Cognitive Health Is Not Just for Late Life: A Lifespan Perspective

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Healthy cognitive aging is often framed as a construct of late-life or when symptoms set in- when memory slips, attention fades, or diagnoses like mild cognitive impairment or dementia enter the picture. Such framing is incomplete and misleading. It assumes cognitive health is reactive rather than shaped over time. By the time decline becomes noticeable, the disease process has often been unfolding for years, such as in Alzheimer's disease, where pathological changes such as amyloid accumulation and tau pathology begin decades before clinical symptoms emerge (Jack et al., 2018). Therefore, if the disease process starts decades before the onset of symptoms, then factors that may potentially prevent, delay, or accelerate the disease process are present even earlier.

It becomes more appropriate to conceptualize cognitive health as a lifespan process shaped by accumulated patterns of behavior. One's trajectory of cognitive health is continuously shaped by the synergistic interplay of biological, psychological, behavioral, and social factors. What we see in older adulthood is not the start of decline, but the byproduct of that trajectory. As experts in behavior, psychologists are in a unique position to facilitate health-promoting behaviors in their patients and facilitate cognitive health. Here, we summarize modifiable lifestyle factors that can be addressed over the lifespan. While lifestyle factors will not prevent cognitive decline entirely, they certainly can alter its timing, impact, and course.

Modifiable Lifestyle Factors

Mental Stimulation

The concept of cognitive reserve beautifully illustrates the brain's response to modifiable lifestyle factors, as the brain remains capable of adapting, compensating, and maintaining function

even in the presence of disease burden. Individuals with higher cognitive reserve (e.g., those who stay mentally engaged, pursue education, remain socially active, and take on cognitively demanding roles) tend to show greater resilience when faced with disease burden, even when similar levels of pathology are present (Stern, 2012). The brain is not simply aging; it is responding to how it is used. Cognitive reserve is not built through a single experience, but through sustained engagement over time. It reflects cumulative adaptation shaped by exposure to challenge and novelty. Environments that demand learning and adaptation strengthen this capacity, while disengagement gradually narrows it. That makes everyday behavior more meaningful than it first appears. Mental stimulation and inquisitiveness are not trivial habits but rather reinforce the brain's ability to adapt.

Physical Activity and Nutrition

It is easy to separate the brain from the body conceptually, but that distinction does not hold in practice. Physical activity is associated with improved cognition and reduced risk of dementia (Erickson et al., 2011). Similarly, dietary patterns like the Mediterranean and MIND diets are linked to slower decline (Morris et al., 2015). The principle is simple: the brain depends on the body more than we tend to acknowledge.

Sleep and Mental Stress

Sleep and stress further shape this trajectory. Chronic sleep disruption is linked to impairments in attention, memory, and executive functioning (Ju et al., 2014; Spira et al., 2013). Sleep supports neural restoration, and when disrupted, its deleterious effects accumulate. Similarly, chronic, unregulated stress can erode systems involved in memory and regulation, while adaptive stress responses may support resilience (McEwen, 2017).

Social Engagement

Cognitive functioning is also associated with social interactions and is embedded in interpersonal relationships. Social interaction requires attention, memory, and emotional processing; it is a form of cognitive engagement. Isolation is associated with worse cognitive outcomes, whereas meaningful relationships appear protective (Fratiglioni et al., 2004). This has been further illustrated in research examining social isolation during the COVID-19 pandemic, where reduced interaction was associated with cognitive decline and increased engagement corresponded with improvement (Ingram et al., 2021).

Conclusion

From a developmental perspective, these influences unfold over time, shaping vulnerability and resilience. Early experiences lay a foundation, midlife introduces compounding pressures, and by older adulthood these patterns become more visible. In clinical practice, with the introduction of biomarkers, we are to see an increased prevalence of diagnosed early-onset (i.e., prior to age 65) neurodegenerative disease processes. Disease-modifying therapies, such as lecanemab and donanemab, have demonstrated encouraging outcomes in modifying the disease course of Alzheimer's disease (van Dyck et al., 2023), but limitations remain . While promising, these therapies are not curative, not appropriate for all patients, and are most effective when symptoms are mild. Therefore, modifiable lifestyle factors may determine candidacy for such therapies. If intervention depends on early detection, then everything that precedes it becomes more, not less, essential.

There is also a broader issue that cannot be ignored. It is easy to frame cognitive health as a matter of personal responsibility, with standard recommendations such as exercise, diet, and stress management; however, access to these recommendations is not equal. Socioeconomic factors, healthcare access, education, and health literacy shape outcomes in ways that are often

understated (Livingston et al., 2020). Recommendations need to be tailored to the individual and their circumstances, considering cultural factors, barriers to care, and available resources (Hall et al., 2015). At the same time, cognitive aging is increasingly reduced to diagnoses and biomarkers. While nosology has its benefits, a disease-centric view risks narrowing the clinical picture and opportunities for preventative measures.

Cognitive health is not just the absence of disease; it is the ability to think clearly, adapt, maintain relationships, and remain engaged with life. Conceptualizing cognitive aging in this light shifts the focus. It becomes less about reacting to decline and more about recognizing the patterns that are built over time, whether they contribute to decline or help avoid, prevent, or delay it, allowing for meaningful changes along the way. The aforementioned modifiable lifestyle factors may matter more than any single intervention. The goal is not to stop aging, as that is neither realistic nor necessary. The goal is to influence its trajectory by building a foundation that is stable enough to endure change and flexible enough to adapt to it. Cognitive health does not begin at retirement. The sooner we can accept this notion, the more seriously we can approach the task of not just living longer, but maintaining meaningful, deliberate engagement with life.

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