

Figure 3. Effects of VIP activation on auditory cortical activity. Similarly to running, VIP activation increases spontaneous firing rate, but this change did not reduce sound-evoked modulation of auditory cortical neurons.

- A. Spontaneous firing rate of recorded neurons (N = 372) during laser-off and laser-on trials. Green: narrow-spiking neurons, grey: regular-spiking neurons. Red filled circle: population mean, red unfilled circle: median.
- B. Onset response firing rate of recorded neurons (N = 372) to a white noise stimulus (0 100 ms post stimulus onset) during laser-on and laser-off trials.
- C. Mean response of an example neuron to a white noise stimulus during laser-off (grey) and laser-on (cyan) trials, while the mouse was sitting. White noise is depicted in magenta (vertical dashed line shows onset), laser is depicted in cyan (vertical dashed line shows onset).
- D. Distributions of sound modulation indices while the mouse was sitting with (cyan) and without (grey) VIP activation. VIP activation had no net effect on sound modulation index (sound MI laser-off = 0.53 ± 0.01 , laser-on 0.47 ± 0.02 , rank-sum p = 0.12, N = 0.1
- E. Comparison of sound modulation index in sitting laser-off versus laser-on conditions for each cell (N = 372).