How do sea salts differ from table salt?

What is this research about?
High amounts of salt or sodium in the diet can increase the risk of developing high blood pressure and heart disease. To reduce the amount of sodium in food, sea salts are often used to replace sodium chloride, or table salt. The purpose of this research was to compare the properties of different sea salts with table salt and to determine if sea salts are a suitable solution to reduce the salt content of foods.

What did the researchers do?
Lisa Duizer, Assistant Professor in the Department of Food Science, compared 7 different kinds of sea salt to standard table salt. All salts were available commercially. Each salt was profiled to determine sodium content, size of salt crystals, moisture content, speed at which the salt dissolved in artificial saliva, and the intensity of the salt taste. The salt taste was determined by a trained sensory panel which included 12 individuals who were trained to rate the degree of saltiness over time.

What you need to know:
The sodium content of the sea salts was similar to that of table salt. The size of the salt crystals affected many different sensory measures, including the onset of salty taste and how long it lasted. Substituting sea salt with table salt may not be the best way to reduce sodium in foods.

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How can you use this research?
Health professionals can use this research to educate consumers about the sodium content of table and sea salts. Industry can use this research to guide product development and ensure that sodium reduction strategies are effective.

Project supported by:
A program of the OMAFRA-U of G
What did the researchers find?
Dr. Duizer found that there were significant differences in moisture content and crystal size between the salts. Smaller crystals dissolved more quickly and reached the maximum salt taste sooner. Although sea salts have a different taste profile compared to table salt, there were only minor differences in salt taste after sodium content was controlled for. Furthermore, there were only small differences in the sodium content between the sea salts and table salt. The researchers concluded that the sea salts used in the study were not a suitable option to replace table salt as part of a sodium reduction strategy.

About the researchers:
Lisa Duizer, Ph.D., is an Assistant Professor in the Department of Food Science at the University of Guelph. She is also a Research Scientist with the Agri-food for Healthy Aging program at the Schlegel-University of Waterloo Research Institute for Aging.
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Keywords:
Sea salt, table salt, sodium, sodium reduction, sensory, taste, saltiness

Cite this work:
University of Guelph, Institute for Community Engaged Scholarship (2012). How do sea salts differ from table salt? Retrieved from:
http://hdl.handle.net/10214/3712

Clear Language Research Summaries are a project of the Institute for Community Engaged Scholarship (ICES) at the University of Guelph. Project partners include the Business Development Office (BDO), SPARK Program at the University of Guelph, and Knowledge Mobilization Unit at York University. This project is part of the Pan-Canadian Research Impact Network. On the Web:
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