

UMD food scientist guides students towards revelatory findings in women's health

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In an effort to sustain and educate the next generation of food safety experts in the United States, Dr. Bob Buchanan of the University of Maryland has served as a scientific mentor to a pair of academically accelerated high school students who are challenging the current food avoidance recommendations for pregnant women as established by the CDC and ACOG. Led by 14-year-olds Valentina Simon and Rachel Rosenzweig, along with professional midwives Katya Simon, Mickey Gillmor and Rebeca Barroso, results of an eleven-page study propose updated recommendations for safe food-handling practices to avoid listeriosis during pregnancy. Their paper was recently accepted by the pre-eminent publication in the women's health field, the *Journal of Midwifery and Women's Health*, an unprecedented distinction for authors of this age without formal training or advanced degrees.

Simon and Rosenzweig's report represents a critical evaluation of listeriosis prevention guidelines in the United States. Following an in-depth examination of over 850 cases of foodborne illness outbreaks in the Centers for Disease Control and Prevention (CDC) database, as well as numerous product recalls reported in the Food and Drug Administration (FDA), and United States Department of Agriculture (USDA) [food](#) recall databases, the students found that the official guidelines were in dire need of revision.

"Rachel and I looked at six categories of foods included within the 800 cases highlighted in the government databases. Six categories were the recommended foods to avoid, and we added a seventh "other" category.

We quickly noticed that the current avoidance guidelines only prevented listeriosis cases prior to the year 2000, which is very alarming," said Simon. "We then looked at the years 2015-2016 and found that only 5% of confirmed *Listeria* related infections stemmed from the six official food groups outlined in the guidelines."

From there, Simon and Rosenzweig explored further and noticed a gradual shift in detection of contamination from hot dogs, smoked seafood and pates, cold cuts, raw milk, unpasteurized soft cheeses, and unwashed raw produce, to new items such as ready-to-eat meals, frozen foods, ready-to-eat salads, and pasteurized dairy products. Essentially, these are foods that have a long refrigerated shelf life. This trend sent up a red flag for Simon and Rosenzweig, and they knew it was time to consult an academic in the field to help them understand the scientific basis of their findings.

"This is a major finding for Valentina and Rachel. I was thrilled when they reached out to me for help interpreting the data. From the start, I encouraged them to research and publish the total number of listeriosis cases as opposed to only identified cases. The CDC will only report identified cases, so going a layer deeper and discovering how many total people have been infected with *Listeria* and the causation of each has really strengthened their paper," said Buchanan. "Within their paper, Valentina and Rachel have published a very eye-opening table that demonstrates the rise in total cases from 2007-2014 from non-traditional foods. This is clear evidence that additional foods may need to be reflected within the CDC guidelines."

Upon review of the paper, Dr. Buchanan wrote close to 60 comments to clarify Simon and Rosenzweig's initial misunderstandings concerning food science and agency protocol. He took a great number of emails, phone-calls, and in-person meetings over the past few months. The collective goal is to push the boundaries of this conversation and

convene the major players within food safety to develop modernized guidelines.

More information: "Listeria: Then and Now" *Journal of Midwifery and Women's Health*, 2018.

Provided by University of Maryland

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