

## THE ROLE OF ANTIOXIDANTS IN THE PREVENTION OF CARDIOVASCULAR DISEASE

**Predrag Vukomanović<sup>1\*</sup>, Bojana Petrović<sup>1</sup>, Branislava Daskalović<sup>2</sup>,  
Marija Vukomanović<sup>3</sup>**

<sup>1</sup>Medical Sanitary School of Applied Sciences “Visan”, Department of Pharmacy,  
Belgrade, Serbia

<sup>2</sup>Hemofarm AD, Belgrade, Serbia

<sup>3</sup>Parexel International ltd., Belgrade, Serbia

\*peca.vukomanovic@gmail.com

Cardiovascular diseases (CVD) are the leading cause of death and disability worldwide, with a greater impact on the quality of life and shortening life expectancy. Owing to the organized preventive measures, there has been a reduction in CVD mortality rates in developed countries. Over the past few decades, epidemiological studies have shown that the intake of fruits and vegetables, which are rich in vitamins and antioxidants, significantly reduces the risk of CVD and has a protective role in their prevention. Oxidative stress has been linked to the pathogenesis of many CVD diseases (ischemic heart disease, atherosclerosis, hypercholesterolemia, diabetes, and hypertension). LDL in the subendothelial space, under conditions of oxidative stress, undergoes oxidation, resulting in its oxidized form, which is one of the key molecules in the promotion of the inflammatory process in the blood vessel wall. Antioxidants protect cells in various ways, by blocking the initial synthesis of free radicals, eliminating existing free radicals, repairing cell damage, or inhibiting apoptotic cell death. The most important antioxidants: selenium, vitamin E,  $\beta$ -carotene, vitamin C, carotenoids, flavonoids, and other plant polyphenols (1) are the body's basic defense against the negative effects of free radicals. Their concentration in the body depends on a diet that must be varied and balanced to meet daily needs. In cases of malnutrition, malabsorption, or increased needs, dietary supplements and pharmaceutical preparations are recommended. However, all antioxidant preparations, including those for the prevention of cardiovascular diseases, should not be a substitute for proper nutrition and a healthy lifestyle (2).

### References

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## ULOGA ANTIOKSIDANASA U PREVENCIJI KARDIOVASKULARNIH BOLESTI

**Predrag Vukomanović<sup>1\*</sup>, Bojana Petrović<sup>1</sup>, Branislava Daskalović<sup>2</sup>,  
Marija Vukomanović<sup>3</sup>**

<sup>1</sup>Visoka zdravstveno-sanitarna škola strukovnih studija "Visan", Odsek za Farmaciju,  
Beograd, Srbija

<sup>2</sup>Hemofarm AD, Beograd, Srbija

<sup>3</sup>Parexel International d.o.o, Beograd, Srbija

\*peca.vukomanovic@gmail.com

Kardiovaskularne bolesti (KVB) su vodeći uzrok smrti i invaliditeta širom sveta, pogoršavaju kvalitet života, ekonomski slabe naciju, i skraćuju očekivanu dužinu života. Zahvaljujući organizovanim preventivnim merama, došlo je do smanjenja stopa mortaliteta od KVB u razvijenim zemljama. Tokom proteklih nekoliko decenija, epidemiološke studije su pokazale da unos voća i povrća, koje je bogato vitaminima i antioksidansima u značajnoj meri smanjuje rizik od KVB i ima zaštitnu ulogu u njihovoj prevenciji. Oksidativni stres je doveden u vezu sa patogenezom mnogih bolesti KVS (ishemijske bolesti srca, ateroskleroza, hiperholesterolemija, dijabetes i hipertenzija). LDL u subendotelnom prostoru, u uslovima oksidativnog stresa, podleže oksidaciji, pri čemu nastaje njegov oksidovani oblik, koji predstavlja jedan od ključnih molekula u promociji zapaljenskog procesa u zidu krvnog suda. Antioksidansi, glavni akteri antioksidativne zaštite na različite načine štite ćelije, blokiraju inicijalnu sintezu slobodnih radikala, eliminišu već postojeće slobodne radikale, popravljaju ćelijska oštećenja ili inhibiraju apoptotsku smrt ćelije. Najznačajniji antioksidansi: selen, vitamin E, β-karoten, vitamin C, karotenoidi, flavonoidi i drugi biljni polifenoli (1) predstavljaju osnovnu odbranu organizma od negativnih efekata slobodnih radikala. Njihova koncentracija u organizmu zavisi od ishrane koja mora biti raznovrsna i izbalansirana da bi se zadovoljile dnevne potrebe. U slučajevima smanjenog unosa usled malnutricije, malapsorpcije, ili povećanih potreba preporučuju se dijetetski suplementi i farmaceutski preparati u čijem sastavu se nalaze pomenuti antioksidansi. Sa druge strane, svi antioksidativni preparati, uključujući i preparate u prevenciji kardiovaskularnih bolesti ne trebaju predstavljati zamenu za pravilnu ishranu, redukciju loših navika i zdrav način života (2).

### Literatura

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