

Prof. Asya Rolls

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Dr. Rolls is an Associate Prof. at the Ruth and Bruce Rappaport Medical School, Technion, Israel Institute of Technology and an International Howard Hughes Medical Institute (HHMI)-Wellcome investigator. She obtained her PhD from the Weizmann Institute, Israel where she was trained with Prof. Michal Schwartz and the late Prof. Ofer Lider. She then completed her postdoctoral training at the Psychiatry Department at Stanford University, CA with prof. Luis de Lecea and Prof. Craig Heller. At October 2012, she joined the Technion as a group leader.

Dr. Rolls' laboratory studies the physiological mechanisms whereby emotions and thoughts affect physical health. Such connection is evident by the emergence of disease following stress, or recovery in response to placebo treatment. Nevertheless, this fundamental aspect of physiology remains largely unexplored. Using state of the art tools in neuroscience and in immunology, they investigate how specific brain activity affects the immune response. By deciphering the neuronal pathways mediating brain-immune signals, her work aims to harness the brain's therapeutic potential.

Her work has been recognized through number of awards including the NARSAD Young Investigator Award, Krill Prize, the Adelis Brain Research Award an ERC starting grant and her selection to the FENS-KAVLI network of excellence.

Selected publications:

1: Korin B, Ben-Shaan TL, Schiller M, Dubovik T, Azulay-Debby H, Boshnak NT, Koren T, Rolls A. High-dimensional, single-cell characterization of the brain's immune compartment. *Nature Neuroscience*. 2017 Sep;20(9):1300-1309.

2: Ben-Shaan TL, Azulay-Debby H, Dubovik T, Starosvetsky E, Korin B, Schiller M, Green NL, Admon Y, Hakim F, Shen-Orr SS, Rolls A. Activation of the reward system boosts innate and adaptive immunity. *Nature Medicine* 2016 Aug;22(8):940-4.

3: Rolls A, Pang WW, Ibarra I, Colas D, Bonnavion P, Korin B, Heller HC, Weissman IL, de Lecea L. Sleep disruption impairs haematopoietic stem cell transplantation in mice. *Nature Communications*. 2015 Oct 14;6:8516.

4: Rolls A, Colas D, Adamantidis A, Carter M, Lanre-Amos T, Heller HC, de Lecea L. Optogenetic disruption of sleep continuity impairs memory consolidation. *Proc Natl Acad Sci U S A*. 2011 Aug 9;108(32):13305-10.

5: Rolls A, Shechter R, London A, Ziv Y, Ronen A, Levy R, Schwartz M. Toll-like receptors modulate adult hippocampal neurogenesis. *Nature Cell Biology* 2007 Sep;9(9):1081-8.