Kyolic New Research Highlights

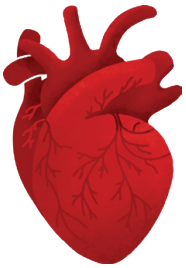
From *International Garlic Symposium 2019*
Hiroshima, Japan

Cardiovascular Research

Dr. Matthew Budoff, MD, Cardiologist and Professor at Harbor-UCLA presented a review on the cardiovascular benefits of garlic. Some of the big takeaway messages are:

A significant and growing body of research exists showing that Aged Garlic Extract™ (A.G.E.) can support heart health in a number of ways, including:

- lowering total and LDL cholesterol
- reducing blood pressure
- reducing inflammation (reducing CRP, TNF-alpha and IL6)
- reducing coronary artery calcification
- improving endothelial function
- reducing epicardial adipose fat

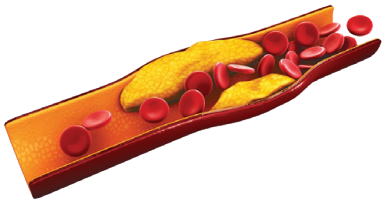


"A.G.E.™ can offer several benefits for those with obesity, insulin resistance and heart disease."

One of the newer areas being researched is the impact of A.G.E.™ on epicardial adipose tissue. This is the deep visceral (belly) fat that is concerning as it is highly correlated with heart disease risk as well as insulin resistance and type 2 diabetes. A study conducted by Zeb et al. demonstrated that A.G.E.™ taken over 12 months can reduce epicardial adipose tissue by 37%. Reference: Zeb et al. Coron Artery Dis. 2018 *https://www.ncbi.nlm.nih.gov/m/pubmed/29140808/*

This is significant because it demonstrates that A.G.E.™ can offer several benefits for those with obesity, insulin resistance and heart disease, which is a large segment of our population.

Aged Garlic Extract™ and Atherosclerosis Progression



Dr. Sandra Lindstedt, MD, Associate Professor and Consultant in Cardiothoracic Surgery at Skane University Hospital, Sweden presented research showing that A.G.E.™ can reduce the coronary artery calcification (CAC) progression and lower inflammatory biomarkers. Her research shares similar findings to studies done by Matthew Budoff but it was the first study done in a European population with moderate risk of cardiovascular events.

CAC is important because it is a predictor of cardiovascular events. This new study looked at both CAC scores and inflammatory biomarkers in a group of patients with a Framingham risk score of greater than 10 (moderate risk for CV events). They were given 2400 mg of A.G.E.™ or placebo daily for one year. The results showed a significant reduction in CAC scores, blood glucose and inflammatory biomarkers (IL6). Blood pressure was also reduced by an average of 8 points.

"A significant reduction in CAC scores, blood glucose and inflammatory biomarkers."

Kyolic®
Aged Garlic Extract™
www.kyolic.ca

Kyolic New Research Highlights

From *International Garlic Symposium 2019*
Hiroshima, Japan

Aged Garlic Extract™, the Gut Microbiota and Cardiovascular Health

Dr. Karin Ried, Associate Professor at the National Institute of Integrative Medicine in Melbourne, Australia presented a study that looked at the impact of A.G.E.™ on gut microbiotic, inflammation and cardiovascular health in a group of 49 patients with uncontrolled hypertension.

"A.G.E.™ was effective in improving the gut microbiota as well as reducing arterial stiffness, inflammation and blood pressure."

It had been theorized that A.G.E.™ may benefit the gut microbiota because garlic is a prebiotic and sulfur donor, it helps mucus formation and improves the gut biofilm.

Participants were given 1200 mg of A.G.E.™ or placebo for 12 weeks. It was demonstrated that A.G.E.™ was effective in improving the gut microbiota as well as reducing arterial stiffness, inflammation and blood pressure.

Effect of Aged Garlic Extract™ on Arterial Elasticity

"A.G.E.™ has a very positive effect on both blood pressure and arterial stiffness."

Dr. Joerg Gruenwald, PhD from Germany conducted a study to assess the effects of A.G.E.™ on blood pressure and arterial elasticity. This study involved 57 subjects using a dosage of 2 ml of A.G.E.™ liquid and was conducted over 12 weeks. EndoPat technology was used to measure arterial pulse, which is an assessment of endothelial function. Blood pressure was also measured. It was concluded that A.G.E.™ has a very positive effect on both blood pressure and arterial stiffness. There were no side effects related to treatment.

Cognitive Benefits of Aged Garlic Extract™

Alzheimer's disease and dementia are marked by inflammation and the development of beta-amyloid plaques in the brain. It is theorized that A.G.E.™ may offer benefits for slowing this process due to its antioxidant and anti-inflammatory benefits.

"A.G.E.™ improved both short-term spatial memory and working memory."

The impact of A.G.E.™ on cognitive function (learning and memory) was evaluated in an animal study conducted by Dr Sripanidkulchai and colleagues at Khon Kaen University, Thailand. Subjects were exposed to A.G.E.™ for 56 days and various tests were performed to assess learning and memory. Treatment of A.G.E.™ protected rats from beta-amyloid induced neurotoxicity and improved both short-term spatial memory and working memory.

Kyolic® Aged Garlic Extract™

www.kyolic.ca

Kyolic New Research Highlights

From *International Garlic Symposium 2019*
Hiroshima, Japan

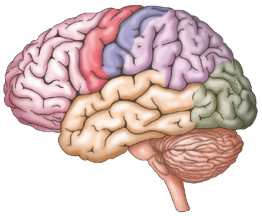
Liver Protecting Effects of Aged Garlic Extract™

Liver cancer is the seventh most common cancer and third leading cause of cancer-related death worldwide. Alcohol-induced liver damage is a primary contributor to liver cancer. Research presented by Dr. Kojima at the RIKEN Center for Integrative Medical Sciences in Wako, Japan demonstrated in cell cultures that A.G.E.™ can reduce enzyme activity associated with hepatic cell death in cells exposed to ethanol. A.G.E.™ also inhibited inflammatory responses in liver cells caused by ethanol.

"A.G.E.™ can reduce enzyme activity associated with hepatic cell death."

Dr. Kumagai, PhD at Nihon University, College of Bioresource Sciences, Japan presented a study that demonstrated that A.G.E.™ can suppress the absorption of alcohol from the gut. This may be due in part to its effects on gastric emptying time. It was also shown in this research that A.G.E.™ can accelerate alcohol metabolism by increasing the activity of liver enzymes involved in the processing of ethanol.

Neuroprotective Effects of Aged Garlic Extract™



In addition to S-allylcysteine, A.G.E.™ contains a compound, known as FruArg, which can cross the blood brain barrier where it exerts protective effects on brain cells. Research presented by Dr. Zezong Gu, Associate Professor at The University of Missouri School of Medicine demonstrated that A.G.E.™ can suppress neuroinflammation and oxidative stress in microglial cells (in-vitro). These are specialized cells in the central nervous system that work to remove damaged/dead neurons, clear infection and play a key role in the health of the brain and CNS. This research suggests that A.G.E.™ may play a possible role in protecting against neurodegenerative diseases.

"A.G.E.™ may play a possible role in protecting against neurodegenerative diseases."

Aged Garlic Extract™ and Periodontal Disease

Dr. Jonathan Mann a practicing dentist and researcher at the Hebrew University-Hadassah School of Dental Medicine in Jerusalem conducted a preliminary study to assess the impact of A.G.E.™ on gingivitis and gingival bleeding. This study involved 133 patients and compared 2400 mg of A.G.E.™ to placebo over four months. It was concluded that A.G.E.™ significantly reduced both the level of gingivitis and bleeding. Results were statistically significant and these findings warrant further research on the periodontal benefits of A.G.E.™.

"A.G.E.™ significantly reduced both the level of gingivitis and bleeding"

Kyolic®
Aged Garlic Extract™
www.kyolic.ca