

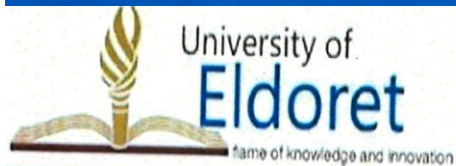


# 37<sup>th</sup> International Conference of Society for Geochemistry and Health

**SEGHS** Society for Environmental Geochemistry and Health

**Eldoret, Kenya 2022**

*Date: 10<sup>th</sup> -14<sup>th</sup> October 2022*



37<sup>th</sup> International SEGH Conference / 10-14<sup>th</sup> October 2022 / Eldoret Kenya / <http://segh.net/>



# Abstract Book

37<sup>th</sup> International Conference of Society for Geochemistry  
and Health

10 – 14th October 2022

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## **IMPROVING VASCULAR ELASTICITY AFTER STARTING TO CONSUME DRINKING WATER ENRICHED WITH Ca AND Mg, A CASE STUDY, SLOVAK REPUBLIC**

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### **Abstract**

The protective role of hard drinking water against cardiovascular diseases is well documented by numerous studies. This article describes the impact of Ca and Mg contents in the drinking water with different water hardness on the cardiovascular system (arterial stiffness, arterial age) of residents of the Slovak Republic. The research was based on the measurements of arterial stiffness, including the measurements of aortic pulse wave velocity (PWV<sub>ao</sub>) and the calculation of the arterial age of the residents. We measured vascular elasticity in three cycles. In the first cycle, we measured 100 inhabitants supplied with soft drinking water (SDW) and 100 inhabitants supplied with hard drinking water (HDW). The inhabitants supplied with SDW had a PWV<sub>ao</sub> by almost 2 m s<sup>-1</sup> and the arterial age by 14 years higher than the inhabitants supplied by HDW. We implemented the second and third cycles of vascular elasticity measurement only for respondents supplied with SDW (after half-yearly intervals), when we started to enrich the drinking water with Ca and Mg content. In the second and third cycles, we recorded an improvement in PWV<sub>ao</sub> and arterial age, always by about 20%. After one year of consumption of enriched drinking water, arterial age was improved by approximately 5 years and PWV<sub>ao</sub> by approximately 0.5 m s<sup>-1</sup>. The higher arterial stiffness and age of residents that consumed soft drinking water indicate the health significance of lower contents of Ca and Mg in drinking water as an environmental risk factor of cardiovascular diseases.