The glycemic index predicts how rapidly one’s blood sugar will rise after a meal. This has major implications for people with disorders like diabetes and hypoglycemia, but it is also believed to play an important role in influencing the weight control of otherwise healthy people. The physical structure of a food can alter the rate of digestion independently from the chemical composition of the food. Simulated gastrointestinal digestion is a widely employed method used to study the structural changes and digestibility of foods because it offers reproducible results at a low cost, in comparison to animal and human studies. Most studies on in vitro digestion are performed on large samples of material that provide good statistical metrics of digestion but are limited in providing a mechanistic understanding. For this reason, the aim of this project is to develop a microscopic digestion system allowing for the visual observation of in situ digestion of individual food particles. This new model will be used to investigate the rate of digestion of un-encapsulated starch and individual starch cells of different types of beans. This will enhance the understanding of the relationship between food structure and digestion and how it can be just as important as knowing the composition of the food itself, which can enable the design of healthier food products in the future.

Themes:

Check (highlight) the most applicable theme according to the abstract.

| Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation |

Comments:

Commented [A1]: I think this would be potentially of interest for a broad audience, but I was expecting it to relate to glycemic index, weight loss, and diabetes!

Commented [A2]: I am unclear of whether it is the prediction of how quickly the blood sugar will rise, or the GI itself, that is believed to play an important role in weight control.

Commented [A3]: How is this connected to glycemic index? (I have a hard time seeing how the first two sentences are related to the rest of the abstract)

Commented [A4]: Relationship to GI, weight loss, diabetes?