

European Academy of Craniomandibular Disorders

October 21–24, 1999
Jerusalem, Israel

The 10th Closed Meeting of the European Academy of Craniomandibular Disorders (EACD) took place October 21–24, 1999, in Ma'ale Hachamisha Kibbutz Hotel, near Jerusalem, Israel. Alternating with the biannual Open Meetings, the closed gatherings allow the EACD membership to focus on a well-defined theme, which during this session was "Adaptation." Traditionally, a few prominent lecturers are chosen to provide ample time for discussion and exchange for the 40 members attending the meeting.

Dr Reznick of the University of Haifa shared his knowledge of muscle physiology. After an introduction to the basic physiologic principles of aging muscle, and the use of different energy sources according to the time spent in action, emphasis was placed on the balance between anabolism and catabolism, processes of lengthening, hyperplasia, and hypertrophy. Dr Reznick pointed out that for the effects of both immobilization of limbs and hyperexercise, a threshold exists for the age effects on the muscle, and he speculated on some influences in this regard, such as antioxidants, free radicals, vitamins, etc.

Dr D. Nitzan of the Department of Oral Surgery, Hadassah University, Jerusalem, stressed the importance of friction and lubrication in the joints and the working mechanism of hyaluronidase as a possible counterweight for phospholipase A2. Increased pressure in the joints seemed especially detrimental, in her opinion, because of an increase in free radicals. Tooth clenching was considered particularly detrimental in this respect. The hypothesis that the moving condyle appears to have a lot of adaptation capabilities, leading to optimal accommodation of condylar structures and teeth, was illustrated with some clinical examples involving surgical treatment of hyperplasia and posttraumatic joint problems.

Dr S. Dworkin of the University of Washington, Seattle, explained the need to use a double-axis system (somatic and psychologic) in the diagnosis and classification of temporomandibular disorders (TMD), as suggested in the Research Diagnostic Criteria. The difference between disease and illness, as well as the implications of TMD on anxiety and depression/somatization levels, was nicely illustrated. The theoretical lecture was followed by a practical workshop on building an Axis II diagnosis and the use of the Revised Symptom Checklist-90.

The second day of the meeting began with a presentation on basic pain physiology by Dr M. Devor, Hadassah University, Jerusalem, focusing on the interaction between sensitization and inflammatory reactions at the peripheral nerve level. Development of atypical facial pain or intractable TMD pain was discussed as a possible result of the damage of the peripheral nerve (neuropathic pain), leading to a state of hyperexcitability. Nerve ablation indeed leads to spontaneous firing and a change in the "behavior" of the nerve, which becomes highly mechanosensitive (eg, as in "nerve entrapment"). The site of stimulation might occur at the cut end of the nerve or at a distance (eg, the ganglion). In a secondary phase, sprouting of the post-ganglionic sympathetic nerve fibers could provoke excitation of the lesioned nerve fiber or ganglion, leading to a coupling between the sympathetic and sensory nerve fibers, probably mediated through noradrenaline. Most important in this process would be proteins responsible for the voltage-dependent sodium channels, which regulate the degree of depolarization of the nerve. The key focus for control of pain following nerve injury thus seems to be shifting to the peripheral level, and the use of local anesthetics was stressed in this regard. The

hypothesis by Janetta of neurovascular compression in the induction of trigeminal neuralgia was elaborated upon: a collection of hyperexcitable neurons would form a "trigeminal ganglion ignition focus," which would lead to a massive burst when a weak stimulus reaches this "cluster" of neurons. The excitation and subsequent hyperpolarization after the burst would then explain the paroxysms and the refractory period. The new developments in genetic determinants of pain (eg, atypical facial pain) were also discussed; the individual response to nerve injury is very variable, and animal experiments have revealed that breeding techniques can lead to complete separation into low- and high-autotomy rats after 6 generations. This kind of pain behavior thus seems heritable, and there appears to be a predisposition toward feeling more or less pain. This has several clinical consequences, such as the destigmatization of pain-sensitive individuals, future changes in treatment of pain with prediction of the level of postoperative analgesics tailored to the patient, choice of analgesics based on genetic sensitivity,

discovery of new pain-related proteins, and perhaps even gene therapy for pain.

Prof Rahamimoff of Tel Aviv University delivered a basic lecture illustrating the complexity of neural transmission, as well as neural plasticity, the abundance of ion channels, and the future of research directions with these channels. New developments also on the techniques used to image these channels (eg, with confocal microscopy) illustrated the progress in this field.

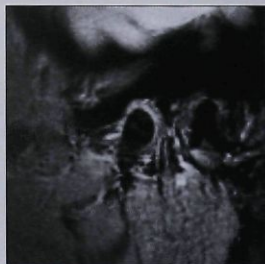
Finally, a clinical lecture by Dr Calderon of Tel Aviv University illustrated how well orofacial soft and hard tissues are able to adapt to rather aggressive and major surgical procedures.

The presentations of candidate members of the EACD were of high quality, and discussions on both the general lectures as the candidates' presentations were continued during the social program, thereby emphasizing the good balance between scientific transfer and social interaction achieved at these meetings.

—Antoon De Laat, LDS, GHO

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Special magnetic resonance imaging technology was at the core of a recent study of TMJ movement by Drs Yunn-Jy Chen, Luigi M. Gallo, Dieter Meier, and Sandro Palla (Chen et al, "Dynamic Magnetic Resonance Imaging Technique for the Study of the Temporomandibular Joint," *J OROFAC PAIN* 2000; 14:65-73). Now you, too, can take advantage of new technology and view the authors' "dynamic MRI" at our website.



Drs Chen, Gallo, Meier, and Palla investigated different pulse sequences, echo time, fields of view, slice thicknesses, scanning matrices, and other factors to obtain high-quality images that clearly showed joint components as patients opened and closed their mouths. The images were then combined and converted into animations. **Go to the "What's New" section at <http://www.quintpub.com>** to view complete opening and closing sequences of study subjects with joint clicking, disc displacement, and normal anatomy.

The journal article, which includes detailed descriptions of the techniques used, appeared in the Winter 2000 issue of the journal. Contact the Quintessence office to obtain a copy.