

Can amyloid plaque in Alzheimer's disease affect remote regions of the brain?

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In Alzheimer's disease, accumulation of amyloid plaque in the brain is believed to play an important role in many characteristic disease symptoms, including memory loss and other mental state changes. But how these plaque deposits affect brain function is not well understood. Important new study results showing that plaque buildup in one area of the brain can negatively affect metabolism in a more distant brain region have been published in *Brain Connectivity*.

As part of a special issue focused on Alzheimer's disease, Elisabeth Klupp and coauthors, Technische Universität München (Munich and Garching, Germany) and University Hospital of

Cologne, Germany, present the results of an imaging-based study demonstrating that amyloid buildup in one brain region can impair brain cell metabolism and activity another in remote brain region not affected by [amyloid plaque](#) accumulation. The regions studied were part of the same functional network but are located remotely from each other in the brain. The authors suggest this long-distance effect may be the result of diminished neuronal signals originating from the amyloid-affected brain region to the remote amyloid-unaffected brain region. The findings are discussed in the article "In Alzheimer's Disease, Hypometabolism in Low-Amyloid Brain Regions May Be a Functional Consequence of Pathologies in Connected Brain Regions."

"This research may be an important new discovery that links two important hypotheses in Alzheimer's disease research: the amyloid buildup hypothesis and the network degenerating hypothesis," says Christopher Pawela, PhD, Co-Editor-in-Chief and Assistant Professor, Medical College of Wisconsin.

More information: The article is available free on the *Brain Connectivity* website at online.liebertpub.com/doi/full/1089/brain.2013.0212 until August 21, 2014.

Provided by Mary Ann Liebert, Inc

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