

Further optimizing memory assessment tests: considering the neglected influencing factors

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Editorial

Memory assessment is an important part of diverse studies in different fields.¹⁻⁴ Indeed, many diseases such as neurodegenerative diseases including Alzheimer's disease, testing selected drugs or methodologies require assessment memory-related parameters. Up to now, a number of methods is used in experimental pharmacology/toxicology and physiology, including Y-maze,⁵⁻⁷ Morris water maze,⁸⁻¹⁰ functional magnetic resonance imaging,¹¹ to explore different aspects and types of memories in diverse context and at different levels.

However, the diverse used methods have been described with some limits therefore a need to further optimize and validate the methods toward more accurate results. Herein, we would like to introduce diverse several points that can be taken into consideration during the validation/ optimization process. Since not very much is known about the memory process and about the factors that can influence it is highly recommended to avoid or minimize the factor that could have an influence on the memory performance even the elements that might have an indirect influence especially when conducting memory assessment tests. This could include light intensity, air pressure, olfactory stimuli, stress and noise.

In addition to such approaches, conducting the same test on similar control groups under similar condition at the same locations and during the same time frame remains also a necessity. Furthermore, it would further improve the memory test optimization if parameters related to memory performance such as selected neurotransmitters are also measured during the memory assessment. Importantly, considering the physiological factors such as brain regions maturity, locomotors, visibility and age is also a key element while interpreting the test results and therefore are also to be considered within the optimization process.

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Conflicts of Interest

The author declares no conflict of interest.

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