

## Bibliography for webinar “Vestibular Hair Cells”

Presenter Ruth Anne Eatock, Ph.D. | April 22, 2024

### Reviews

**Vestibular system neuroscience.** Cullen KE. Vestibular processing during natural self-motion: implications for perception and action. *Nat Rev Neurosci.* 2019 Jun;20(6):346-363. doi:10.1038/s41583-019-0153-1. PMID: 30914780; PMCID: PMC611162.

**Physiological organization of the vestibular inner ear.** Eatock RA, Songer JE. Vestibular hair cells and afferents: two channels for head motion signals. *Annu Rev Neurosci.* 2011;34:501-34. doi: 10.1146/annurev-neuro-061010-113710. PMID: 21469959.

**Introduction to non-quantal synaptic transmission by vestibular hair cells of mammals, birds and reptiles.** Eatock RA. Specializations for Fast Signaling in the Amniote Vestibular Inner Ear. *Integr Comp Biol.* 2018 Aug 1;58(2):341-350. doi: 10.1093/icb/icy069. PMID:29920589; PMCID: PMC6104706.

**Hair cell regeneration.** Burns JC, Stone JS. Development and regeneration of vestibular hair cells in mammals. *Semin Cell Dev Biol.* 2017 May;65:96-105. doi: 10.1016/j.semcdcb.2016.11.001. Epub 2016 Nov 15. PMID: 27864084; PMCID:PMC5423856.

**Vestibular implants.** Stultiens JJA, Lewis RF, Phillips JO, Boutabla A, Della Santina CC, Glueckert R, van de Berg R. The Next Challenges of Vestibular Implantation in Humans. *J Assoc Res Otolaryngol.* 2023 Aug;24(4):401-412. doi: 10.1007/s10162-023-00906-1. Epub 2023 Jul 29. PMID: 37516679; PMCID: PMC10504197.

### Primary papers on non-quantal transmission at the type I-calyx synapse

**First description of novel non-quantal synaptic transmission, in an avian vestibular inner ear.** Yamashita M, Ohmori H. Synaptic responses to mechanical stimulation in calyceal and bouton type vestibular afferents studied in an isolated preparation of semicircular canal ampullae of chicken. *Exp Brain Res.* 1990;80(3):475-88. doi: 10.1007/BF00227989. PMID: 2387349.

**Direct demonstration and analysis of vestibular non-quantal transmission with pre- and post-synaptic recordings.** Contini D, Holstein GR, Art JJ. Synaptic cleft microenvironment influences potassium permeation and synaptic transmission in hair cells surrounded by calyx afferents in the turtle. *J Physiol.* 2020 Feb;598(4):853-889. doi:10.1113/JP278680. Epub 2019 Nov 29. PMID: 31623011; PMCID: PMC7024053.

**Model of how non-quantal transmission occurs.** Govindaraju AC, Quraishi IH, Lysakowski A, Eatock RA, Raphael RM. Nonquantal transmission at the vestibular hair cell-calyx synapse: K-LV currents modulate fast electrical and slow K<sup>+</sup> potentials. *Proc Natl Acad Sci U S A.* 2023 Jan 10;120(2):e2207466120. doi: 10.1073/pnas.2207466120. Epub 2023 Jan 3. PMID: 36595693; PMCID: PMC9926171.

**Evidence for vestibular nonquantal transmission in vivo.** Pastras CJ, Curthoys IS, Asadnia M, McAlpine D, Rabbitt RD, Brown DJ. Evidence That Ultrafast Nonquantal Transmission Underlies Synchronized Vestibular Action Potential Generation. *J Neurosci.* 2023 Oct 25;43(43):7149-7157. doi: 10.1523/JNEUROSCI.1417-23.2023. Epub 2023 Sep 29. PMID: 37775302; PMCID: PMC10601366.