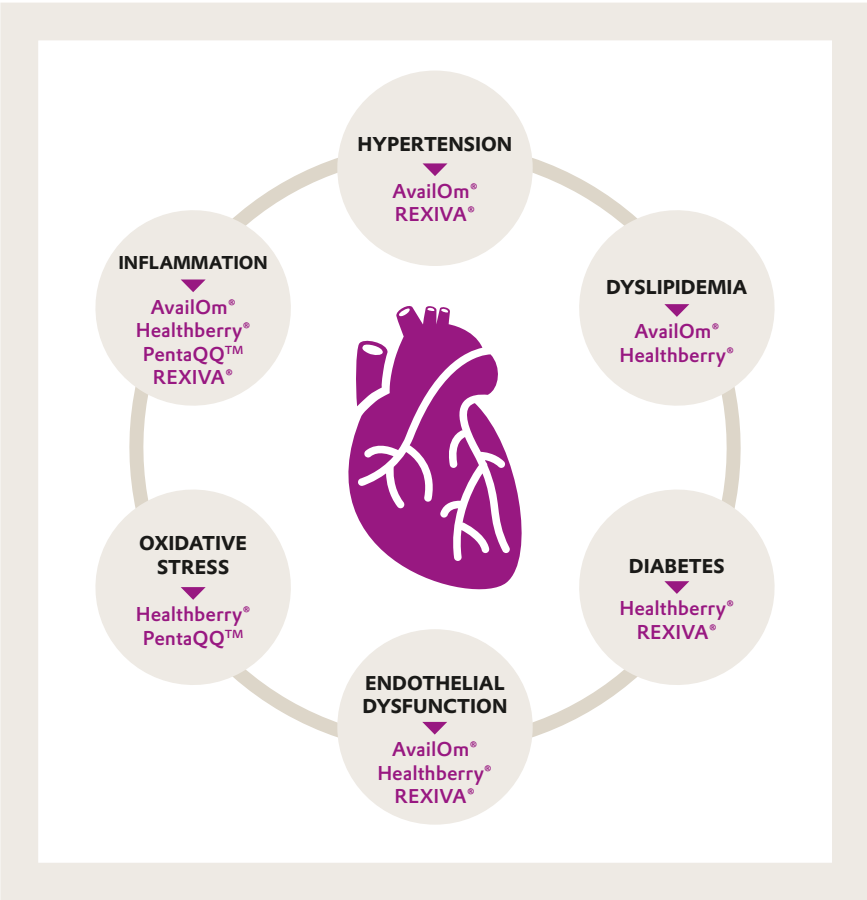


Evonik's solutions for cardiovascular health:

Dietary supplements, functional foods and beverages may conveniently add a healthy plus to our busy lives. Particularly cardiovascular risk factors such as elevated blood lipids and hypertension can be modified by choosing the right ingredients. With its formulation

services, Evonik offers a broad range of standard delivery forms, standard release profiles as well as customized support with products and profiles. Find out, how Evonik's solutions can help support your hardest working organ, the heart.



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AvailOm® – reg. trademark of Evonik Industries AG and its subsidiaries

Healthberry® – reg. trademark of Evonik Industries AG and its subsidiaries

PentaQQ™ – trademark of Evonik Industries AG and its subsidiaries

REXIVA® – reg. trademark of Evonik Industries AG and its subsidiaries

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Cardiovascular health. Advanced nutraceutical solutions.

A range of health ingredients with proven benefits



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Health Care Business Line
Pharma & Food Ingredient

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When was the last time you thought about your heart? ... It's time to think about it again.

31% of all global deaths are related to cardiovascular diseases. By 2030, it will be over 23 million people annually (World Health Organization 2017). No wonder that 51% of consumers are very concerned about cardiovascular health.

WHAT ARE CARDIOVASCULAR DISEASES?





Cardiovascular diseases include a group of disorders affecting the heart and

blood vessels such as heart attack and stroke. They are mostly caused by a gradual narrowing or blockage of blood vessels, a process called atherosclerosis.

Atherosclerosis is often initiated by an injury to the endothelium, the inner lining of the blood vessels. Endothelial damage can be triggered by oxidative stress, elevated lipids, diabetes and other cardiovascular risk factors.

What WE can do for your cardiovascular health:

Evonik offers high quality and scientifically sound cardiovascular health ingredients opening a world of possibilities for enhancing existing food lines and creating new, targeted nutraceutical solutions.

	 REXIVA* L-Arginine salts	 Healthberry* 865 Anthocyanin-rich extract	 AvailOm* Omega-3 Lysine complex	 PentaQQ™ Pyrroloquinoline quinone
HYPERTENSION High blood pressure.	Improvement of blood pressure		Improvement of blood pressure	
DYSLIPIDEMIA Abnormal amounts of lipids in blood; mostly manifested by elevated LDL cholesterol and triglycerides and decreased HDL cholesterol.		LDL cholesterol reduction*; HDL cholesterol increase*	Triglyceride reduction; Increase in HDL cholesterol	
INFLAMMATION The body's natural response for protecting itself against harm. Inflammation is self-limiting but can become chronic in response to factors such as obesity or high blood glucose. Chronic low-grade inflammation has been linked to CVD.	Potential anti-inflammatory effects	Anti-inflammatory effects*	Anti-inflammatory effects	Potential anti-inflammatory effects
OXIDATIVE STRESS An accumulation of free radicals having detrimental effects on cellular functions. Oxidative stress has been implicated in the development of many diseases including cardiovascular diseases.	Potential antioxidant effects	Antioxidant effects*		Redox cofactor acting as cellular antioxidant
ENDOTHELIAL DYSFUNCTION A condition of the inner lining of blood vessels characterized by a reduced ability of the arteries to dilate properly. Endothelial dysfunction is said to be the initial step of atherosclerosis.	Vasodilatory effect; Improvement of vascular function and blood flow	Vasodilatory effect*; Improvement of vascular function and blood flow	Vasodilatory effect; Reduction of arterial stiffness; Improvement of vascular function and blood flow	
DIABETES A metabolic disease characterized by elevated blood glucose levels resulting from defects in insulin secretion, insulin action, or both. Persistently elevated blood glucose levels can have pernicious effects on the vasculature/ blood vessels.	Potential benefits for insulin and glucose metabolism	Improves glucose metabolism* (e.g. reduction of fasting glucose and HOMA-IR)		

* data from randomized, controlled, proprietary human intervention studies with Healthberry*/MEDOX*

LDL – low density lipoprotein, HDL – high density lipoprotein
HOMA-IR – homeostatic model assessment - insulin resistance

WHAT YOU CAN DO FOR YOUR CARDIOVASCULAR HEALTH:



Eat five servings of fruits and vegetables a day. Choose whole grain products. Eat fish once a week for your Omega-3 balance. Reduce the use of salt.



Replace saturated fats with unsaturated fats.



Practice regular physical activity.



Don't smoke and limit alcohol consumption.



Taking specific nutraceuticals including health ingredients from Evonik?