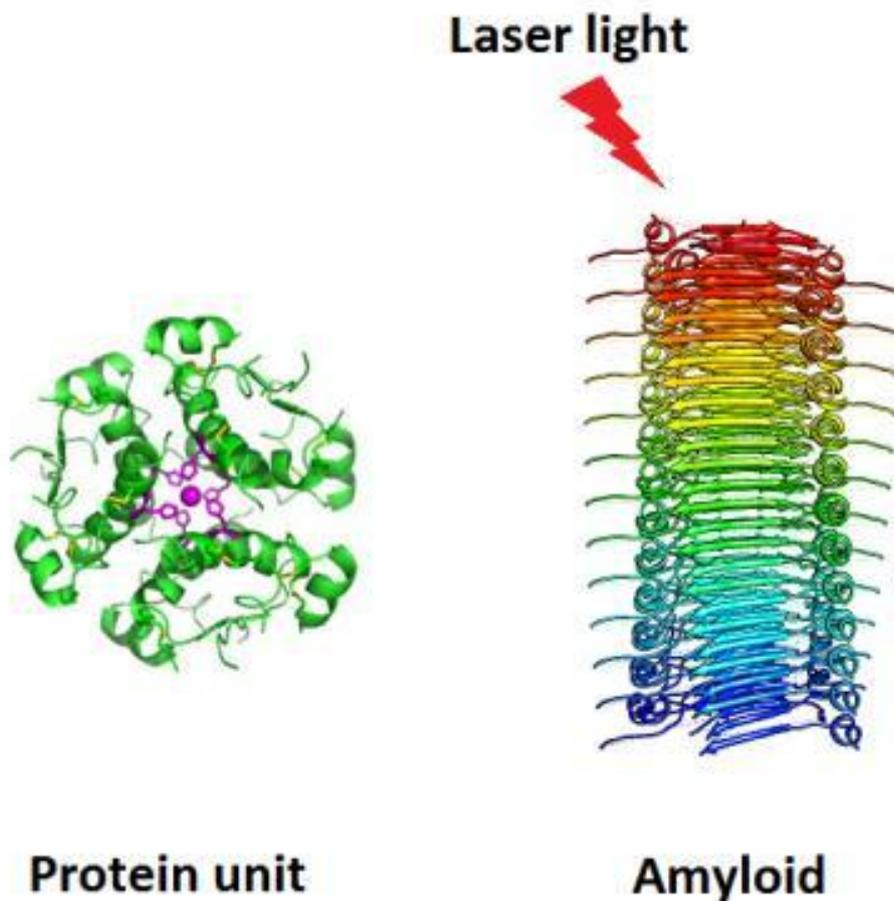


Lasers Might Be the Cure for Brain Diseases

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Researchers at Chalmers University of Technology in Sweden, together with researchers at the Polish Wroclaw University of Technology, have made a discovery that may lead to the curing of diseases such as Alzheimer's, Parkinson's and Creutzfeldt-Jakob disease (the so called mad cow disease) through photo therapy.

The researchers discovered, as they show in the journal *Nature Photonics*, that it is possible to distinguish aggregations of the proteins, believed to cause the diseases, from the the well-functioning proteins in the body by using multi-photon laser technique.

"Nobody has talked about using only light to treat these diseases until now. This is a totally new approach and we believe that this might become a breakthrough in the research of diseases such as Alzheimer's, Parkinson's and Creutzfeldt-Jakob disease. We have found a totally new way of discovering these structures using just laser light", says Piotr Hanczyc at Chalmers University of Technology.

If the protein aggregates are removed, the disease is in principle cured. The problem until now has been to detect and remove the aggregates.

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Published on Medical Design Technology (<http://www.mdtmag.com>)

The researchers now harbor high hopes that photo acoustic therapy, which is already used for tomography, may be used to remove the malfunctioning proteins. Today amyloid protein aggregates are treated with chemicals, both for detection as well as removal. These chemicals are highly toxic and harmful for those treated.

With multi photon laser the chemical treatment would be unnecessary. Nor would surgery be necessary for removing of aggregates. Due to this discovery it might, thus, be possible to remove the harmful protein without touching the surrounding tissue.

These diseases arise when amyloid beta protein are aggregated in large doses so they start to inhibit proper cellular processes.

Different proteins create different kinds of amyloids, but they generally have the same structure. This makes them different from the well-functioning proteins in the body, which can now be shown by multi photon laser technique.

Source URL (retrieved on 10/30/2014 - 10:05am):

<http://www.mdtmag.com/news/2013/11/lasers-might-be-cure-brain-diseases>