MEDIA RELEASE
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Walkable cities good for ageing brains, study finds

The simple act of crossing a road could help shield the brain from dementia and other cognitive conditions new research, that analysed brain imaging data from more than 500 people, has found.

A joint study from the Australian Catholic University and UNSW Sydney's Centre for Healthy Brain Ageing (CHeBA) found people who lived in cities and frequently crossed intersections or relied on complex navigational skills had larger hippocampal tails.

The hippocampal tail is part of the hippocampus, or memory centre of the brain, and is involved in spatial memory and navigation. Rapid shrinking of the hippocampal tail in older adults, together with impaired spatial navigation, can be early signs of Alzheimer's disease, the leading cause of dementia.

Led by ACU's Dr Govinda Poudel and published in *Nature Cities*, the study analysed brain imaging data from more than 500 older Sydney residents involved in the CHeBA's Sydney Memory and Ageing Study.

It found the brain structure of residents, aged 70 to 90, living in highly connected neighbourhoods had larger hippocampal tails.

"According to our research into the cognitive impact of urban environments, the more an older adult exercises memory and spatial tasks, the healthier and more protective their brain becomes," Dr Poudel, a neuroscientist with ACU's Mary MacKillop Institute for Health Research (MMIHR), said.

"Older adults who live in complex urban environments, especially walkable cities, tended to have larger hippocampi since they are more likely to engage the part of the brain responsible for cognitive mapping and spatial navigation.

"For instance, residents of walkable cities are more likely to cross multiple intersections, a task that might seem routine but involves a complex cognitive sequence – the tried and true 'stop, look, listen and think' that we all learn as children."

Dr Poudel said the joint research into the cognitive effect of neighbourhoods on older Australians was consistent with studies into the brains of London taxi drivers, who are expected to memorise a mind-boggling 25,000 streets, which showed they had larger hippocampi due to having intense navigational and memorisation demands.

Another study from Harvard University showed taxi and ambulance drivers were less likely to die from Alzheimer's disease, compared with other occupations.

"Our findings raise the possibility that older adults who perform navigational and spatial processing tasks frequently might increase their protection against Alzheimer's disease," Dr Poudel said.

Leading behavioural scientist with MMIHR and a study co-author Professor Ester Cerin said the research could provide support for urban planning concepts such as walkable cities or the 20-minute neighbourhood.

“Our findings suggest that complex, interconnected neighbourhoods not only encourage active living and utilitarian walking, as widely reported, but also support brain health throughout later life,” Professor Cerin said.

CHeBa co-director and study co-author Professor Perminder Sachdev said the findings suggest creating walkable, cognitively engaging neighbourhood layouts could be a population-level strategy to support brain resilience and independence as societies become older.

Dr Vibeke Catts, CHeBA research manager and co-researcher, said by tracking the same participants over 13 years, the study has created a uniquely valuable dataset.

“It’s exciting to see this work continue to deliver new insights into how we can support good brain health as we age,” Dr Catts said.

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