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Mindfulness Disposition and Default-Network Connectivity in the Aging Brain

Washington, DC - The aging of the baby boomers has led to an escalation of research identifying preventative strategies to counter the decline in mental faculties of the elderly population. Researchers at Ohio State University and University of Illinois examined if higher levels of mindfulness disposition in older adults was associated with an increased connectivity of the resting-state brain. Mindfulness is a multi-faceted construct that has been gaining increasing popularity both among researchers and general public and involves self-regulatory attentional control to direct resources to the present moment experience. By doing so, the richness of the events in the present moment is enhanced, possibly resulting in greater processing of the attributes of the current experience.

Employing novel methodologies in functional magnetic resonance imaging, Ruchika Prakash, PhD, and her colleagues examined firstly, differences between the functional connectivity, or the cross-talk between different brain regions in older and younger adults during rest. They investigated the connections in a critical network of the brain, namely the “default-mode network,” which has been extensively studied in the last decade for its critical role in attentional control and executive functioning. Prakash and her colleagues will present the study titled *Mindfulness Disposition and Default-Network Connectivity in the Aging Brain* at the Society of Behavioral Medicine’s 32nd Annual Meeting and Scientific Sessions on Saturday, April 30 at the Washington Hilton in Washington, DC.

Comparing older and younger adults in their study, they found the brains of older adults to show reduced connections in the different regions comprising the brain network. That is, when younger adults were compared to older adults in terms of the number of connections between regions of this network, younger adults had more stronger and well-connected regions of the brain than older adults. Given that this network has been implicated in the past for its role in cognitive function, and enabling consolidation of information suggests a critical role for this network, and thus lifestyle factors that might be associated with increasing the integrity of this network in the aging population could be simple and cost-effective ways of possibly enhancing cognition, specifically attentional control.

In a first attempt to address this, Prakash and her colleagues cross-sectionally examined if an association existed between higher levels of mindfulness disposition in older adults and increased connections of the default-mode network regions. They indeed found support for a positive relationship between higher mindfulness capacity and enhanced integrity of this network in older adults. This study, though not implying causation, suggests a relationship between higher mindfulness and a critical network of the brain. Future randomized controlled trials examining causally if training in mindfulness abilities can benefit these networks of the aging brain are under way.

Ruchika Shaurya Prakash, PhD, is an Assistant Professor at the Department of Psychology at the Ohio State University and her collaborators on this project were Angeline DeLeon, BS, at Ohio State University and Art Kramer, PhD, at University of Illinois.

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