



## 2020 IMPACT CIRCLE

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**Developing biomarkers for human clinical trials to lower Advanced Glycation Endproducts (AGEs) in cases of diabetic pathologies, dementia and obesity.**

Aging and hyperglycemia are a major risk factor for the onset of several age-related diseases including diabetes, cardiovascular and neurodegenerative diseases in humans. Diabetes almost doubles the risk of death and onset of Alzheimer's disease. However, there is a lack of therapeutics and biomarkers to target these risk factors in humans.

The mechanism of this increase in mortality and enhanced risk of dementia are not currently understood. We believe that AGEs, a form of molecular damage in which distorted sugars attach themselves to proteins and DNA, are a driving force in causing several diabetic pathologies and dementia. AGEs accumulate with age and hyperglycemia. Thus, to develop viable therapeutics that lower AGEs we need to develop a panel of biomarkers that can report the status of AGEs in humans.

We hypothesize that we can develop a set of biomarkers that will identify appropriate patients in whom a cocktail of therapeutics that lower AGEs will be effective in reducing the risk of dementia and diabetic pathologies.