

# Sphingolipid metabolism in the pathophysiology and treatment of Alzheimer's disease

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## Statements

1. “The glia have developed numerous fibres; further, many glia include adipose inclusions”. (Alois Alzheimer)
2. There is an increasing body of evidence linking sphingolipid metabolism to Alzheimer’s disease pathophysiology: ceramide levels are elevated.
3. Notably, multiple studies of different populations and methodologies suggest that elevated blood ceramides are associated with an increased risk of Alzheimer’s disease and progression of cognitive decline. (Michelle Mielke)
4. Ceramide transport from the endoplasmic reticulum to the *trans*-Golgi apparatus plays a key role in ceramide accumulation in the brain of Alzheimer’s disease mouse models. (*in this thesis*)
5. Ceramide transfer protein overexpression in the brain reduces inflammation in a mouse model of Alzheimer’s disease. (*in this thesis*)
6. Ceramide analogs, like HPA-12, have a higher brain uptake in mice with Alzheimer’ disease compared to healthy mice. (*in this thesis*)
7. Counteracting ceramide elevation in the brain by administering protective sphingolipid molecules like sphingosine analogs prevents memory impairment and anxiety-like behavior in an Alzheimer’s disease mouse model. (*in this thesis*)
8. The final results appear almost simple [...]; but the years of searching in the dark for a truth that one feels, but cannot express; the intense effort and the alternations of confidence and misgiving, until one breaks through to clarity and understanding, are only known to him who has himself experienced them. (Albert Einstein)
9. Organic chemistry is the child of medicine, and however far it may go on its way, with its most important achievements, it always returns to its parent. (Ludwig Thudichum)
10. One thing only I know, and that is that I know nothing. (Socrates)