

# natureOUTLOOK

## COGNITIVE HEALTH

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Herb Brody,  
Michelle Grayson,  
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From superfoods to brain training, the Internet is full of advice on how to improve cognitive health and boost brain power. Yet anyone curious enough to dip into the scientific literature will find a complicated picture behind the claims. There are seemingly contradictory studies, and gaps in our knowledge. This Outlook touches on a number of areas concerning how researchers are working to preserve or enhance this most human of faculties.

It is an unavoidable fact of life that cognition worsens as we age. For most people, this decline is imperceptible and gradual, whereas for others it is more rapid. Several approaches could prevent or even reverse the decline: common drugs, including an asthma medication (S4), and interventions to increase social interaction (S14) are both showing promise.

Some researchers go further and think that it is possible to gain cognitive benefit in youth. But claims about brain training are controversial: results vary widely and even meta-analyses come to contradictory conclusions about effectiveness (S10).

If brain training doesn't work, at least all that's lost is time. Other approaches carry real risks. Transcranial direct-current stimulation aims to activate the brain by applying a burst of electricity, and its simplicity has spawned a do-it-yourself subculture. Although the technique has therapeutic potential, it is far from clear how it works — and zapping the brain is not to be taken lightly (S6). Similarly, the rise in the use of smart drugs has many people worried (S2). But there could be one safe way to improve cognitive performance: let our technology be a benefit instead of a distraction (S9).

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**Michelle Grayson**  
*Senior editor, supplements*

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