

# Glycation Reaction: Key solution of the Major cause of aging and metabolic syndromes

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Advanced glycation end products (AGEs), the products of nonenzymatic glycation and oxidation of proteins and lipids, accumulate in diverse biological settings and leading to be risk and cause of many diseases, such as diabetes, cardiovascular diseases, vessels-related diseases as nephropathy, neuropathy and retinopathy, inflammation, renal failure, cancer,aging and neurodegenerative diseases. AGEs have multiple potential effects on the vessels and tissues including neuronal cells.

Advanced glycation end products (AGEs) contribute to cognitive decline which encourage the formation and deposition of neurofibrillary tangles and amyloid plaques, the hallmarks of Alzheimer's Disease. Higher levels of AGEs associate with accelerated memory decline in individuals with both normal cognition and mild cognitive impairment.

The N $\epsilon$ -(carboxymethyl)-lysine (CML) is an advanced glycation end product formed on protein by combined nonenzymatic glycation and oxidation (glycoxidation) reactions. CML may be a general marker of oxidative stress and long term damage to protein in aging, that associated with severity of atherosclerosis, diabetes and cognitive impairment in people with cerebrovascular disease, suggesting a relationship between AGEs and vascular dementia.

To increase longevity, not only increase life span, not only make external appearance younger, but good quality of life should be concerned and also cognitive function to achieve quality of longevity in all dimensions.

In our study, we summarized results of serum CML measurement from 30 patients ,having risk of AGEs impact as diabetic patients between age of 40 years to 60 years. The GPCOG Screening Test were performed in these patients.

There are significant correlation between mild cognitive decline and high level of CML.

AGEs management in multi dimension as nutrition ,exercise, social participation, brain exercise program and AGEs management with deglycating molecule or AGE-crosslinks breaking molecule can be the application and the new solution in Antiaging practice for prevention and promotion good quality longevity.Our study is only preliminary study we need more population in future study to have more significant result.