blood samples collected at baseline were non-fasting) exhibited a linear association with the risk for myocardial infarction, with men in the highest quintile having an approximately 2.5 greater risk than those in the lowest quintile. Another prospective cohort study of 7,587 women and 6,394 men aged 20-39 years from Copenhagen pointed to an association of elevated non-fasting triglycerides with myocardial infarction, ischemic heart disease and death during a mean follow-up of 26 years. Hazard ratios were higher as triglycerides levels increased. Additionally, it has been reported that elevated postprandial TG is linked to an increased risk of myocardial infarction, ischemic stroke and early death in women and men in the general population.

The role of postprandial hypertriglyceridemia in the development of atherosclerosis seems to be important. There are several studies evaluating the impact of postprandial hypertriglyceridemia on carotid intima thickness in type 2 diabetic patients of various origins. The studies concluded that increased postprandial triglycerides are associated with higher IMT. Additionally, in 45 patients who underwent a standardized fatty meal test and whose triglycerides levels were subsequently measured after 2, 4, 6 and 8 hours, it was shown that high post-challenge triglycerides correlated positively with an increase in aortic pulse wave velocity (aPWV) 6 hours after the fatty meal consumption and, specifically, a 0.88 m/s rise of aPWV was found for a 100mg/dl increase in triglycerides.

Waist circumference, which is an index of central obesity, constitutes a well-recognized cardiovascular risk factor in hypertensive patients and has also been reported to be associated with such conditions as, inter alia, idiopathic portal vein thrombosis, asthma in children and adolescents and uncontrolled asthma in women, non-alcoholic liver disease and dementia. Oka et al conducted a study including 1,505 men and 798 women who were not taking medications for diabetes or dyslipidemia. Both fasting and 2-hours postprandial TG levels were measured and a possible association with waist circumference was tested. The results showed that waist circumference had a stronger association with postprandial TG than fasting TG. This finding may suggest that postprandial hypertriglyceridemia plays a role in many pathologic conditions related to central obesity.

### PATHOPHYSIOLOGY OF POSTPRANDIAL DYSMETABOLISM INDUCED CARDIOVASCULAR COMPLICATIONS

The main pathophysiologic mechanisms participating in development of cardiovascular damage are endothelial dysfunction and oxidative stress, activation of inflammation and coagulation, and penetration of lipoprotein particles in the arterial wall (Figure 3).

Endothelial dysfunction is an early process in the development of cardiovascular disease and is defined as a reduced response to vasodilatory stimuli. It has been shown that postprandial hyperglycemia and hyperlipidemia is associated with increased production of reactive oxygen species (ROS) leading to increased oxidative stress, which subsequently leads to endothelial dysfunction.