

YOUNG SCIENCE

Communicators Competition

WRITING CATEGORY

WINNER

SPILLING THE “SALT” ON A SHAKY SITUATION

Michél Strauss

It needs more salt! A common phrase uttered around the dining table of most. For what harm lies in an extra pinch of salt here or there?

Cardiovascular disease! A damaged heart and blood vessels! The mere thought of tackling a leading cause of non-transmittable disease related deaths, not only in Africa, but globally, seems overwhelming. It would appear that one needs a big solution for a big problem.

However, despite medical advances allowing for more effective pharmacological approaches to decrease cardiovascular disease, it remains a stumbling block in areas where poverty or limited access to health care prevails.

For thousands of years salt, an ionic compound comprised of sodium and chloride, has been used as a preservative and seasoning agent in food. While accessibility to processed foods have attributed to an increase in dietary salt intake, the sodium content of several staple foods, including bread, cereals and margarine, have also been identified as being excessively high.

Despite the already high sodium content of processed foods many of us still have the habit of adding extra salt at the table or during cooking. This leads to the question of how many South African are informed about the salt content of their food, and also the health risks associated with something as small as our habitual salt use.

Therefore more attention has been brought to achievable health strategies that will be beneficial to all - including diverse and far reaching communities.

A big solution starts with a change in small habits.

Cardiovascular risk: rubbing salt into the wound

Scary statistics from 2010 indicated that almost 1.65 million cardiovascular disease related deaths, globally, were attributed to a high salt diet. But how does that extra pinch of salt influence your cardiovascular health? And how much is too much?

Both sodium and chloride, that make up salt, play essential roles in the regulation of various physiological systems from cellular to kidney and heart function. The current recommendation from the World Health Organization (WHO) is less than 5 grams of salt per day. The global salt intake is however, almost double this amount. In South Africa the daily salt intake is approximately 8.5 grams per day.

The most widely described risk associated with excessive salt intake is high blood pressure, also known as hypertension. From a pathophysiological point of view this is resultant of an increase in blood volume (water retention following high salt intake) that increases the pressure in your blood vessels. This also increases the amount of blood that returns to your heart and will be pumped through your circulation – therefore increasing your heart’s work rate. Amazingly our bodies are equipped to maintain a healthy environment via the inter-regulation of several physiological systems to once again lower this pressure and

your heart's work rate. At some point, however, these systems become dysfunctional and the protective mechanisms are lost – increasing the load on your cardiovascular system. Additionally, salt may cause blood vessels to become stiff – thereby contributing to high blood pressure. Intriguing new evidence even suggests that salt affects the gut bacteria that may play a role in hypertension development.

South Africa on the forefront: be part of the solution

With the alarmingly high salt intake and the undeniable cardiovascular risks, it is unsurprising that global leaders from the United Nations and the WHO acknowledged salt reduction as a priority. Few countries including South Africa (the first African country) have implemented mandatory sodium reduction legislation, lowering the sodium content of staple foods, in an effort to reduce daily salt intake.

Interestingly, in South Africa, a 0.85 gram salt reduction could prevent approximately 7400 strokes and heart attacks per year. Thus, South Africa is on the forefront when it comes to taking on a more sustainable solution to improve the national burden of hypertension and cardiovascular disease, of not only the wealthy but all South Africans.

Taking into consideration all of the above, our habits still remain in our hands, and it is up to us to make the cautious decision with regards to our salt use and cardiovascular health.

A little food for thought: think twice before adding that extra pinch of salt.

About Michél



Michél Strauss is currently completing her PhD degree in Physiology at North-West University. Her research is centered on gaining a better understanding of the development of cardiovascular disease, with the focus on black South African populations.

When she started her postgraduate studies she was met with the harsh reality of the shocking statistics pertaining to cardiovascular morbidity and mortality rates not only globally, but also in South Africa. She says she was fortunate to be welcomed into a research group at the Hypertension in Africa Research Team (HART), where she was able to meet experts, including Prof Alta Schutte - the SARCHI Chair in the Early Detection and Prevention of Cardiovascular Disease in South Africa, who are committed to understanding the complex physiological mechanisms contributing to cardiovascular disease.

Her research forms part of the African-PREDICT study which aims to identify and highlight early cardiovascular risk factors in the youth, aiming to assist in the implementation of more successful prevention strategies. It was meeting the participants in the study, and seeing how some of them were unaware of how their lifestyle choices could influence their health, that motivated her to write the article for this competition.

“I love doing research, and it is amazing to know how our findings could positively impact the lives of others.”