. **RESULTS:** The essential oil and headspace obtained from odorous parts of *C. glandulosa* were subjected to capillary gas chromatography-mass spectrometry analysis. More than 50 volatile compounds were identified in six samples obtained using different extraction techniques. The most abundant components in all the samples examined were oxygenated monoterpenes, with piperitone (19.9-59.5%) and piperitenone (7.1-42.6%) as the main representatives. The total phenolic content of extracts obtained by successive Soxhlet extraction was measured, and the scavenging potency of the samples, indicated as IC₅₀ values, were examined using four different spectrophotometric and spectrofluorimetric methods. In all cases the essential oil showed the lowest antioxidant activity, while the aqueous extract showed the highest. This can be explained by the levels of the phenolic compounds in the samples examined. **CONCLUSIONS:** A clear picture of aroma profile of *C. glandulosa* is presented, and the results obtained differ from those published previously. The high antioxidant potential of *C. glandulosa* from Croatia was established for the first time. Results from the present study suggest further analysis on this plant species in order to define its medicinal properties.

Erić J, Stančić I, Tiháček-Šojić L, Kulić L, Popovac A, Tsakos G. Prevalence, severity, and clinical determinants of oral impacts in older people in Bosnia and Herzegovina. Eur J Oral Sci. 2012 Oct;120(5):438-43. doi: 10.1111/j.1600-0722.2012.00994.x. Epub 2012 Aug 24.

Department of Prosthodontics, Faculty of Medicine, University of East Sarajevo, Foča, Bosnia and Herzegovina.

This study aimed to assess the prevalence and the severity of oral impacts and the relationships between oral health-related quality of life (OHRQoL) and clinical measures of oral function in a sample of older adults in Bosnia. The sample comprised 261 community-dwelling adults of ≥65 yr of age. Participants were randomly drawn from three senior day-centres for elderly people. Data were collected using clinical examination and a questionnaire. The OHRQoL was assessed through the Oral Impacts on Daily Performances (OIDP) measure, in terms of the prevalence, intensity, and extent of oral impacts. Overall, 55.2% reported at least one oral impact in the last 6 months. Difficulty eating (43.3%) and difficulty speaking (34.1%) were the most common impacts. These were also the most severely affected performances, while 'going out' and 'enjoying the contact of other people' were the least severe. A higher number of natural teeth, natural occluding pairs, and anterior and posterior occluding pairs were all significantly associated with a lower prevalence of oral impacts and correlated with the OIDP score, even after adjusting for sociodemographic factors. The prevalence of oral impacts was high and there was a strong and consistent association between OHRQoL and clinical dental indicators of function.

Fočo F, Bilalović N, Vranić S, Serdarević F, Ramović I, Imamović E. Peritumoral p53 expression in oral carcinoma. Coll Antropol. 2012 Nov;36 Suppl 2:129-32.

Clinical Center of the University of Sarajevo, Department of Maxillofacial Surgery, Sarajevo, Bosnia and Herzegovina.

p53 is one of the most frequently mutated genes in human tumors including head and neck tumors like oral squamous cell carcinoma. It might be responsible for more than 50% of all relapses in patients with surgically treated oral carcinoma and clean margins. The aim of the present study was to explore p53 protein expression in peritumoral tissue and correlate it with relapse of the disease. The study included 25 patients (17 males and 8 females) with oral squamous cell carcinoma in the period August 2006 till August 2008. For immunohistochemical assay, a monoclonal antibody against p53 protein was applied (clone DO-7, DAKO Glostrup, Denmark). Peritumoral expression of p53 was as follows: 10 out of 25 cases (40%) were negative, 2 cases (8%) showed weak, 5 cases (20%) moderate and 8 cases (32%) strong p53 positivity. No significant correlation between peritumoral expres-

sion of p53 protein and patient's relapse was found. In contrast, we found a trend toward association between intratumoral p53 expression and patient's relapse ($p = 0.07$). There was also trend toward higher peritumoral p53 expression in females comparing with p53 expression in males (52.9% of males did not have p53 expression while 87.5% females had mild, moderate or high p53 expression, $p = 0.088$). Peritumoral expression of p53 protein is frequently seen in oral squamous cell carcinoma and merits further research.

Hasanović M, Pajević I. Religious Moral Beliefs Inversely Related to Trauma Experiences Severity and Depression Severity among War Veterans in Bosnia and Herzegovina. J Relig Health. 2012 Sep 1. [Epub ahead of print]

Department of Psychiatry, University Clinical Center Tuzla, Rate Dugonjića bb, Tuzla, Bosnia and Herzegovina.

The aim of this study is to determine the association of religious moral beliefs and depression severity of war veterans in Bosnia and Herzegovina. The sample consists of male war veterans who were inpatients with clinically presented depression and those who were observed as healthy, regarding results of previous psychological testing ($n = 65$ both). The Bosnia-Herzegovina versions of Hopkins Symptom Checklist and Harvard Trauma Questionnaire with questionnaire for religious moral beliefs were applied. The religious moral belief index was inversely correlated to depression severity. The religious moral beliefs may help protection of the war veterans' mental health stability after surviving multiple war traumas.

Hasukić ŠI, Iljazović ES, Odošić AH, Matović EA. A rare case of primary rectal adenocarcinoma metastatic to the breast. Saudi Med J. 2012 Sep;33(9):1014-7.

Department of Surgery, Polyclinic for Laboratory Diagnostics, University Clinical Center Tuzla, Faculty of Medicine, University of Tuzla, Tuzla, Bosnia and Herzegovina.

Primary rectal adenocarcinoma metastatic to the breast is an exceedingly rare event. Its management differs from that of primary breast cancer, as illustrated by this case. A 63-year-old woman presented with a breast lump 30 months after abdominoperineal resection for rectal adenocarcinoma, stage $T_3N_1M_0$ (stage III), followed by standard postoperative radiochemotherapy. The patient underwent a mammography and ultrasonography. A CT scan of the abdomen showed metastatic disease. An excisional biopsy of the breast lump was performed; morphological features were

identical to the original rectal cancer. Immunohistochemical results were negative for estrogen and progesterone receptors and gross cystic disease fluid protein-15, and intensity positive for cytokeratin 20 and carcinoembryonic antigen. The patient died after treatment with palliative chemotherapy. Metastatic disease from rectal carcinoma to the breast is a marker for disseminated metastatic spread with poor prognosis.

Hudić I, Bujold E, Fatušić Z, Skokić F, Latifagić A, Kapidžić M, Fatušić J. The Misgav-Ladach method of cesarean section: a step forward in operative technique in obstetrics. Arch Gynecol Obstet. 2012 Nov;286(5):1141-6. doi: 10.1007/s00404-012-2448-6. Epub 2012 Jul 3.

Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Trnovac bb, Tuzla, Bosnia and Herzegovina.

OBJECTIVE: The objective of this study is to compare the intraoperative and short-term outcomes of two cesarean techniques: the modified Misgav-Ladach and the Pfannenstiel-Kerr.

METHODS: We performed a prospective observational cohort study of women undergoing a primary cesarean at the Clinic for Obstetric and Gynecology Tuzla, Bosnia and Herzegovina, between January 2003 and December 2011. The two cesarean techniques were compared for intraoperative and short terms outcomes. **RESULTS:** A total of 4,944 women were included in this study, 4,336 allocated to the modified Misgav-Ladach and 608 to the Pfannenstiel-Kerr techniques. The rate of modified Misgav-Ladach increased from 74 % in 2003 to 99 % in 2011. The modified Misgav-Ladach technique was associated with a shorter operative time ($13.3 \text{ min} \pm 7.4$ vs. $19.1 \text{ min} \pm 6.8$, $p < 0.05$), as well as significantly less surgical material (3.5 ± 2.5 vs. 7.9 ± 2.1 , $p < 0.05$). The modified Misgav-Ladach technique was also associated with lower analgesic requirements, lower rates of febrile morbidity and wound infection compared to the Pfannenstiel-Kerr technique ($p < 0.05$). No significant differences were observed in the incidence of endometritis, wound dehiscence, bowel restitution, postoperative antibiotic use, and hospital stay. **CONCLUSION:** The modified Misgav-Ladach technique is associated with a shorter operative time than Pfannenstiel-Kerr and might lead to better postoperative outcomes.

Kučukalić-Selimović E, Alagić J, Valjevac A, Hadžović-Džuvo A, Begić A, Bešlić N. The value of serum thyroglobulin levels and whole body (I-131) scintigraphy in the follow-up of the thyroid cancer patients after thyroidectomy. Coll Antropol. 2012 Nov;36 Suppl 2:67-71.

Clinical Center University of Sarajevo, Clinic for Nuclear Medicine, Sarajevo, Bosnia and Herzegovina.

Serum thyroglobulin (Tg) and whole body scintigraphy (I-131 WBS) have been used to detect recurrent and metastatic thyroid cancers postoperatively. However, discordant results of Tg measurement and 131I WBS have been reported. Negative 131I WBS and a positive Tg test are usually found, but less common occurrence of positive 131I WBS and a negative Tg test has also been demonstrated in a small but significant number of cases. Therefore, the aim of the study was to retrospectively analyse patients with positive 131I WBS after total thyroidectomy and again 1 year after the radioactive iodine. There were 52 patients included in the study. Four weeks after surgery, during which thyroid hormone treatment was not introduced, each patient received an ablative dose of 131I. The evaluation of the WBS was qualitative and considered positive if thyroid remnant, lymphatic node or metastasis were detected. WBS and serum Tg was measured 12 months after 131I ablation with thyroid hormone suppression. We considered positive any Tg level above the sensitivity values and negative if lower than this level. Tg levels were related to the existence of a positive scan or a negative one. In our 52 WBS positive patients concordant positive Tg levels were observed in 42 patients while in 10 patients we found a negative Tg levels after the surgery. After 1-year follow-up, out of initially 42 concordant patients 8 patients showed remaining concordant positive Tg and WBS values. Discordant results were observed in 13 patients (4 patients were Tg- and WBS+ while 9 patients were Tg+ and WBS-). In the majority of patients (50%) remained with concordant results but changed from Tg+ and WBS+ to Tg- and WBS-. Diagnostic WBS is an additional valuable tool, besides Tg levels, in the follow up of patients after total thyroidectomy.

Kukavica BM, Veljović-Jovanović SD, Menckhoff L, Lüthje S. Cell wall-bound cationic and anionic class III isoperoxidases of pea root: biochemical characterization and function in root growth. J Exp Bot. 2012 Jul;63(12):4631-45. doi: 10.1093/jxb/ers139. Epub 2012 Jul 3.

University of Banja Luka, Faculty of Science and Mathematics Mladena Stojanović 2, Banja Luka, Bosnia and Herzegovina.

Cell wall isolated from pea roots was used to separate and characterize two fractions possessing class III peroxidase activity: (i) ionically bound proteins and (ii) covalently bound proteins. Modified SDS-PAGE separated peroxidase isoforms by their apparent molecular weights: four bands of 56, 46, 44, and 41kDa were found in the ionically bound fraction (iPOD)

and one band (70kDa) was resolved after treatment of the cell wall with cellulase and pectinase (cPOD). Isoelectric focusing (IEF) patterns for iPODs and cPODs were significantly different: five iPODs with highly cationic pI (9.5-9.2) were detected, whereas the nine cPODs were anionic with pI values between pH 3.7 and 5. iPODs and cPODs showed rather specific substrate affinity and different sensitivity to inhibitors, heat, and deglycosylation treatments. Peroxidase and oxidase activities and their IEF patterns for both fractions were determined in different zones along the root and in roots of different ages. New iPODs with pI 9.34 and 9.5 were induced with root growth, while the activity of cPODs was more related to the formation of the cell wall in non-elongating tissue. Treatment with auxin that inhibits root growth led to suppression of iPOD and induction of cPOD. A similar effect was obtained with the widely used elicitor, chitosan, which also induced cPODs with pI 5.3 and 5.7, which may be specifically related to pathogen defence. The differences reported here between biochemical properties of cPOD and iPOD and their differential induction during development and under specific treatments implicate that they are involved in specific and different physiological processes.

Maksimović A, Maksimović Z, Filipović S, Beširović H, Rifatbegović M. Vaginal and uterine bacteria of healthy bitches during different stages of their reproductive cycle. Vet Rec. 2012 Oct 13;171(15):375. doi: 10.1136/vr.100886. Epub 2012 Aug 17.

Department of Surgery, Veterinary Faculty, Zmaja od Bosne 90, Sarajevo, Bosnia and Herzegovina.

No abstract available.

Mandić A, Tomić M, Petrov B, Romić Z. Atrial fibrillation, atrioventricular blocks and bundle branch blocks in hemodialysis patients. Coll Antropol. 2012 Dec;36(4):1395-9.

Health Center Široki Brijeg, Široki Brijeg, Bosnia and Herzegovina.

Atrial fibrillation is one of the most frequent arrhythmias diagnosed in clinical practice and it is also relatively common in dialysis patients. Atrioventricular and intraventricular conduction disturbances are less investigated in hemodialysis patients and data about their prevalence are insufficient. The objective of this study was to determine the prevalence of atrial fibrillation, atrioventricular blocks and bundle branch blocks in hemodialysis patients and to analyze different clinical risk factors. The study included 140 patients on long-term hemodialysis treatment. The pres-

ence of atrial fibrillation, atrioventricular blocks and bundle branch blocks was determined by electrocardiogram. Patients were divided into groups depending on the presence or absence of atrial fibrillation/ bundle branch blocks and investigated variables were compared. Atrial fibrillation was present in 11 (7.9%) of the 140 patients. In multivariate analysis, age and higher concentration of uric acid were associated with atrial fibrillation. Prevalence of first-degree atrioventricular block was 2.9% (4 patients) and second- and third-degree atrioventricular blocks were not found. Prevalence of bundle branch blocks was 17.1% (24 patients): 5% of patients had a complete right bundle branch block, 6.4% had an incomplete right bundle branch block, 3.6% had a complete left bundle branch block and 2.1% of patients had an incomplete left bundle branch block. The prevalence of atrial fibrillation and bundle branch blocks in this study was relatively high in patients on hemodialysis and greater than that observed in general population. Presence of atrial fibrillation was associated with older age and higher concentration of uric acid.

Marković-Peković V, Škrbić R, Godman B, Gustafsson LL. Ongoing initiatives in the Republic of Srpska to enhance prescribing efficiency: influence and future directions. Expert Rev Pharmacoecon Outcomes Res. 2012 Oct;12(5):661-71. doi: 10.1586/erp.12.48.

Faculty of Medicine, University of Banja Luka, Banja Luka, Republic of Srpska, Bosnia and Herzegovina.

BACKGROUND: Multiple reforms have been introduced in the Republic of Srpska to enhance prescribing efficiency. **OBJECTIVES:** First, assess their influence on utilization and expenditure on proton-pump inhibitors, statins and renin-angiotensin inhibitor drugs. Second, assess whether the Republic can obtain low prices for generics. Third, suggest additional reforms that could be introduced. **METHODS:** Observational study of all ambulatory care patients between 2003 and 2010. Defined daily doses (DDD) and DDDs per 1000 inhabitants per day used for measuring changes in utilization. Reimbursed expenditure used as health insurance perspective. **RESULTS:** Increasing utilization in all three classes. Utilization of angiotensin-receptor blockers principally limited by prescribing restrictions. Reimbursed expenditure/DDD in all three classes decreased by up to 82% in 2010 versus 2004, appreciably improving prescribing efficiency for the statins. Increased utilization of esomeprazole at higher reimbursed expenditure/DDD, and similarly angiotensin-converting enzyme-inhibitor combinations at higher expenditure versus single drugs, limited the ability to fully capitalise on these reductions. **CONCLUSION:** Multiple measures

helped lower expenditure/ DDD, providing hope to countries with small populations. Additional measures are planned to further improve prescribing efficiency in the Republic of Srpska.

Memišević H, Sinanović O. Predictors of visual-motor integration in children with intellectual disability. Int J Rehabil Res. 2012 Dec;35(4):372-4. doi: 10.1097/MRR.0b013e32835a23d0.

Center for Education and Rehabilitation of Children with Intellectual Disability, Sarajevo, Bosnia and Herzegovina.

The aim of this study was to assess the influence of sex, age, level and etiology of intellectual disability on visual-motor integration in children with intellectual disability. The sample consisted of 90 children with intellectual disability between 7 and 15 years of age. Visual-motor integration was measured using the Acadia test of visual-motor integration. A multiple regression analysis was used for data analysis. The results of this study showed that sex, level of intellectual disability, and age were significant predictors of visual-motor integration. The etiology of intellectual disability did not play a significant role in predicting visual-motor integration. Visual-motor integration skills are very important for a child's overall level of functioning. Individualized programs for the remediation of visual-motor integration skills should be a part of the curriculum for children with intellectual disability.

Miljko M, Grle M, Kožul S, Kolobarić M, Djak I. Intercondylar notch width and inner angle of lateral femoral condyle as the risk factors for anterior cruciate ligament injury in female handball players in Herzegovina. Coll Antropol. 2012 Mar;36(1):195-200.

Mostar University Hospital, Institute of Radiology, Mostar, Bosnia and Herzegovina.

The principal purpose of this prospective study was to examine intercondylar notch size and the value of inner angle of lateral femoral condyle as the risk factors for noncontact anterior cruciate ligament ACL injury and then to correlate them to the physical values of the athletes such as body mass index (BMI), height, weight, etc. There are identified two type of risk factors, external include shoes-surface interaction, type of playing surface, weather conditions and internal include anatomic, neuromuscular, biomechanical and hormonal factors that may predispose female athletes to noncontact injury of ACL. Among anatomic factors, intercondylar notch stenosis and larger inner angle of lateral condyle of femur as the factors which can cause

impingement of ACL, were related to an increased risk of injury of ACL. In this study were included 51 female athlete. In the study group there were 24 female handball players with ACL tear and in control group there were 27 female handball players without any type of injury of the knee, who are practicing handball on a daily basis for at least for two years. In the first step, were gathered clinical data performed by orthopaedic surgeon. In the second step, the femoral notch width and the inner angle of lateral condyle of femur were measured on coronal MR-images. Study has shown that value of inner angle of lateral condyle of femur was significantly higher in athletes with ACL tear compared to those without. Value of width of intercondylar notch was statistically smaller in athletes with ACL tear, compared to those without. In the conclusion the inner angle of lateral femoral condyle is better predicting factor for ACL tear in young female handball players compared to intercondylar notch width.

Pranjić N, Nuhbegović S, Brekalo-Lazarević S, Kurtić A. Is adrenal exhaustion synonym of syndrome burnout at workplace? Coll Antropol. 2012 Sep;36(3):911-9.

Service of Occupational Health Tuzla in Tuzla Canton, Department of Occupational Pathology and Toxicology, Tuzla, Bosnia and Herzegovina.

The objective of this study is the assessment of the association of burnout syndrome with adrenal exhaustion specific symptoms and signs among 116 patients who were exposed to violence or mobbing at workplace and who were treated during 2005 to 2008 in Department of Occupational Pathology and Toxicology Tuzla; to detect symptoms and signs of adrenal exhaustion differences between patients who were exposed to act of violence as acute catastrophic event and patients who were long-term exposed to mobbing or chronic distress at workplace. MATERIAL AND METHODS: Data of 86 employees who were exposed to mobbing > 1 years (chronic distress syndrome) and data of 30 employees who were exposed to act of violence as acute traumatic crisis situation (evaluation in first week after acute stress situation and post control observation 6 months later). TOOLS FOR ASSESSMENT WERE CLINICAL EXAMINATION AND QUESTIONNAIRES: Occupational stress questionnaire (OSQ short version), self-constructed Questionnaire about symptoms and signs of Adrenal exhaustion; self-constructed mobbing questionnaire; and Maslach--Burnout Inventory. RESULTS: The patients expressed their traumatic experiences during exposure to stress more than 1 year (long-term exposure) which were compared with acute stress experiences (mostly high level of stress intensity. CONCLUSION: when workers constant expose to repeat mobbing

behavior or have perception of extended distress reaction after act of violence at workplace they are suffering of Syndrome burnout and clinical picture of adrenal fatigue.

Prodanović N, Špirić Z, Trninić G, Erić M. Digital clubbing as an unusual complication of the secondary hyperparathyroidism associated with atypical neutrophils: a case report. Eur Rev Med Pharmacol Sci. 2012 Oct;16 Suppl 4:98-102.

Department of Rheumatology and Clinical Immunology, Clinical Center Banja Luka, Republic of Srpska, Bosnia and Herzegovina.

Digital clubbing is a rare clinical finding and usually represents a sign of underlying disease. There are only few cases of digital clubbing in patients with primary hyperparathyroidism or with secondary hyperparathyroidism (SHPT) during long-term hemodialysis. We haven't come across papers dealing with the relation of digital clubbing and SHPT caused by vitamin D deficiency. In this article, we report a case of 43 year-old female patient with prominent clubbing of the fingers and toes, and 22 year history of SHPT caused by vitamin D deficiency. Current radiographic findings of the hands and feet are actually uncommon, and they show massive osteolytic lesions of numerous phalanges, which is the consequence of long-time untreated SHPT. Besides, our patient has a rare case of neutrophils with bilobed nuclei and decreased cytoplasmic granularity. This paper for the first time describes digital clubbing as an unusual complication of the SHPT caused by vitamin D deficiency associated with atypical neutrophils.

Radošević B, Bukara-Radujković G, Miljković V, Pejičić S, Bratina N, Battelino T. The incidence of type 1 diabetes in Republic of Srpska (Bosnia and Herzegovina) and Slovenia in the period 1998-2010. Pediatr Diabetes. 2012 Aug 28. doi: 10.1111/j.1399-5448.2012.00898.x. [Epub ahead of print]

Clinic for Endocrinology, Diabetes and Metabolic diseases, Clinical Centre Banja Luka, and School of Medicine, University of Banja Luka, Banja Luka, Republic of Srpska, Bosnia and Herzegovina.

OBJECTIVE: To establish and compare the incidence and trends of type 1 diabetes mellitus (T1DM) in Republic of Srpska and Slovenia in age group 0-18 yr from 1998 to 2010. METHODS: The subjects (413 newly diagnosed T1DM patients in the Republic of Srpska and 664 in Slovenia) were grouped into the age groups: 0-4, 5-9, 10-14, and 15-18 yr. Confidence intervals (CI) for crude incidence rates were estimated assuming numbers of cases were counts from the

Poisson distribution. Gender and age-specific standardization was done according to the EURODIAB criteria. Statistical analysis used Poisson-regression models to analyze difference rate between countries and to investigate the incidence trend. RESULTS: Case ascertainment was estimated to be 99.95% for the Republic of Srpska and 100% for Slovenia by using the capture-recapture method. The standardized incidence of T1DM for age group 0-18 yr in the Republic of Srpska was 7.5/100 000/yr (95% CI: 6.8-8.3). For the same period and the same age group incidence in Slovenia was 12.5/100 000/yr (95% CI: 11.5-13.5). Annual increase in the incidence in the Republic of Srpska was 2.3% (95% CI: -0.3 to 5.0%), whereas in Slovenia 4.3% (95% CI: 2.2-6.5%). CONCLUSION: The incidence for age group 0-18 yr standardized to the world population is remarkably higher in Slovenia than in the Republic of Srpska. Further follow-up and investigations are needed to explain the high difference in incidence of T1DM between the two geographically related countries.

Ravlija J, Vasilj I. Communication in crisis situations in the process of immunization. Coll Antropol. 2012 Sep;36(3):1069-73.

Public Health Institute of Federation of BIH, Mostar, Bosnia and Herzegovina.

Immunization is one of the most effective medical interventions in the prevention of the disease and represents the easiest and most cost-effective investment in health. The strategy of controlling contagious diseases that can be prevented through immunization has a long tradition in B&H. Mandatory immunizations are administered against ten diseases. Although the development of new technologies, the efforts of the pharmaceutical industry, the development of new vaccines provides better vaccines in terms of greater safety and effectiveness it should be pointed out that no vaccine is "absolutely effective and safe", and it will not achieve the immune response in 100% vaccinated, also there are possible side effects and unexpected reactions that could occur. Vaccination is often a media issue because previously unnoticed local, isolated events-side effects and complications of vaccination are now accompanied by media attention as there are now numerous and fast communication channels (internet, e-mail, TV1 etc.) and media evolved from being less "controlled" to more "commercial". Doubt in benefit of vaccination is growing even among health professionals who are expected to provide up-to-date, understandable information, and issue information about immunization benefits and potential risks. It is therefore important for health professionals to be well informed, to be a good source of authoritative, scientific and reasonable advice, and to speak openly about

the benefits and risks of vaccination so that consumers fully understand both possible outcomes of vaccination. This takes communication skills, particularly in crisis situations connected with vaccination. Health professionals are thus faced with a changing attitude toward importance of immunization in the social climate where risk is less tolerated than ever before.

Salkić A, Brkić F, Čičkušić A, Čičkušić E, Altumbabić H. Thyroid cancer in Tuzla region of Bosnia and Herzegovina: a 10-year study (1999-2008). Coll Antropol. 2012 Nov;36 Suppl 2:53-7.

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Bosnia and Herzegovina (B&H) is one of the Eastern European countries with lacking data on thyroid cancer (TC) epidemiology. We aimed to assess the incidence of TC in Tuzla Canton of B&H during a 10-year period (1999-2008). We retrospectively evaluated 65000 hospital records of both inpatients and outpatients with possible thyroid symptoms residing in Tuzla Canton of B&H (total of 496280 inhabitants) between 1999 and 2008. Patients with histological proof of TC were included in study. Incidence rates were calculated with age standardisation using European standard population. Trends in incidence were evaluated as moving three-year averages. During observed period 117 patients met the diagnostic criteria for TC with male to female ratio of 1:4.85. Median age of all cases was 51 years (interquartile range: 41 to 60) with men in average 9 years older than women at the time of diagnosis. The mean annual standardized incidence was found to be 2.30/10(5) (% 95 CI = 1.38-3.22) inhabitants ranging from 1.0 to 3.2 per 10(5). The average crude incidence in men was 0.82/10(5) and 3.83/10(5) in women. The prevalence of TC, at the end of the observed period was found to be 23.58/10(5) (% 95 CI = 19.3-27.58). There is a slight decline of incidence in our region during the observed period, but with the increase in the latest years of the study. This increase is probably the result of combination of various factors, mainly the better detection of new cases due to wider availability of diagnostics. Based on depicted trends, we believe that in the future years, TC incidence in our region will continue to rise.

Subasi A. Medical decision support system for diagnosis of neuromuscular disorders using DWT and fuzzy support vector machines. Comput Biol Med. 2012 Aug;42(8):806-15. doi: 10.1016/j.combiomed.2012.06.004. Epub 2012 Jul 2.

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The motor unit action potentials (MUAPs) in an electromyographic (EMG) signal provide a significant source of information for the assessment of neuromuscular disorders. In this work, different types of machine learning methods were used to classify EMG signals and compared in relation to their accuracy in classification of EMG signals. The models automatically classify the EMG signals into normal, neurogenic or myopathic. The best averaged performance over 10 runs of randomized cross-validation is also obtained by different classification models. Some conclusions concerning the impacts of features on the EMG signal classification were obtained through analysis of the classification techniques. The comparative analysis suggests that the fuzzy support vector machines (FSVM) modelling is superior to the other machine learning methods in at least three points: slightly higher recognition rate; insensitivity to overtraining; and consistent outputs demonstrating higher reliability. The combined model with discrete wavelet transform (DWT) and FSVM achieves the better performance for internal cross validation (External cross validation) with the area under the receiver operating characteristic (ROC) curve (AUC) and accuracy equal to 0.996 (0.970) and 97.67% (93.5%), respectively. These results show that the proposed model have the potential to obtain a reliable classification of EMG signals, and to assist the clinicians for making a correct diagnosis of neuromuscular disorders.

Šoljić V, Perak RB, Vukojević K, Saraga-Babić M, Bubalo P, Karan D, Todorović J, Batinić D. ZAP-70 expression and proliferative activity in chronic lymphocytic leukemia. *Leuk Lymphoma*. 2012 Nov 19. [Epub ahead of print]

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The expression of 70 kDa protein zeta-associated protein (ZAP-70) in chronic lymphocytic leukemia (CLL) has been used to detect those patients with more aggressive disease. The aim of this study was to determine the proliferative activity of ZAP-70(+) leukemic cells by immunocytochemical methods. The study was undertaken on native blood marrow (BM) and peripheral blood (PB) smears from 65 patients with CLL. ZAP-70 was expressed in leukemic cells of 35 patients (54%). We demonstrated that ZAP-70 immunoreactivity correlated with Rai 0-IV ($p = 0.002$) and Binet A-C stages ($p < 0.001$), total tumor mass (TTM score) ($p < 0.001$), $\beta(2)$ -microglobulin ($p = 0.006$), atypical lymphocytes ($p < 0.001$) and proliferative activity in bone marrow and peripheral blood ($p = 0.014$, $p = 0.002$, respectively) using $\chi(2)$ test and Mann-Whitney test. ZAP-70 protein expression is in direct cor-

relation with the poorer prognostic parameters, which additionally confirms the successful method of detection of ZAP-70 expression. Higher Ki-67 expression in BM and PB smears of patients with ZAP-70(+) disease indicates higher proliferating compartments, which may contribute to poorer prognosis.

Tahirović H, Toromanović A. Adhesion of the labia minora in girls: a common disorder that is rarely considered. *J Pediatr Endocrinol Metab*. 2012;25(7-8):631-2.

Department of Pediatrics, University Clinical Center, Tuzla, Bosnia and Herzegovina.

No abstract available.

Vukojević M, Dizdarević A, Novaković D. Early detection and recognition of children with ADHD (attention deficit hiperactivity disorder) symptoms. *Coll Antropol*. 2012 Dec;36(4):1183-8.

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Aim of this study was to determine the probability of occurrence of Attention Deficit/Hyperactivity Disorder- ADHD in children of preschool age and early school age, and to identify differences in the assessment of children identified with high probability for the disorder with regard to assessment by parents and teachers, and with respect on age and sex of children. Total of 107 children were included in the study: 51 girls and 56 boys. The study employed two questionnaires: Questionnaire for Analysis at School for teachers and Questionnaire for Analysis at Home for parents. Both questionnaires contained 39 statements which covered three dimensions of child's behavior needed for ADHD diagnosis. Raw data in each questionnaire were converted according to the standard norms of Guide to Standard Scores (SS) and Total Standard Scores (TSS) and as such were used for statistical analysis. It was found that a considerable number of children demonstrated high probability for ADHD disorder in assessments done by both parents and teachers. Parents recognize probability of ADHD presence more frequently among male children, while teachers recognize this probability more often among female children. Research shows that a significant percentage of children from the entire sample have been labeled with significant ADHD symptoms. Given the age of the child both parents and teachers recognize similar levels of high ADHD probability. Future studies should be directed toward early detection and recognition of children with ADHD syndrome, and clinical evaluation as a first step toward successful treatment and prevention of additional psychological and other problems in an adult.

Zerem E, Imamović G, Latić F, Mavija Z.
**Prognostic value of acute fluid collections
diagnosed by ultrasound in the early assessment
of severity of acute pancreatitis. J Clin Ultrasound.**
2013 May;41(4):203-9. doi: 10.1002/jcu.21995.
Epub 2012 Sep 18.

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PURPOSE: To evaluate the prognostic value of acute fluid collections (AFC) diagnosed by conventional transabdominal ultrasound in the early assessment of severity acute pancreatitis (AP). **METHODS:** We studied 128 consecutive patients with AP between March 2006 and March 2011. The predictor was the number of AFC. Outcome measure was the occurrence of complications. Abdominal sonogram, contrast-enhanced CT, and pancreatitis-specific clinical and laboratory findings were performed. **RESULTS:** AFC were associated with complications ($p < 0.0001$), Balthazar grade ($p = 0.004$), Ranson score ($p < 0.0001$), and the majority of clinical, radiologic, and biochemical parameters for predicting complications of AP ($p < 0.05$). Univariate logistic regression also revealed significant association between the number of AFC and the occurrence of complications (OR 4.4; 95% CI 2.5-7.6). After the adjustment for covariates, AFC remained prognostic for complications and a cutoff point of >1 AFC was prognostic of their occurrence with 88% sensitivity and 82% specificity. **CONCLUSIONS:** AFC are related to the clinical course of AP and can predict its severity.

Zulčić-Nakić V, Pajević I, Hasanović M, Pavlović S, Ljuca D.
**Psychological problems sequale in
adolescents after artificial abortion. J Pediatr
Adolesc Gynecol. 2012 Aug;25(4):241-7. doi:
10.1016/j.jpag.2011.12.072.**

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STUDY AND OBJECTIVES: Controversy exists over psychological risks associated with unwanted pregnancy and consecutive abortion. The aim of this study was to assess the psychological health of female ado-

lescents following artificial abortion up to 12(th) week of pregnancy. **DESIGN:** The control case study. **SETTING:** The study was carried out in the Department of Gynecology and Obstetrics, University Clinical Center Tuzla, in Bosnia-Herzegovina. **PARTICIPANTS:** We assessed 120 female adolescents. The mean (SD) age of the patients was 17.7 (1.5) years experiencing sexual intercourse in the age of 14-19 years for trauma experiences, presence of posttraumatic stress symptoms, depression and anxiety as state, and anxiety as trait. Sixty adolescents had intentional artificial abortion and 60 had sexual intercourse but did not become pregnant. **MAIN OUTCOME MEASURES:** We used the PTSD Questionnaire, the Beck Depression Inventory, and the Spielberger State Trait Anxiety Inventory (Form Y) for assessment of anxiety in adolescents. Basic socio-demographic data were also collected. **RESULTS:** PTSD presented significantly more often in adolescents who aborted pregnancy (30%), than in adolescents who did not abort (13.3%) (odds ratio = 4.91 (95%CI 0.142-0.907) $P = 0.03$). Anxiety as state and as trait were significantly higher in the abortion group, as the mean (SD) anxiety score of patients was 59.8 (8.9), 57.9 (9.7) respectively, than in non-abortion group 49.5 (8.8), 47.3 (9.9) respectively ($t = 6.392$, $P < 0.001$; $t = 5.914$, $P < 0.001$, respectively). Adolescents who aborted pregnancy had significantly higher depression symptoms severity 29.2 (5.6) than controls 15.2 (3.3) ($t = 8.322$, $P < 0.001$), and they presented significantly more often depression (75%), than adolescents who did not abort (10%) ($\chi^2(2) = 53.279$, $P < 0.001$). Logistic regression showed that only experience of life threatening(s) and injury of other person(s) reliably predicted PTSD, whereas abortion and experience of life threatening(s) reliably predicted depression. **CONCLUSION:** Adolescents who aborted pregnancy presented significantly greater prevalence of PTSD and depression, and significantly greater depression severity and anxiety as state and trait than those who did not abort. Abortion predicted depression only, and did not predict PTSD.

by Nerma Tanović