Arachidonic acid (AA) metabolites have an important role in mediating vascular reactivity to various stimuli, thus changing tissue blood flow and tissue supply. In addition, they have proinflammatory or anti-inflammatory effect on vessels. AA is metabolized by cyclooxygenases 1 and 2 to prostaglandins and thromboxane, by lipoxygenase to leukotrienes; by CYP450-hydroxilase to 20-hydroxyeicosatetraenoic acid (20-HETE) and by CYP450-epoxygenase to epoxyeicosatrienoic acids (EETs). Increased vascular oxidative stress may induce non-enzymatic production of isoprostanes from AA, which, together with vasoconstrictor metabolites of AA underlie to endothelial damage and impaired vascular function.

Dietary kitchen salt intake leads to impairment of the vascular reactivity to physiological stimuli, both in conduit and in microcirculatory vessels, even with normal arterial blood pressure levels. Our results in animal and human studies show that increased salt intake significantly changes type and the amount of produced AA metabolites, leading to impaired vascular function. On the other hand, omega-3 fatty acids (FA) have protective role in cardiovascular system, supposedly due to decreased production or effects of the AA metabolites. Thus, diets rich in omega-3 FA, especially omega-3 enriched foodstuff and low in kitchen salt is the most natural way in cardiovascular health protection.