

Laying the Groundwork for Glycemic Index Education for Type 2 Diabetic and Insulin Resistant Patients at Seattle Children's Hospital



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BACKGROUND

Glycemic index (GI) and glycemic load (GL) are ways to classify carbohydrates based on how quickly they increase blood glucose levels.^{1,2} The GI and GL system was first developed to reduce Type 2 Diabetes (T2D) risk. At Seattle Children's Hospital, the endocrinology clinic patients span both Type 1 Diabetes (T1D), T2D, and insulin resistance/pre-diabetes patients. All patients are given education on carbohydrate counting, however carbohydrate counting is only effective for patients who have insulin dependent diabetes.³ Therefore, the clinical dietitians purposed to build an education on GI and GL targeted at T2D and insulin resistance patients that can be applied in managing their disease. This project laid the groundwork for the GI and GL education that will be fine tuned by the clinical dietitians in the endocrinology clinic.

Goals for the education

By the end of the education, participants will be able to:

- > Define glycemic index and load
- > Understand how different glycemic index and load foods affect their blood sugar levels
- > Start to incorporate glycemic index and glycemic load values when deciding foods to eat

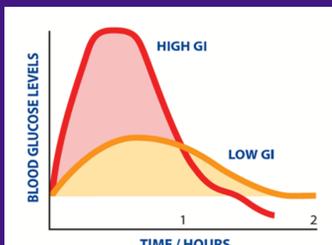
DEFINING GLYCEMIC INDEX AND GLYCEMIC LOAD^{1,2}

> **Glycemic Index (GI):** used to classify carbohydrates on how quickly they increase blood glucose (BG) levels

> GI is measured from 0 – 100+ with glucose as the reference point of 100

> **Glycemic Load (GL):** uses glycemic index values, but takes into account the amount of carbs per serving of food.

> $GL = [GI * \text{carbs per serving (g)}] / 100$



The amount of carbohydrate in the reference and test food must be the same.

<https://www.glycemicindex.com/about.php>

DELIVERABLE MATERIAL

The main deliverable for this project was a PowerPoint Presentation that included:

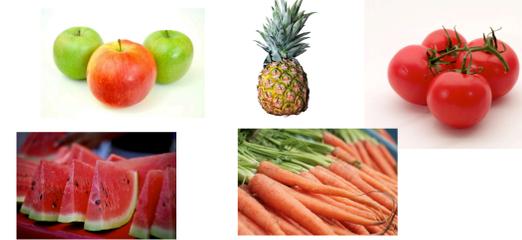
- > The definitions of GI and GL
- > Examples of foods that would fit under low, medium, and high GI and GL (see example slides below)^{2,4}
- > An activity the participants could do to identify foods in low, medium, and high GI and GL categories to choose foods/snacks to have during the day
- > The relevance of GI and GL to diabetes
- > Potential pitfalls of using GL and GI
- > Additional resources

EXAMPLE SLIDES FROM POWERPOINT

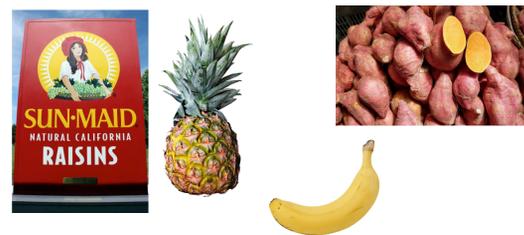
Low Glycemic Index Fruits and Vegetables



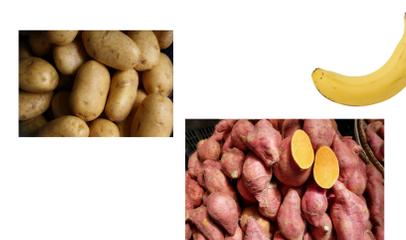
Low Glycemic Load Fruits and Vegetables



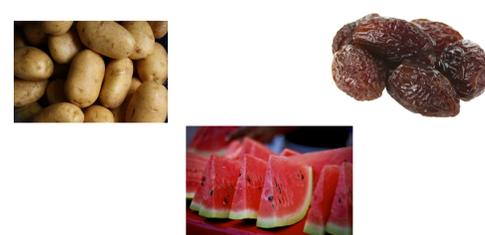
Medium Glycemic Index Fruits and Vegetables



Medium Glycemic Load Fruits and Vegetables



High Glycemic Index Fruits and Vegetables



High Glycemic Load Fruits and Vegetables



Example slides included in the PowerPoint that compared GI and GL of different food groups. Pictured here are examples of low, medium, and high GI and GL of fruits and vegetables. Other food groups included in the full PowerPoint are: starches and grains, protein, dairy, and fats. All images are taken from Google.

CONCLUSION & FUTURE DIRECTIONS

The GI and GL education given should be used to give information and help patients combine foods from differing GI and GL levels to balance their diet. The GI and GL education materials provided will be used to fine tune a future education for the T2D and insulin resistant patients at Seattle Children's Hospital led by the endocrinology dietitians. The full PowerPoint presentation was provided to the endocrinology dietitians and will be adjusted by them to best suit their needs. Once COVID-19 restrictions are lifted, the endocrinology dietitians will hold the GI and GL education sessions in a large, in person group setting. Further adjustments will be made to the education material as more education sessions are held.

ACKNOWLEDGMENTS

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REFERENCES

1. About Glycemic Index. *University of Sydney*. <http://www.glycemicindex.com/about.php>. Accessed April 12, 2021.
2. Glycemic Index and Glycemic Load. *Oregon State University: Linus Pauling Institute*. 2003-2021. <https://lpi.oregonstate.edu/mic/food-beverages/glycemic-index-glycemic-load>. Accessed April 12, 2021.
3. Carb Counting and Diabetes. *American Diabetes Association*. <https://www.diabetes.org/healthy-living/recipes-nutrition/understanding-carbs/carb-counting-and-diabetes>. Accessed May 19, 2021.