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# The Science Behind Creyos Dementia Screening and Assessment

The Creyos dementia protocol combines cognitive, functional, and behavioral testing to provide information about symptoms of mild cognitive impairment and dementia. This guide reviews the science behind the assessments, including the link between age and cognitive decline, the tasks used in this protocol, and how patients are classified based on standard diagnostic criteria.

Creyos supports the full continuum of dementia testing and care:

-  **Screening:** a five-minute, two-task screener to identify impairment and determine if further testing is needed.
-  **Assessment:** a 20-minute assessment with four additional tasks and four questionnaires to help establish diagnostic criteria for mild or major neurocognitive disorders.
-  **Care planning:** a collection of the results of the assessment and additional questionnaire results to help inform, design, and deliver a care plan suitable for patients with cognitive impairment.
-  **Tracking:** the ability to easily readminister the protocol for longitudinal tracking and monitoring of cognitive health.

[\*Read more about the range of cognitive screening, testing, and care planning available in Creyos Health.\*](#)

# A. Aging and Cognitive Decline

**Cognition declines with age, and everyone ages.**

Despite the unique needs of older adults, many healthcare professionals, including primary care physicians, are uncomfortable assessing a patient's cognitive health. That leaves a problem: nearly all patients will notice symptoms of cognitive decline as they age, but their doctors are not equipped to tell them if the decline is normal or if it is greater than expected. The latter could be an early sign of age-related conditions like dementia.

The Creyos dementia protocol is designed to help solve this problem by making it easier for healthcare providers to identify mild or severe cognitive impairment.

This guide will review the scientific background behind the creation of the screener and assessment, define key terms needed to interpret the reports, and provide references for further reading. For the nitty-gritty details of each element of the report and interpretation advice, see the [Creyos Dementia Protocol Interpretation Guide](#).

## Defining Mild Cognitive Impairment (MCI)

Mild cognitive impairment (MCI) is recognized in the medical and scientific community as a potential early indicator of dementia risk. While not all people with MCI will go on to develop a neurocognitive disorder, **those with MCI are at a greater risk of developing Alzheimer's disease or a related dementia** (Prado et al., 2019). The Creyos dementia protocols are based on a working definition of mild cognitive impairment (MCI), also known as mild neurocognitive disorder, that combines consensus definitions from the NIA-AA and the DSM-5.

The National Institute on Aging and Alzheimer's Association (NIA-AA; see [Jack et al., 2018](#)), focusing on research-based criteria and preclinical Alzheimer's disease (AD) as a cause for impairment, proposed that MCI is present when a patient displays evidence of:

- Cognitive performance below the expected range for the individual, based on all available information; *and*
- Decline from baseline, reported by the individual, an observer, or via longitudinal testing; *and*
- Capacity for performing daily life activities independently

The DSM-5 is more clinically focused, but has similar criteria for mild neurocognitive disorder (the DSM's equivalent term for MCI):

- Modest decline in one or more cognitive domains, based on concern of the individual, an informant, or the clinician and a decline in cognitive performance, preferably documented by standardized neuropsychological testing; *and*