HIGHLIGHTS of new literature

Kaltenbach JA. Tinnitus: Models and mechanisms. Hear Res. 2010. Epub ahead of print.
A comprehensive review covering the cellular and molecular mechanisms underlying tinnitus generation.

Noreña AJ. An integrative model of tinnitus based on a central gain controlling neural sensitivity.
Neurosci Biobehav Rev. 2010 Nov 19. Epub ahead of print.
Integrating findings from basic and clinical research Arnaud Norena proposes a testable model for tinnitus generation.

Roberts LE, Eggermont JJ, Caspary DM, Shore SE, Melcher JR, Kaltenbach JA. Ringing ears: the
neuroscience of tinnitus. J Neurosci. 2010;30(45):14972-9.
Reviewing the neuroscience of tinnitus the latest findings from various methods are presented.

Leaver AM, Renier L, Chevillet MA, Morgan S, Kim HJ, Rauschecker JP. Dysregulation of limbic and auditory networks in tinnitus. Neuron. 2011;69(1):33-43.
This imaging study highlights the importance of audio-limbic interactions in the pathophysiology of tinnitus.

Ortmann M, Müller N, Schlee W, Weisz N. Rapid increases of gamma power in the auditory cortex
following noise trauma in humans. Eur J Neurosci. 2010 Dec 29. Epub ahead of print.
Rock musicians after band practice were investigated with MEG to identify the neuronal correlates of transient tinnitus following noise trauma.

Gu JW, Halpin CF, Nam EC, Levine RA, Melcher JR. Tinnitus, diminished sound-level tolerance, and elevated auditory activity in humans with clinically normal hearing sensitivity. J Neurophysiol. 2010;104(6):3361-70.
This fMRI study differentiates tinnitus- and hyperacousis related abnomalities of sound evoked auditory pathway activity.

Muehlmeier G, Biesinger E, Maier H. Safety of Intratympanic Injection of AM-101 in Patients with
Acute Inner Ear Tinnitus. Audiol Neurootol. 2011;16(6):388-397.
First results from a pilot trial investigating topical administration of a NMDA receptor antagonist for the treatment of acute tinnitus.

Suckfuell M, Althaus M, Ellers-Lenz B, Gebauer A, Goertelmeyer R, Jastreboff PJ, Moebius HJ, Rosenberg T, Russ H, Wirth Y, Krueger H. A randomized, double-blind, placebo-controlled clinical
trial to evaluate the efficacy and safety of neramexane in patients with moderate to severe subjective tinnitus. BMC Ear Nose Throat Disord. 2011;11(1):1.
Neramexane, an antagonist at α9α10 cholinergic nicotinic receptors and N-methyl-D-aspartate receptors shows efficacy in the treatment of tinnitus in this phase II study.

Bauer CA, Brozoski TJ. Effect of Tinnitus Retraining Therapy on the Loudness and Annoyance of
Tinnitus: A Controlled Trial. Ear Hear. 2010 Sep 30. Epub ahead of print.
This controlled clinical demonstrated that both TRT and general counseling without additional sound therapy are effective in reducing the annoyance and impact of tinnitus.

Hesser H, Weise C, Westin VZ, Andersson G. A systematic review and meta-analysis of randomized controlled trials of cognitive-behavioral therapy for tinnitus distress. Clin Psychol Rev. 2010 Dec 23. Epub ahead of print.
This meta-analysis concludes that CBT is an effective treatment of tinnitus distress. However there are only few large-scale, well-controlled trials.

Hobson J, Chisholm E, El Refaie A. Sound therapy (masking) in the management of tinnitus in adults. Cochrane Database Syst Rev. 2010 Dec 8;12:CD006371.
This Cochrane meta-analysis failed to show strong evidence of the efficacy of sound therapy in tinnitus.

De Ridder D, Vanneste S, Kovacs S, Sunaert S, Menovsky T, van de Heyning P, Møller A. Transcranial magnetic stimulation and extradural electrodes implanted on secondary auditory cortex for tinnitus suppression. J Neurosurg. 2011 Jan 14. Epub ahead of print.
Here clinical results from transcranial magnetic and intracranial electrical stimulation of the auditory cortex in a large series of 43 patients are reported.

Zhang J, Zhang Y, Zhang X. Auditory Cortex Electrical Stimulation Suppresses Tinnitus in Rats. J
Assoc Res Otolaryngol. 2010 Nov 6. Epub ahead of print.
This animal study demonstrates that auditory cortex electrical stimulation suppresses behavioural evidence of tinnitus in rats.

Engineer ND, Riley JR, Seale JD, Vrana WA, Shetake JA, Sudanagunta SP, Borland MS, Kilgard MP.
Reversing pathological neural activity using targeted plasticity. Nature. 2011 470(7332):101-104.
By combining specific auditory stimulation with vagal nerve stimulation these researchers were able to reverse both behavioural evidence and neuronal correlates of tinnitus in rats.

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