

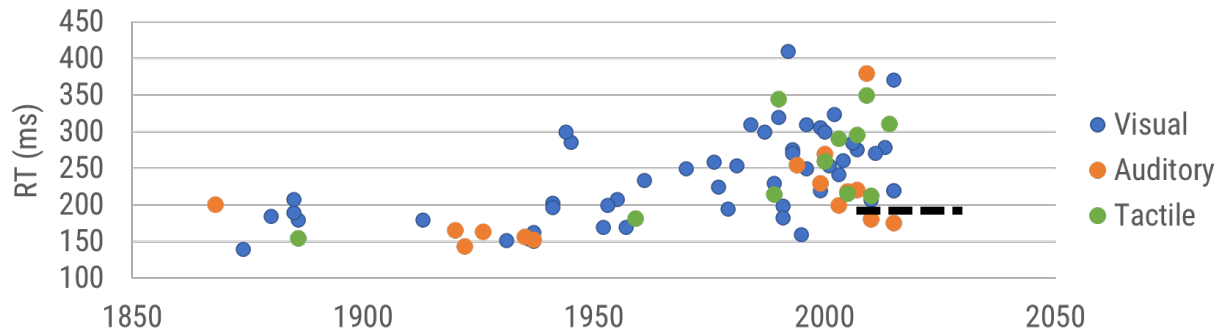


Accuracy Matters

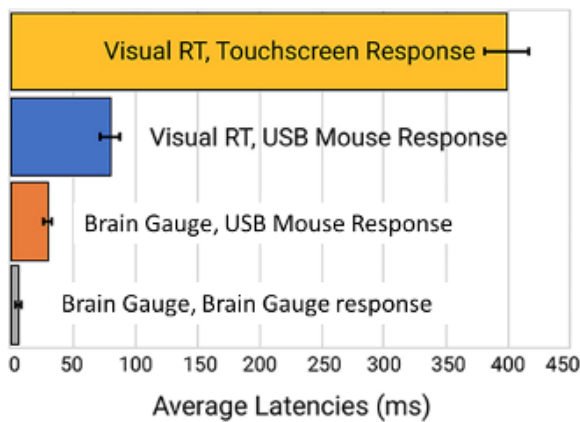
Brain testing and brain training with Brain Gauge

June 24th, 2023

The Brain Gauge is laboratory grade equipment that has been miniaturized to the size of a computer mouse (lost 15lbs in 15 years of development!) and significantly outperforms consumer grade equipment (e.g., laptops, pcs and phones) that other brain testing and brain training platforms rely on. One good example to directly compare those different platforms with the Brain Gauge is the reaction time measure. Reaction time(RT) – how quickly an individual can respond to a physical stimulus – is included in most brain testing platforms. Most brain training platforms claim that people that use them will improve their reaction time. However, none of those platforms can collect reaction time accurately even though they depend on that measure. Note that RT and RT variability are important indices of white matter integrity



Historical records of reaction time testing in the literature from 1860 to present demonstrate a significant upward drift started in the 1970s with the introduction of personal computers. The Brain Gauge is the platform independent of these systems (dark line indicates data from Brain Gauge).



The Brain Gauge is between 100x and 1000x more accurate than other systems. At left are the latencies introduced by different platforms. These latencies are responsible for the increases in reaction times reported in the literature. Methodologically, they cannot simply be subtracted from the results because of the variability that they also introduce – the latencies are an average. The Brain Gauge is platform independent and has a timing accuracy of 0.3msec

The Brain Gauge can accurately measure an individual's reaction time variability which is directly correlated to attention and focus. Note that normative attention is in the range indicated at right (“+”). All other platforms have variability far in excess of that value. Full story at Holden et al, 2020; Frontiers in Human Neuroscience or check out the science playlist on Brain Gauge YouTube channel and take a look at the [Reaction time video](#).

