

# Dementia and Alzheimer's Disease

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## Is Alzheimer a runaway Autoimmune disease?

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There are approximately 400 known neurological diseases, some of which classified as mental disorders. A number of these disorders are mediated by a disruption or failure of the blood brain barrier. Unfortunately, the convergence between the barrier studies and clinical investigations has historically been limited. There is evidence of inflammatory signaling at the brain barriers that may be an important part of the body's response to damage or infection. This signaling system appears to change both with normal aging and during disease. Changes may affect organic phenomena (or diapedesis) of immune cells and active molecular transfer, or cause rearrangement of the tight junctions and an increase in passive permeability across barrier interfaces. While palliative treatments are available, neurodegenerative disorders in general, and Alzheimer in particular, have generally been declared as incurable. The reason is that we have not yet been able to identify the etiology and deep biology of their root cause(s). I will posit that the disruption of the blood brain barrier is part of the etiology

of the disease. I will further submit that the root cause of the disease is the brain's autoimmune system having gone rogue in its unsuccessful attempts to maintain brain homeostasis between the antagonistic synaptoblastic and synaptoclastic pressures. For a cure, I will lastly advocate balancing these pressures by regulating the autoimmune system rather than fiercely combating either the hyper-excited synaptoblastic pressures or/and suppressing the synaptoclastic ones by employing molecules that can induce an immune response (antigens) or engineered immune cells that can train the autoimmune system to tolerate the process or tissue it is on track to damage. This idea has the potential to cure a range of autoimmune disorders, including especially neurological and neurodegenerative disorders and especially Alzheimer. Caution must nonetheless be exercised as deploying the immune system to treat certain diseases can also potentially trigger other autoimmune diseases, e.g., in the case of cancer, it may additionally trigger rheumatoid arthritis and colitis.

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