# 4th Tinnitus Research Initiative Meeting. Frontiers in Tinnitus Research
An international Conference on Tinnitus  
June 8th - 11th, 2010, Dallas, Texas, US

## OVERVIEW SCIENTIFIC PROGRAM

<table>
<thead>
<tr>
<th>June 8th</th>
<th>June 9th</th>
<th>June 10th</th>
<th>June 11th</th>
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<tbody>
<tr>
<td>08:00 - 09:00 a.m.</td>
<td>PLENARY TALK: Thalamocortical Dysrhythmia and Tinnitus</td>
<td>PLENARY TALK: Synaptic Physiology of Cochlear Hair Cells: Afferent Signaling</td>
<td>PLENARY TALK: Tinnitus and Neural Plasticity</td>
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<tr>
<td>Rodolfo Llinas</td>
<td>Paul Fuchs</td>
<td>Larry Roberts</td>
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<tr>
<td>09:00 - 10:00 a.m.</td>
<td>PLENARY TALK: Do Sensory Cortices Process More than One Sensory Modality During Perceptual Judgements?</td>
<td>PLENARY TALK: Tinnitus and Affective Disorders</td>
<td>PLENARY TALK: Increase in gain in the auditory system</td>
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<tr>
<td>Ranulfo Romo</td>
<td>Berthold Langguth</td>
<td>Arnaud Norena</td>
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Coffee Break (30 min) Coffee Break (30 min) Coffee Break (30 min)

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<th>June 8th</th>
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<tbody>
<tr>
<td>10:30 a.m. - 12:30 p.m.</td>
<td>Pathophysiology of tinnitus</td>
<td>Somatosensory Tinnitus</td>
<td>Behavioral Therapy</td>
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<tr>
<td>A Norena, D de Ridder</td>
<td>TG Sanchez</td>
<td>M Mazzoli</td>
<td>A Londero</td>
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<tr>
<td>12:30 a.m. - 1:30 p.m.</td>
<td>Sound Therapy</td>
<td>Pharmacologic Treatment of Tinnitus</td>
<td>Electrical Stimulation to the Brain and to the Ear</td>
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<tbody>
<tr>
<td>04:00 - 06:00 p.m.</td>
<td>Neuroimaging in Tinnitus: Mechanisms and Networks</td>
<td>Design of Clinical Trials</td>
<td>The TRI Flowchart for Patient Management</td>
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<tr>
<td>F Husain</td>
<td>M Landgrebe, WH Martin</td>
<td>B Langguth</td>
<td>R Salvi</td>
</tr>
<tr>
<td>06:00 - 07:00 p.m.</td>
<td>OPENING LECTURE: Richard Salvi Welcome Cocktail</td>
<td>MEETING: Is there a need for an international Tinnitus Society</td>
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Coffee Break (30 min) Coffee Break (30 min) Coffee Break (30 min)

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<tr>
<td>08:00 p.m.</td>
<td>BANQUET</td>
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# DETAILED SCIENTIFIC PROGRAM

## Tuesday, June 8th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>06:00 - 07:00 p.m.</td>
<td>Opening lecture: The Role of the Hippocampus in Tinnitus and Hearing</td>
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<td>Richard Salvi</td>
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<td>Welcome Cocktail</td>
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## Wednesday, June 9th

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00 - 09:00 a.m.</td>
<td>Plenary Talk: Thalamocortical Dysrythmia and Tinnitus</td>
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<tr>
<td></td>
<td>Rodolfo Llinas</td>
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<td>09:00 - 10:00 a.m.</td>
<td>Plenary Talk: Do Sensory Cortices Process More than One Sensory Modality During Perceptual Judgements?</td>
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<tr>
<td></td>
<td>Ranulfo Romo</td>
</tr>
<tr>
<td>10:30 - 12:30 p.m.</td>
<td>Pathophysiology of Tinnitus</td>
</tr>
<tr>
<td>R. Levine</td>
<td>The brainstem and tinnitus: Adjustments to the dorsal cochlear nucleus tinnitus hypothesis</td>
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<tr>
<td>A. Norena / D. de Ridder</td>
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<tr>
<td>D. De Ridder &amp; Elsa van der Loo</td>
<td>The involvement of auditory cortex in tinnitus</td>
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<tr>
<td>S. Vaneste</td>
<td>A network approach for understanding tinnitus pathophysiology</td>
</tr>
<tr>
<td>B. Langguth</td>
<td>The involvement of nonauditory brain regions in tinnitus</td>
</tr>
<tr>
<td>12:30 - 01:30 p.m.</td>
<td>LUNCH</td>
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<tr>
<td>01:30 - 03:30 p.m.</td>
<td>POSTER SESSION</td>
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<tr>
<td>04:00 - 06:00 p.m.</td>
<td>Neuroimaging in Tinnitus: Mechanisms and Networks</td>
</tr>
<tr>
<td>E. Diesch</td>
<td>Altered inhibitory processes in Tinnitus: MEG studies</td>
</tr>
<tr>
<td>D. Hall et al</td>
<td>Challenges and rewards of brain imaging in tinnitus</td>
</tr>
<tr>
<td>F. Husain</td>
<td>Neural network differences in tinnitus and hearing loss: An fMRI study</td>
</tr>
<tr>
<td>J. Melcher et al</td>
<td>Is the frontal lobe involved in tinnitus? A structural MRI study</td>
</tr>
<tr>
<td>D.J. Strauss et al</td>
<td>Event-Related Potentials as Correlates of Attentional Binding in Tinnitus: Some Insight from Neurodynamical Multiscale Modeling</td>
</tr>
<tr>
<td>06:00 - 07:00 p.m.</td>
<td>MEETING: Is there a need for an international Tinnitus Society</td>
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### Program

**Thursday, June 10th**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 08:00 - 09:00 a.m. | Plenary Talk: *Synaptic Physiology of Cochlear Hair Cells: Afferent Signaling*  
Paul Fuchs |
| 09:00 - 10:00 a.m. | Plenary Talk: *Tinnitus and Affective Disorders*  
Berthold Langguth |
| 10:30 - 12:30 p.m. | Behavioral Therapy  
M. Mazzoli  
M. Mazzoli et al: Mindfulness based stress reduction (MBSP) intervention in tinnitus therapy  
L. McKenna: A cognitive therapy model of tinnitus distress  
K. Peterson: 10 dilemmas in clinical work with tinnitus sufferers - Why neurophysiology and psychology should join forces in research and clinical practice  
H-P. Zenner: Psychophysiological treatment of tinnitus |
| 10:30 - 12:30 p.m. | TMS / VNS  
A. Londero  
M. Landgrebe et al: rTMS for the treatment of tinnitus: Results of a large randomized sham controlled trial  
T. Kleijnjung et al: Strategies for enhancement of temporal rTMS in tinnitus patients  
J.F. Piccirillo et al: Low-frequency rTMS over the left temporoparietal area for bothsomer tinnitus  
N. Weisz, I. Lorenz: The Quest for the Magic Bullet against tinnitus: can sound stimulation aid in improving the spatial accuracy of rTMS  
S. Vaneste: Correlation between IDCS, TMS and TENS: are some brains more responsive than others to neuromodulation  
K. Engineer et al: Reversing Pathological Neural Plasticity to Treat Tinnitus |
| 12:30 - 01:30 p.m. | Lunch |
| 01:30 - 02:30 p.m. | Poster Session  
T. Kleijnjung: Specific Forms of Tinnitus  
K. Peterson: 10 dilemmas in clinical work with tinnitus sufferers - Why neurophysiology and psychology should join forces in research and clinical practice  
H-P. Zenner: Psychophysiological treatment of tinnitus |
| 02:30 - 03:30 p.m. | Animal Models  
R. Salvi  
B.J. Farley, A. Norena: Auditory cortex voltage-sensitive dye imaging reveals spatiotemporal patterns of spontaneous and evoked neural activity at high resolution  
A. Fryatt et al: Altered voltage-gated sodium channel expression following moderate sound exposure in rat spiral ganglion neurons  
Th. Imig et al: Unilateral sound damage causes an increase in single unit spontaneous activity in the inferior colliculus of freely moving rats  
S. Voytenko, A. Galazyuk: Sound-triggered suppression of spontaneous firing in central auditory neurons and residual inhibition of tinnitus  
T. Kitahara et al: Behavioral and molecular combined animal studies for visualization of phantom tinnitus  
S. Hébert, P. Fournier: From rats to humans: Validation of the acoustic gap startle paradigm to objectify tinnitus  
E. Lobarinas: The effects of Tonabersat and Cyclobenzaprine on Noise Induced Tinnitus in rats  
J.G. Turner et al: Effects of Neramexane in a Mouse Model of Tinnitus  
C. Wu et al: Screening of Investigational Tinnitus Drugs Using Cultured Auditory Cortex Networks |
| 04:00 - 06:00 p.m. | The TRI Flowchart for Patient Management  
M. Koller: Introduction: Medical Guidelines  
T. Kleijnjung: History / Clin exam / Audiol Measurements  
D. De Ridder: Pulsatile Tinnitus  
T. Kleijnjung: Tinnitus + Conduct. Hearing Loss  
L. Del Bo: Tinnitus + Sensorineural Hearing Loss  
A. Londero: Tinnitus + Vertigo  
J.M: Lainez: Tinnitus + Headache  
M. Landgrebe: Tinnitus + Psychiatric Comorbidity  
T. Sanchez: Somatosensory Tinnitus  
G. Searchfield: Auditory Stimulation  
B. Langguth: Pharmacotherapy  
M. Landgrebe: Cognitive Behavioral Therapy  
D. De Ridder: Neurostimulation |
| 04:00 - 06:00 p.m. | Animal Models  
R. Salvi  
... Continuation |
| 06:30 p.m. | Banquet |

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*Banquet*
<table>
<thead>
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<tr>
<td>08:00 -</td>
<td>Plenary Talk: Tinnitus and Neural Plasticity</td>
<td>Larry Roberts</td>
<td>End of the Conference</td>
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<tr>
<td>09:00 -</td>
<td>Plenary Talk: Neuroplastic changes induced by auditory stimulation</td>
<td>Arnaud Norena</td>
<td>End of the Conference</td>
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<tr>
<td>10:30 -</td>
<td>Sound Stimulation</td>
<td>G. Searchfield</td>
<td>Pharmacological Treatment of Tinnitus</td>
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<tr>
<td>12:30 p.m.</td>
<td>M. Bergholm et al: Internet-based acoustic therapy (IBAT) for tinnitus patients</td>
<td>A.B. Elgoyhen</td>
<td>C. Coelho: Cyclobenzaprine to treat chronic tinnitus: results of a 16 weeks prospective open-label trial</td>
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<td>A. Raymond et al: The New Zealand experience with a new sound therapy concept</td>
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<td>L. Del Bo et al: Passive Auditory Stimulation by a prototype of hearing aid that implements the high-pitch auditory stimulation</td>
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<td>O. Dyrulf: High frequency dual sound generator combination instrument for tinnitus sound therapy</td>
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<td>12:30 -</td>
<td>LUNCH</td>
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<td>01:30 -</td>
<td>Electrical Stimulation to the Brain and to the Ear</td>
<td>A. Møller</td>
<td>Perceptual Training</td>
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<td>A. Kleine Punte et al: Electrical promontory stimulation to predict tinnitus suppression after cochlear implantation</td>
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<td>A. Kleine Punte et al: Cochlear Implantation as a durable tinnitus treatment in patients with single-sided deafness</td>
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<td>04:00 -</td>
<td>Imaging II</td>
<td>M. Sereda et al: The relationship between tinnitus pitch and audiometric variables: A meta analysis</td>
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<tr>
<td>06:00 p.m.</td>
<td>M. Okamoto et al: Correlates of tinnitus and tinnitus suppression</td>
<td>J. Smurzynski et al: Distortion product otoacoustic emissions in normally hearing patients with unilateral tinnitus</td>
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<td>H. Stracke et al: Listening to tailor-made notched music reduces tinnitus loudness and tinnitus-related auditory cortex activity</td>
<td>X. Zhou et al: Loss of Cochlear compression is predictive of Tinnitus for subjects with mild to moderate hearing loss</td>
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<td>M. Sereda et al: The relationship between tinnitus pitch and audiometric variables: A meta analysis</td>
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<td>O. Warusfel et al: Virtual Reality for Tinnitus therapy: Tinnitus recreation method</td>
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<td>New Hypotheses</td>
<td>J.M. Lainez</td>
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<td></td>
<td>K. Brockler, N. Gillson: Molecular biology of tinnitus: Cytokine and Endocrine Causes</td>
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<td>D.W. Holmes: The Use of Ultrasound in the Treatment of Tinnitus</td>
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<td>D. de Ridder: Allostasis as a mechanism for tinnitus chronification</td>
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<td>M. Murase: Towards a New Synthesis: Health and Disease</td>
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<td><strong>Assessment Questionnaires</strong></td>
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<td>R Görtelmeyer et al</td>
<td>Development and Psychometric Validation of the Attention and Performance Self Assessment Scale (APSA) in tinnitus patients</td>
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<td>DW Holmes</td>
<td>Development of a Tinnitus Evaluation Software Program</td>
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<td>US Korbel et al</td>
<td>Intercultural Validation of the Tinnitus Handicap Inventory 12 (THI-12)</td>
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<td>O Meeus et al</td>
<td>Independence of variables in a tinnitus population</td>
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<td><strong>Audiological Assessment</strong></td>
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<td>B Chaudhury et al</td>
<td>Individual Profiling of Tinnitus Perception by developing Interactive Tinnitus Analyzer Software</td>
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<td>P Nee et al</td>
<td>Comparing an Online Tinnitus Examination to a Tinnitus Exam in a Research Environment</td>
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<td>HJ Shim et al</td>
<td>Hearing abilities at high frequency in patients with tinnitus</td>
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<td><strong>Clinical Trials</strong></td>
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<td>M Koller et al</td>
<td>THI score changes over the course of therapy and patient’s subjective perception of tinnitus change</td>
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<td><strong>Epidemiology</strong></td>
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<td>R Figueiredo et al</td>
<td>Incidence of tinnitus in teenagers and young adults mp3 players users</td>
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<td>D Roitman, A Aspinwall</td>
<td>Survey Online about Tinnitus and hyperacusis, via our website</td>
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<td><strong>Health System</strong></td>
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<td>Ph Gander et al</td>
<td>A survey of Audiology departments across England: Referral pathways</td>
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<tr>
<td>D Hoare et al</td>
<td>A survey of Audiology departments across England: Tinnitus assessment, treatment and outcome measures</td>
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<td>J Lim et al</td>
<td>Experience of a tinnitus counseling clinic in Singapore</td>
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<td><strong>Pathophysiology</strong></td>
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<tr>
<td>J Ylikoski et al</td>
<td>Stress reaction in patients with acute noise induced tinnitus</td>
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<td>H-P. Zenner</td>
<td>The sensitization model for acquired centralized tinnitus</td>
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<td>N. Catz, A.J. Norena</td>
<td>Changes in the cortical spectro-temporal receptive fields induced by notched stimuli</td>
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<tr>
<td>L Lagemann et al</td>
<td>Frequency tuning in chronic tinnitus patients</td>
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<tr>
<th>June 09, 2010</th>
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<tr>
<td><strong>Case Reports</strong></td>
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<tr>
<td>Z Komacek et al</td>
<td>Unilateral Tinnitus – The Only Symptom of a Large Vestibular Schwannoma</td>
</tr>
<tr>
<td>JJ Song, JW Koo</td>
<td>Recording and analysis of pulsatile tinnitus in dural sinus diverticulum</td>
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<tr>
<td>P Winkler</td>
<td>Early intervention in sudden onset tinnitus</td>
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<tr>
<td><strong>Others</strong></td>
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<tr>
<td>G Reul, M. Malusevic</td>
<td>American Tinnitus Association : Our Mission To Cure Tinnitus</td>
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### Somatosensoric Tinnitus

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<thead>
<tr>
<th>Author(s)</th>
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<tbody>
<tr>
<td>E Biesinger et al</td>
<td>Qigong for the treatment of tinnitus. A randomized controlled pilot study</td>
</tr>
<tr>
<td>M Estola</td>
<td>Muscular tension and tinnitus. An experimental Trial of Trigger Point Injections on Tinnitus</td>
</tr>
<tr>
<td>R Levine et al</td>
<td>Continuous auricular electrical stimulation quiets the tinnitus of the somatosensory pulsatile tinnitus syndrome</td>
</tr>
<tr>
<td>SN Park</td>
<td>Clinical Characteristics and Therapeutic Responses of Muscle Origin Tinnitus</td>
</tr>
<tr>
<td>C Rocha, TG Sanchez</td>
<td>Efficacy of myofascial trigger point deactivation for tinnitus treatment</td>
</tr>
<tr>
<td>V Vielsmeier et al</td>
<td>Tinnitus and temporomandibular joint disorders – a special subgroup of tinnitus patients?</td>
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### Specific Forms of Tinnitus

<table>
<thead>
<tr>
<th>Author(s)</th>
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<tbody>
<tr>
<td>G Baracca et al</td>
<td>Botulinum toxin treatment for objective tinnitus caused by palatal myoclonus</td>
</tr>
<tr>
<td>AC Binetti, et al</td>
<td>Tinnitus in Vestibular Migraine</td>
</tr>
<tr>
<td>P Gao, Y Jin</td>
<td>New Pathogen and Therapy - In 17 Cases of Chronic Conductive Tinnitus</td>
</tr>
<tr>
<td>J-W Koo</td>
<td>Recording and analysis of pulsatile tinnitus in dural sinus diverticulum</td>
</tr>
<tr>
<td>J-H Lee</td>
<td>Evaluation of Tinnitus in the patients with Meniere’s Disease</td>
</tr>
<tr>
<td>SN Park</td>
<td>A Case of Palatal Myoclonus Associated with Orofacial Buccal Dystonia</td>
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### June 10, 2010

**01:30 – 02:30 p.m.**

#### Auditory Stimulation

<table>
<thead>
<tr>
<th>Author(s)</th>
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<tbody>
<tr>
<td>G Baracca et al</td>
<td>Customized Sound Therapy for Tinnitus</td>
</tr>
<tr>
<td>D Choy</td>
<td>Sequential phase shift sound cancellation RX predominant tone tinnitus</td>
</tr>
<tr>
<td>M Nakagawa</td>
<td>A Study of Music Therapy using “1/f-fluctuation sounds” for Tinnitus patients</td>
</tr>
<tr>
<td>CW Newman, SA Sandridge</td>
<td>Benefit from and economic value associated with two alternative sound therapy tinnitus management options</td>
</tr>
<tr>
<td>M Piskosz</td>
<td>Clinical application of a new Tinnitus Sound Generator (TSG) device</td>
</tr>
<tr>
<td>VS Rothholtz et al</td>
<td>Tinnitus Suppression by Low-Rate Modulated Sounds</td>
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<tr>
<td>SA Sandridge, CW Newman</td>
<td>First year findings of three-year study of long-term benefits of neuromonics treatment</td>
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<tr>
<td>M-W Suh et al</td>
<td>Specific Effects and Prognostic Factors of Hearing Aids on Tinnitus</td>
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#### Brain Stimulation

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
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<tbody>
<tr>
<td>SJ Burger</td>
<td>rTMS for the treatment of tinnitus: Are there clinical parameters which predict the therapeutic response and what happens with responders over longer follow-up periods?</td>
</tr>
<tr>
<td>K Ogawa</td>
<td>Repetitive transcranial magnetic stimulation for treatment of chronic tinnitus. -Clinical and experimental study</td>
</tr>
<tr>
<td>M. Landgrebe</td>
<td>Clinical improvement after repetitive transcranial magnetic stimulation is accompanied by changes in gray matter detected by voxel-based morphology</td>
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#### Cochlear Implant

<table>
<thead>
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<tbody>
<tr>
<td>M Cosgarea et al</td>
<td>Tinnitus after cochlear implantation</td>
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<tr>
<td>A Kleine Punte</td>
<td>Electric acoustic stimulation and tinnitus</td>
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#### Neurofeedback

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<thead>
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<tbody>
<tr>
<td>B Richmond et al</td>
<td>Developing a Brain Computer Interface (BCI) for Neuromodulation of Tinnitus Disability</td>
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<td>Nutrition</td>
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<tr>
<td>K Prasad et al</td>
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<td>Micronutrients in Prevention and Improvement of Standard Therapy in Tinnitus</td>
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<th>Animal Pathophysiology</th>
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<tr>
<td>J Suchland, M Kössl</td>
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<td>Effects of local salicylate application on inferior colliculus neuronal activity in vivo</td>
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<th>Pharmacology</th>
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<tbody>
<tr>
<td>M.A. Lopez-Gonzalez et al</td>
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<td>Oral glycine inhibits cortical activity in tinnitus patients</td>
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<td>MA Lopez-Gonzalez et al</td>
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<td>Wine and histamine in tinnitus</td>
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<tr>
<td>AK Shukuryan et al</td>
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<td>Treatment of tinnitus in hypertensive patients</td>
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