

New research shows neuroprotective effect of lovastatin

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High cholesterol levels are considered to be a risk factor for cardiovascular disease including stroke. Therefore, many cholesterol lowering drugs have been developed by pharmaceutical companies in recent years. One class of these drugs, statins, has been found to reduce the incidence of stroke and progression of Alzheimer's disease when prophylactically administered.

In a recent paper published in the *Journal of Alzheimer's Disease*, Amalia Dolga and co-workers from the University of Groningen show that the statin lovastatin, in addition to lowering cholesterol, can also prevent nerve cells from dying in conditions that occur in Alzheimer's disease.

Amalia Dolga discovered a previously unknown cascade of cellular signals in nerve cells that are responsible for this neuroprotective mechanism. This is an important finding because in many diseases such as Alzheimer's or Parkinson's, death of nerve cells is generally thought to be a major cause of the dramatic symptoms that we find in these diseases.

Amalia Dolga found that statins stimulate nerve cells to produce a specific receptor molecule for a protein which plays a central role in the body's immune response: Tumor Necrosis Factor-alpha. Previous studies conducted by Dr. Ulrich Eisel's group in the Department of Molecular Neurobiology (headed by Prof. Paul Luiten) have demonstrated that this specific TNF-alpha signaling pathway has a strong beneficial effect on nerve cells and can protect nerve cells against death. This finding now

demonstrates that a widely given drug like a statin can activate this protective pathway.

Source: IOS Press

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