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Artigos Publicados

Abstracts

Article Title: Vibrations in the Temporomandibular Joints in Patients Examined and Treated in a Private Clinic.

The Journal of Craniomandibular Practice Journal Date: July 1993

Authors: Guiovaldo Paiva, D.D.S.; Priscila Faria Paiva, D.D.S.; Odilon Nunes de Oliveira, D.D.S. Volume: 11 Issue: 3.

Abstract: Patients indicated for examination, evaluation and treatment of the temporomandibular joint (TMJ) in the Centro de Diagnóstico e Tratamento da ATM (CDTATM) were submitted to computerized BioPAK systems tests.* Special attention was placed on the SonoPAK test (electrovibratography), seeking to evaluate the articular sound problem in differentiated patients for specific TMJ treatment. The percentage of sounds (148 joints, 74 patients) was high (75.67% in the opening movement and 50.00% in the closing movement) which suggests the necessity to give more attention to the TMJ sounds during a clinical examination. And also, if possible, give more attention to the utilization of specific tests to obtain a clear definition of the type of sound the patients presents.

Article Title: Joint Vibrations Analysis in Asymptomatic Volunteers and Symptomatic Patients. The Journal of Craniomandibular Practice Journal Date: July 1999

Article ID: 146

Authors: Karina Andrea Novaes Olivieri, D.D.S.; Alcicio Rosalino Garcia, Ph.D.; Guiovaldo Paiva, D.D.S.; Christopher Stevens, D.D.S. Volume: 17 Issue: 3

Abstract: The joint sound is a common sign in TMD. The diagnosis is important to establish the treatment of pathological alterations which occur in the TMJ. In this study, two groups were selected: 1. Asymptomatic volunteers; and 2. Symptomatic patients who were diagnosed in a clinical examination. After the initial examination, they were submitted to evaluation using electrovibratography (SonoPAK II, BioResearch Assoc., Inc., Milwaukee, Wisconsin). The analysis of results indicated that the averages of the vibratory energy in the symptomatic group presented higher values in all stages of the mandibular movement when compared to the averages of vibratory energy registered in the asymptomatic group.



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Article Title: Joint Vibration Analysis in Patients with Articular Inflammation The Journal of Craniomandibular Practice Journal Date: October 2000

Authors: Alicia Rosalino Garcia, Ph.D.; Miguel Carlos Madeira, Ph.D.; Guiovaldo Paiva, D.D.S.; Karina Andrea Novaes Olivieri, D.D.S Volume: 18 Issue: 4

Abstract: The study of articular sounds using a computerized system (SonoPAK) in patients with temporomandibular disorders (TMD) of inflammatory origin revealed an increase of vibratory energy when compared to asymptomatic individuals. The following conclusions were reached: 1. The amount of vibratory energy registered in these patients ranged from 8.50 to 57.61 Hz. The major vibrations occurred in the middle of the mandibular opening cycle; 2. The mean vibratory energy measured at less than 300 Hz was between 5.70 and 48.64 Hz and at higher than 300 Hz was between 3.70 and 8.99 Hz; 3. The peak amplitude in the patients with inflammation ranged from 0.35 to 3.96 Pascal and the peak of frequency from 83.20 to 120.20 Hz.

Título do Artigo: Análise das Vibrações nas ATMs em Movimentos Mandibulares Verticais e Horizontais em Pacientes com DTM

Autores: Guiovaldo Paiva, Alicia R. Garcia, Paulo Renato Junqueira Zuím, Mário Kaissar Nasr. **Volume: 1 Número: 3 Jornal Brasileiro de Oclusão, ATM & Dor Orofacial Data: Jul/Set 2001**

Resumo: Sessenta e três pacientes que procuraram o centro de Diagnóstico e Tratamento da ATM, clínica particular na cidade de São Paulo, SP, foram submetidos a exames através da anamnese, exame clínico e análise das vibrações nas ATMs em movimentos verticais e horizontais (lateralidade direita e esquerda), através do sistema computadorizado SonoPAK (BioRESEARCH, Inc., Milwaukee, WI, USA). Os resultados indicaram que as vibrações registradas no ciclo de abertura mandibular são estatisticamente diferentes quando comparadas ao fechamento, lateralidade direita e esquerda. Não existem diferenças estatísticas significantes entre as vibrações analisadas nos movimentos de lateralidade direita e esquerda.

Título do Artigo: Preparo com Laser de ER:YAG de Lesões Dentais Cervicais Causadas por Abfração, Abrasão e/ou Erosão.

Autores: Guiovaldo Paiva, Luiz de Jesus Nunes, Walter J. Genovese, Mário Kaissar Nasr, Priscila Faria Paiva e Alexandra Faria Paiva. Volume: 2 Número: 5 **Jornal Brasileiro e Dentística Estética Data: Jan/Mar 2003**

Resumo: Foram selecionados 3 casos clínicos de pacientes portadores de lesões cervicais, representando respectivamente lesões classificadas como abfração, abrasão e/ou erosão. O preparo das lesões foi efetuado com laser de ER:YAG (Kavo Key Laser 2), forramento dentinário com ionômero de vidro (Vitrebond, 3M) e restaurados com resina composta Filtek Z 250 (3M ESPE). O paciente portador de lesão cervical tipo abfração foi o único a necessitar de anestesia. O diagnóstico e classificação das lesões cervicais, exceção do tipo abfração em jovens, é difícil. É indispensável a análise oclusal de pacientes portadores de lesões cervicais. A utilização do laser de ER:YAG mostrou-se extremamente eficaz na conservação de tecido dental.



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Article Title: Mandibular Movement Patterns During Speech in Subjects with Temporomandibular Disorders and in Asymptomatic Individuals. CRANIO, Volume 26 Issue 1 January 2008

Authors: Esther M. G. Bianchini, Ph.D.; Guiovaldo Paiva, D.D.S.; Cláudia R. F. de Andrade, Ph.D.

Abstract: The mandibular movements used during speech modify space to allow different articulation postures proper for each sound. Temporomandibular disorders (TMD) may cause modifications in these movements due to joint and muscular conditions. The aim of this study was to verify the amplitude and the characterization of the mandibular movements during speech, using computerized electrognathography, in individuals with TMD and in asymptomatic individuals, analyzing possible interferences of these dysfunctions. One hundred thirty-five (135) adult subjects were divided into two groups: GI with 90 participants diagnosed with TMD and GII with 45 asymptomatic participants. Their mandibular movements were observed during the sequential naming of pictures containing all of the word sounds, which occur in the Brazilian Portuguese language. The records were obtained with computerized electrognathography (BioEGN – BioPak system, BioResearch Associates, Inc., Milwaukee, WI). Mean values of the amplitude were described for the two groups. The analysis of such results showed statistically significant differences between the means of the values, obtained for the two groups in the opening and retrusion ranges. Statistically significant differences were not established for the presence and the range of the deviations in laterality, during speech. Prevalence of bilateral deviations was verified in GII and unilateral deviations in GI. This study describes the 3-dimensional thresholds of mandibular movements in speech for Brazilian Portuguese, for the investigated individuals of both groups. The presence of TMD shows reduction in mandibular opening and retrusion ranges and prevalence of unilateral deviation movements during speech.

Article Title: Clinical Exam and Electrovibratography Detecting Articular Disk Displacement: A Comparative Study. CRANIO Volume 29 Issue 4 October 2011

Authors: André Felipe Abrão, D.D.S., M.S.; Guiovaldo Paiva, D.D.S.; Soo Young Kim Weffort, D.D.S., M.S.; Solange Mongelli de Fantini, D.D.S., M.S., Ph.D. Volume 29 Issue 4 October 2011 \$10 US / \$10 INTL

Abstract: The complete evaluation of the stomatognathic system is essential for orthodontic diagnosis and treatment planning. The evaluation should not only include the occlusal static aspects, but also the functional aspects. This is because the latter could be altered and one or more components of the stomatognathic system could be involved, including the temporomandibular joint (TMJ). The most usual alteration found is articular disk displacement, which can affect the prognosis, and eventually the result in the need for orthodontic treatment. In order to add to the literature on recognition of these alterations, the purpose of this study was to compare the findings of two calibrated examiners on disk displacement clinical diagnosis, and the possible matching between the clinical examination and the electrovibratography (EVG) as methods of disk displacement detection. The sample was composed of 60 patients, divided equally into four groups of 15 participants each, depending on the presence or absence of disk displacement determined by a clinical examination performed by two trained examiners and according to gender. One of the trained operators used EVG and SonoPAK (BioResearch, Inc., Brown Deer, WI) software. The results of the two examiners' findings, one using clinical examination and the other using EVG and SonoPak software. The results were analyzed by applying the kappa coefficient. The findings of the two examiners were very close, resulting in an excellent agreement, and the comparison between the clinical examination and EVG findings resulted in satisfactory agreement between the



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methods.

Article Title: Surface electromyographic assessment of patients with long lasting temporomandibular joint disorder pain.

Journal of Electromyography and Kinesiology Volume 21, Issue 4, Pages 659-664, August 2011.

Authors: Gianluca M. Tartaglia, Gianluigi Lodetti, Guiovaldo Paiva, Claudia Maria De Felicio, Chiarella Sforza Received 13 October 2010. Received in revised form 27 January 2011; accepted 14 March 2011. published online 04 April 2011.

Abstract: The normalized electromyographic characteristics of masticatory muscles in patients with temporomandibular joint disorders (TMD) and healthy controls were compared. Thirty TMD patients (15 men, 15 women, mean age 23 years) with long lasting pain (more than 6 months), and 20 control subjects matched for sex and age were examined. All patients had arthrogenous TMD according to the Research Diagnostic Criteria for TMD (RDC/TMD). Surface electromyography of masseter and temporal muscles was performed during maximum teeth clenching either on cotton rolls or in intercuspal position. Standardized EMG indices and the median power frequency were obtained, and compared between the two groups and sexes using ANOVAs. During clenching, the TMD patients had larger asymmetry in their temporalis muscles, larger temporalis activity relative to masseter, and reduced mean power frequencies than the control subjects ($p < 0.05$, ANOVA). In both groups, the mean power frequencies of the temporalis muscles were larger than those of the masseter muscles ($p < 0.001$). No sex related differences, and no sex \times group interactions were found. In conclusion, young adult patients with long lasting TMD have an increased and more asymmetric standardized activity of their temporalis anterior muscle, and reduced mean power frequencies, relative to healthy controls. **Keywords:** Temporomandibular joint disorder, EMG, Asymmetry, Mean power frequency Frequency of electromyographic indices alterations in temporomandibular disorders and their correlation with pain intensity*

Título do Artigo: Frequência de alterações dos índices eletromiográficos na disfunção temporomandibular e sua correlação com o nível de dor. Rev Dor. São Paulo, 2014 abr-jun;15(2): ARTIGO ORIGINAL

Autores: Marcelo Oliveira Mazzetto¹, Guiovaldo Paiva², Laís Valencise Magri¹, Melissa de Oliveira Melchior¹, Carolina Almeida Rodrigues¹.

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ABSTRACT BACKGROUND AND OBJECTIVES: Understanding the importance of surface electromyography as a complementary method to understand the myofunctional status of the stomatognathic system, this study aimed at analyzing the frequency of altered and normal electromyographic indices in a sample of subjects with temporomandibular disorders, in addition to their relation with pain complaint. **METHODS:** Participated in the study 44 individuals with temporomandibular disorder signs and symptoms (11 males and 33 females), with mean age of 39 years, who were submitted to surface electromyography. Pain intensity was measured by the visual analog scale. Total Asymmetry Index (AStotal), Masseter Asymmetry Index (ASMM), Temporal Asymmetry Index (ASTA), Activation Index



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(ACtotal) and Torque Index (TOfotal) were calculated. Correlation between pain intensity and electromyographic indices was checked by Pearson correlation test and sample characterization with regard to investigated indices was done by descriptive analysis. RESULTS: Means of all indices were within previously established normality patterns. The frequency of altered electromyographic indices in our sample was high (ASMM=68%; ASTA=64%; TOfotal=64%; AStotal=55%). With regard to ACtotal, there has been predominance of masseter activity as compared to temporal activity, both for normal and altered values. Among individuals with altered indices, the left side had superior activity. No correlation was found between pain intensity and the level of electromyographic indices alterations ($p > 0.05$). CONCLUSION: The frequency of electromyographic indices alterations in individuals with temporomandibular disorders is high, pointing to the possible presence of myofunctional disorders of the stomatognathic system. These indices have no direct relation with pain complaint but show muscular activity imbalance, which may not be Apresentado em 03 de outubro de 2013. Aceito para publicação em 01 de abril de 2014. Conflito de interesses: não há.

Article Title: Comparison of mandibular movements in TMD by means of a 3D ultrasonic system and digital caliper rule. CRANIO: The Journal of Craniomandibular & Sleep Practice. March, 2016.

Authors: Marcelo Oliveira Mazzetto DDS, MScDs, PhD, Mateus Aparecido Anacleto DDS, MScDs, Carolina Almeida Rodrigues DDS, MScDs, Rafaela Mariana Fontes Bragança DDS, Guiovaldo Paiva DDS & Lais Valencise Magri DDS, MScDs.

Abstract Objective: To compare the amplitude of mandibular movement measurements obtained by two different methods: the ultrasound JAM system and digital caliper rule in individuals with temporomandibular disorder (TMD) vs. controls. Method: Sixty individuals, without distinction between sex and age were evaluated: 30 with diagnosis of TMD (RDC/TMD) and 30 controls. Mandibular movements of opening, protrusion, and left and right laterality were measured by means of two Instruments: Digital caliper rule and 3D ultrasonic Jaw Motion Analyzer (JMA-Zebris Medizintechnik, Isny/Allgäu, Germany). Data obtained were analyzed by descriptive analysis and compared by parametric statistics (Student's t-test), adopting a 5% level of significance. Results: When comparing the digital caliper rule with JMA, no significant differences were found for any of the movements evaluated ($p > 0.05$). In the comparison between groups, a difference was found in protrusion for both instruments used: JMA ($p = 0.004$) and digital caliper rule ($p = 0.003$), with the TMD group presenting reduced movement of protrusion when compared with the control group. Discussion: This study found no differences in obtaining the amplitude of mandibular movements when using the digital caliper rule or JMA system; both methods are effective. However, the ultrasonic system allows other types of analyses to be performed, such as the trajectory and speed of movement. Among the mandibular movements analyzed, protrusion was shown to be more compromised and limited in TMDs. Keywords: Ultrasonics, Temporomandibular disorders, Physical examination.



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Article title: Severity of TMD Related to Age, Sex and Electromyographic Analysis. Braz. Dent. J. vol.25 no.1 Ribeirão Preto Jan./Feb. 2014

Authors: Marcelo Oliveira Mazzetto¹, Carolina Almeida Rodrigues¹, Laís Valencise Magri¹, Melissa Oliveira Melchior¹, Guiovaldo Paiva²

¹Department of Restorative Dentistry, Ribeirão Preto School of Dentistry, USP - University of São Paulo, Ribeirão Preto, SP, Brazil
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ABSTRACT Temporomandibular disorders (TMD) are manifested as a group of signs and symptoms that affect a particular population profile. Some variables such as sex and age influence the clinical expression of this condition. This observational descriptive cross-sectional study aimed to correlate the severity of TMD established by the craniomandibular index (CMI) with the variables: age, sex and electromyographic activity of the masseter and anterior temporal muscles. Fifty-four subjects (15 males/39 females) aged between 16 to 65 years (mean age = 41 years) and diagnosed with TMD were evaluated. Severity was determined by the CMI. These subjects also underwent examination by surface electromyography of the masseter and anterior temporal muscles. No correlation was found between age and severity of TMD ($p=0.19/r=0.16$), however there was a trend of greater severity in young adults (25-50 years). The sex variable in the correlation was positive with the CMI ($p=0.03/r=-0.96$) and superior to women. A greater EMG activity of the anterior temporal in relation to masseter ($p=0.01$) was found and the left temporal activity had the highest average (161.5 ± 44.6 Hz). The electromyographic activity of the anterior temporal and right masseter muscles was positively correlated with the Dysfunction Index CMI ($p=0.01$). The use of CMI to quantify the severity of TMD and of EMG to assess the functionality of the masticatory muscles can be important allies to direct the treatment. Key words: temporomandibular joint dysfunction syndrome; electromyography; severity of illness index

Article Title: Evaluation of the condylar position in subjects with TMJ functional disorders by cone beam computed tomography. Braz Dent Sci 2014 Apr/Jun;17(2)

Authors: Marcelo Oliveira MAZZETTO¹, Giovana Cherubini VENEZIAM¹, Laís Valencise MAGRI¹, Mario Kaissar NASR¹, Alexandra Faria PAIVA¹, Guiovaldo PAIVA²

¹.Department of Restorative Dentistry, Ribeirão Preto School of Dentistry, University of São Paulo (FORP-USP), Ribeirão Preto, SP, Brazil.
².Center of Diagnosis and Treatment of the Temporomandibular Joint at São Paulo.

Abstract Objective: The aim of the study was to investigate the condylar position inside the articular cavity in temporomandibular disorder (TMD) subjects with signs and symptoms of functional articular disorders through images made with cone beam computed tomography (CBCT) at sagittal plane. Material & Methods: CBCT temporomandibular joint images of 62 patients (13 male and 49 female, mean age, 39.7 years) with intra-articular signs and symptoms diagnosed by the Craniomandibular Index were analyzed using the measurement method recommended by Kawamura and Ikeda (2009). We obtained linear measures of posterior space (PS), superior space (SS), and anterior space (AS) to determine the condyle position for each joint. T-test for independent samples for comparison between genders and ANOVA for age intervals was applied. Results: Statistical significant differences were found between males and females with TMD for SS of right temporomandibular joint (TMJ) and PS and SS of left TMJ ($p < 0.05$). By age-intervals, the statistical comparison showed no significant differences in the joint space among different age-intervals ($p > 0.05$). It was found that in TMD patients PS was slightly reduced, while SS and AS were slightly increased. Conclusion: There is no difference in condylar position by age-intervals; males present the superior space higher than females and; subjects with intraarticular TMD presented a more posterior and inferior condylar position.



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