

The Impact of Continuous Glucose Monitoring and Food Diaries on Glucose Levels and Lifestyle Choices

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Introduction to the study

Elevated blood sugar levels and post-meal sugar spikes can significantly impact health, potentially leading to the development of chronic diseases over time. I gathered a group of 10 individuals to use continuous glucose monitors (CGMs) for two weeks to demonstrate how glucose impacts our bodies and help people understand how different foods might affect the so-called "glucose roller coaster" or large sugar spikes. By utilizing CGMs, participants can monitor their blood glucose levels in real-time, enabling them to make more precise and informed decisions. This real-time monitoring empowers individuals to take proactive steps towards adopting healthier dietary habits that can benefit them for the rest of their lives.

Information on continuous glucose monitors

Continuous Glucose Monitors (CGMs) provide real-time blood glucose updates via an accurate body-attached device. Many of the blood glucose monitoring regimen feels quite unsustainable, requiring frequent finger pricks and test strips several times a day. Continuous glucose monitoring (CGM) is much more convenient. CGM technology has simplified monitoring from frequent finger pricks to smartphone swipes. Some of the more advanced CGM devices even allow you to bathe and swim while wearing them. Your CGM system will come with an applicator, and though each model is different, the instructions generally include cleaning an area on your arm or abdomen with an alcohol wipe to any oils, letting the alcohol dry while you place the new sensor in the applicator, positioning the applicator on the cleaned area and pushing down on the device or button, connecting the transmitter to the sensor by pressing it into place, and using the included receiver or your smartphone to begin monitoring your glucose levels. The applicator inserts the needle sensor into the subcutaneous adipose tissue (the fat

tissue under the skin), where it can contact the interstitial fluid between your cells, which delivers oxygen and nutrients from your capillaries. The sensor then measures your interstitial glucose levels. The accuracy of certain meters is evaluated by determining the MARD (mean absolute relative difference), which measures the difference between a meter's result and the corresponding laboratory measurement. A MARD less than 10% is considered "good analytical performance." Clinical data for the freestyle libre, one of the most popular CGM systems, shows a MARD of less than 8%.

Chronic diseases in correlation to excessive glucose

Understanding glucose levels is crucial for managing overall health, especially in relation to diabetes. Glucose serves as the primary energy source for the body, vital for functions like brain activity and physical performance (Edwards, 2023). However, disruptions in glucose regulation, such as insufficient insulin production or insulin resistance, can lead to elevated blood sugar levels, a hallmark of diabetes (National Diabetes Statistics Report, 2017). Type one diabetes results from the immune system essentially fighting insulin-producing cells in the pancreas, while type two diabetes involves decreased insulin production and insulin resistance (Mayo Clinic, 2023; UVA Health, 2019). Diabetes affects a grand majority of the population, with over 34 million Americans diagnosed, and it significantly increases the risk of developing cardiovascular diseases and other detrimental conditions including cancer, and strokes. Six in ten Americans grapple with at least one chronic disease (American Diabetes Association, 2023). Moreover, diabetes has been connected to cognitive decline and an increased risk of developing dementia. This is due to the fact that diabetes and dementia share molecular characteristics and hypoglycemia (Budson, 2021). Regarding the relationship between sugar and heart health, there

are a number of indirect relationships. For example, excessive consumption of sugar overloads the liver. According to Dr. Hu, your liver processes sugar the same way it processes alcohol. It turns dietary carbohydrates into fat, eventually leading to a bigger buildup of fat, which may then develop into fatty liver disease, a factor in diabetes, which increases your risk of heart disease. Tragically, these persistent health conditions remain the primary causes of death and disability in the United States, placing a significant burden on individuals (JAMA internal medicine, 2014). Dr. Hu and his colleagues' pursued a 15 year trial and found out that those who consumed 17% to 21% of their calories as added sugar had a 38% higher chance of dying from cardiovascular disease than those who consumed 8% of those calories. Excessive sugar consumption in sugary beverages also contributes to weight gain by tricking your body into turning off its appetite-control mechanism because liquid calories are not as full as calories from solid foods. As a result, drinking sugary beverages makes it easier for people to increase the number of calories in their regular diet (Harvard health publishing, 2022).

In-depth overview of the study

The study assesses glucose levels before meals and the maximum spikes after meals and evaluates the impact of wearing a Freestyle libre CGM and maintaining a food diary on lifestyle choices and health. The study seeks to address gaps in research concerning the effectiveness of personalized dietary strategies, the long-term health implications of real-time glucose monitoring, the impact of glycemic variability on health outcomes, the effectiveness of educational interventions in promoting behavior change, and the integration of CGM technology into clinical practice. The participants ranged from young adults to middle aged individuals with fairly healthy eating habits to individuals with pre-diabetes. For the first week the participants ate

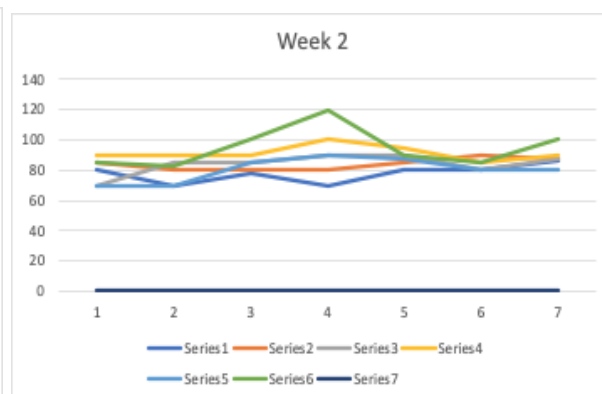
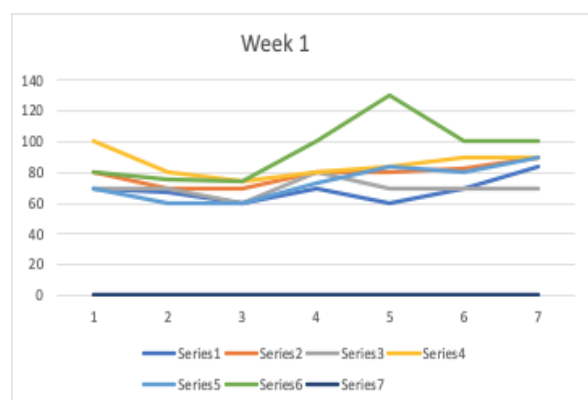
as usual (their normal diet) and they recorded their pre and post meal blood sugars and filled a specific food diary where it clearly stated the days of the week, next to it the “meal” and glucose # “before eating” and the “highest peak after eating.” At the end of the first week the participants were given specific strategies and food recommendations to mitigate elevated blood sugar levels and prevent post-meal sugar spikes. During the second week, participants continued to fill out their food diary as in their first week but now they incorporated specific strategies and food recommendations that help mitigate sugar spikes. The strategies included having a well balanced breakfast, like Two-egg omelet with tomatoes and feta, Toast with smoked salmon and cream cheese, Unflavoured Greek yogurt, nut butter, seeds and whole fruit, and Chia seed pudding. Other hacks included adding vinegar. Research shows that drinking vinegar before a meal will curb the glucose spike of what you eat afterwards by up to 30% (without you needing to change anything about the meal you're about to have). Participants that incorporated this hack poured one tablespoon of vinegar (any kind of vinegar, except balsamic as it contains extra sugar) in a tall glass of water. Some participants also added veggie starters before meals. When you eat it at the beginning of a meal, the fiber has time to deploy itself in your digestive tracts and create a protective mesh in your upper intestine. This mesh then reduces the absorption of any glucose molecules coming down during the rest of the meal, again meaning that you get to eat the exact same meal as before, but with less of an impact on your glucose and on your body. Some other hacks included using natural sweeteners like Monk fruit and Stevia powder (natural green or refined/white), and taking Supplements to lower the spike. Some supplements included Berberine, Magnesium, Cinnamon, Zinc, Probiotics, and Vitamin D. Hacks that were Recommended for if you are having cravings included Essential oils - lavender, grapefruit, peppermint and or/ fennel oil, Xylitol gum (example: Pur, Spry, Epic), Zevia Soda (stevia

sweetened soda), Electrolyte water, and Herbal teas (make sure they're natural without added ingredients). Some of the best ones to curb your appetite and help your sugar metabolism are ginger, turmeric, fennel, lemon balm. Both first and second week blood sugar averages and post-meal glucose spikes were then compared. We took the average delta of the first week and compared it to the second week. During the first week, post meal sugar spikes were higher, reflecting their usual dietary habits. In the second week, after implementing personalized dietary strategies, average blood glucose levels decreased (to ____), demonstrating a significant improvement in glucose management. Graphical representations of daily glucose profiles revealed fewer post-meal spikes and more stable trends throughout the day. Participants reported positive experiences with the dietary adjustments, noting better awareness and control over their blood sugar levels. Lastly, participants filled out a questionnaire that is attached in the food diary where 100% of the participants recommended a CGM to family members, and friends. Participants answered other questions like "do you think you eat healthy?" "Will you make healthier food choices?" "Will you incorporate some specific strategies and which ones?" and "Do you believe that wearing a CGM and learning will help you live a healthier and happier life?" Participants reported positive experiences with the dietary adjustments, noting better awareness and control over their blood sugar levels.

Individual results:

Participant #1 - week 1										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	70	80	70	100	70	80	$\Delta 43.3$			
Tuesday	67	70	70	80	60	76	$\Delta 9.67$			
Wednesday	60	70	60	74	60	74	$\Delta 12.67$	AVERAGE $\Delta 19.2$		
Thursday	70	80	80	80	73	100	$\Delta 12.3$			
Friday	60	80	70	84	84	130	$\Delta 26.67$			
Saturday	70	83	70	90	80	100	$\Delta 17.67$			
Sunday	84	90	70	90	90	100	$\Delta 12$			

Participant #1 - week 2										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	80	85	70	90	70	85	$\Delta 13.3$			
Tuesday	70	80	85	90	70	83	$\Delta 9$			
Wednesday	78	80	85	90	85	100	$\Delta 7$	AVERAGE $\Delta 9.2$		
Thursday	70	80	90	100	90	120	$\Delta 16.67$			
Friday	80	85	90	95	87	90	$\Delta 4.3$			
Saturday	80	90	80	85	80	85	$\Delta 6$			
Sunday	86	87	87	90	80	100	$\Delta 8$			



Do you think you eat healthy? **Yes**

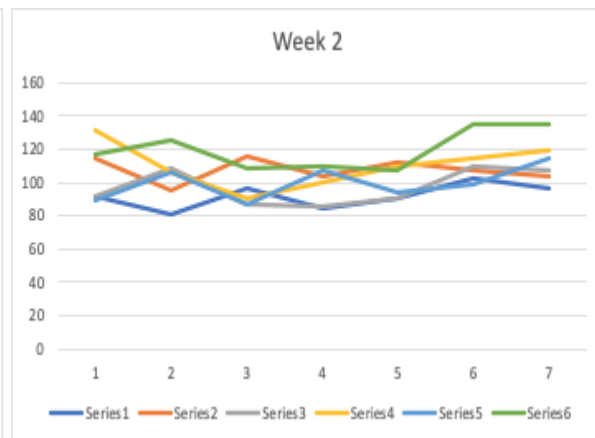
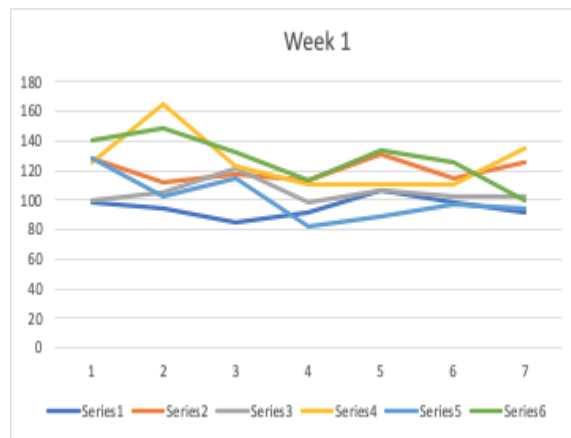
Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes; taking green pills if there aren't any greens in my meals, drinking electrolyte water and drinking vinegar mixed with water**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #2 - week 1										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	99	128	100	126	128	140	$\Delta 22.3$			
Tuesday	95	112	105	165	102	148	$\Delta 46$			
Wednesday	85	117	121	123	115	132	$\Delta 17$	AVERAGE $\Delta 24.3$		
Thursday	91	113	99	110	82	113	$\Delta 21.3$			
Friday	107	131	107	110	89	133	$\Delta 23$			
Saturday	99	115	102	110	97	126	$\Delta 17.67$			
Sunday	92	125	102	135	95	100	$\Delta 23$			
Participant #2 - week 2										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	92	114	92	132	89	117	$\Delta 30$			
Tuesday	81	95	109	106	106	126	$\Delta 31$			
Wednesday	97	116	87	90	87	108	$\Delta 14$	AVERAGE $\Delta 19$		
Thursday	85	104	86	100	107	110	$\Delta 12$			
Friday	90	112	90	110	94	107	$\Delta 18$			
Saturday	102	107	110	115	99	135	$\Delta 15$			
Sunday	97	104	107	119	115	135	$\Delta 13$			



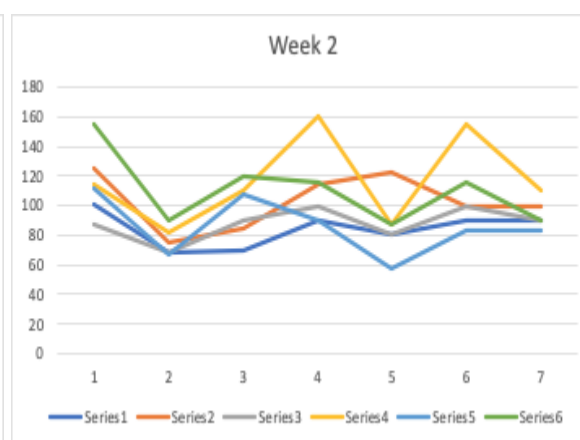
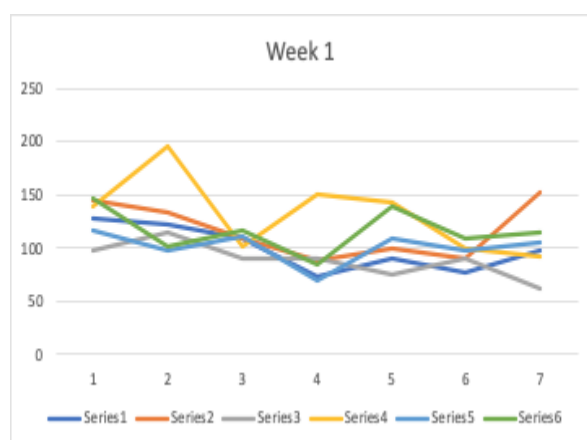
Do you think you eat healthy? **Yes**

Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes: drinking apple cider vinegar before meals, having a well balanced breakfast, taking supplements like magnesium**

Would you recommend a CGM to friends, family, and loved ones? Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #3 - week 1										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	127	145	97	140	117	147	$\Delta 30.3$			
Tuesday	122	133	115	195	97	102	$\Delta 32$			
Wednesday	109	110	90	102	111	117	$\Delta 6$	AVERAGE $\Delta 24.9$		
Thursday	73	88	90	150	69	85	$\Delta 30.3$			
Friday	90	99	75	142	110	140	$\Delta 35.3$			
Saturday	78	90	91	100	98	110	$\Delta 11$			
Sunday	98	152	62	92	106	114	$\Delta 30$			
Participant #3 - week 2										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	101	125	87	115	112	155	$\Delta 31.67$			
Tuesday	69	75	69	82	67	90	$\Delta 14$			
Wednesday	70	85	90	110	108	120	$\Delta 15$	AVERAGE $\Delta 23$		
Thursday	90	115	100	160	90	116	$\Delta 37$			
Friday	80	123	80	88	58	87	$\Delta 26$			
Saturday	90	100	100	155	84	116	$\Delta 32$			
Sunday	90	100	90	110	84	90	$\Delta 12$			



Do you think you eat healthy? **Yes**

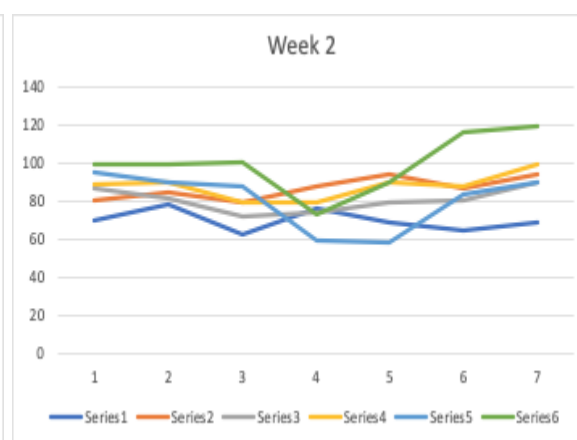
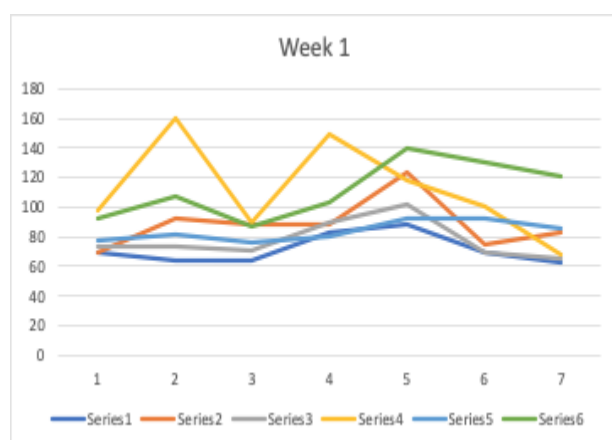
Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes: drinking Zevia sodas when experiencing cravings, adding a veggie starter first during meals, and having well balanced meals**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #4 - week 1											
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner					
Monday	69	70	74	98	77	93	$\Delta 13$				
Tuesday	64	93	74	160	81	108	$\Delta 47.3$				
Wednesday	64	89	71	90	76	87	$\Delta 18.3$	AVERAGE $\Delta 26.4$			
Thursday	83	88	90	150	80	103	$\Delta 29$				
Friday	88	123	102	118	92	140	$\Delta 33$				
Saturday	69	75	69	101	93	131	$\Delta 25.3$				
Sunday	63	83	65	68	86	121	$\Delta 19$				
Participant #4 - week 2											
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner					
Monday	70	81	87	89	95	100	$\Delta 6$				
Tuesday	79	85	82	90	90	100	$\Delta 8$	AVERAGE $\Delta 14.2$			
Wednesday	63	80	72	80	88	101	$\Delta 12$				
Thursday	76	88	74	80	60	73	$\Delta 10$				
Friday	69	94	80	90	58	90	$\Delta 22$				
Saturday	65	87	81	88	84	116	$\Delta 20.3$				
Sunday	69	94	90	100	90	120	$\Delta 21$				



Do you think you eat healthy? **Yes**

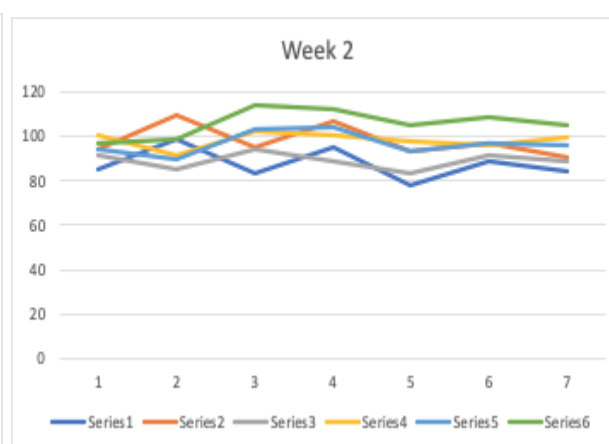
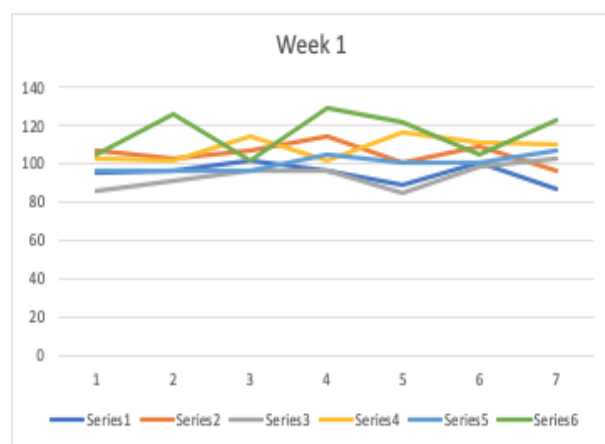
Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes: drinking Zevia when having cravings, adding vinegar to meals, and taking a 10-20 minute walk after meals**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #5 - week 1										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	95	107	86	103	96	105	Δ12.67			
Tuesday	97	103	91	102	97	126	Δ15.3			
Wednesday	102	107	96	114	96	102	Δ9.67	AVERAGE Δ19.52		
Thursday	96	114	96	102	105	129	Δ16			
Friday	89	101	85	117	101	122	Δ51			
Saturday	101	109	99	111	101	105	Δ21.3			
Sunday	87	96	103	110	107	123	Δ10.67			
Participant #5 - week 2										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	85	94	92	101	94	97	Δ7			
Tuesday	99	110	85	92	90	99	Δ9			
Wednesday	83	95	94	102	103	114	Δ10.3	AVERAGE Δ9.71		
Thursday	95	107	89	101	104	112	Δ10.67			
Friday	78	93	83	98	93	105	Δ14			
Saturday	89	97	92	96	97	109	Δ8			
Sunday	84	91	89	100	96	105	Δ9			



Do you think you eat healthy? **Yes**

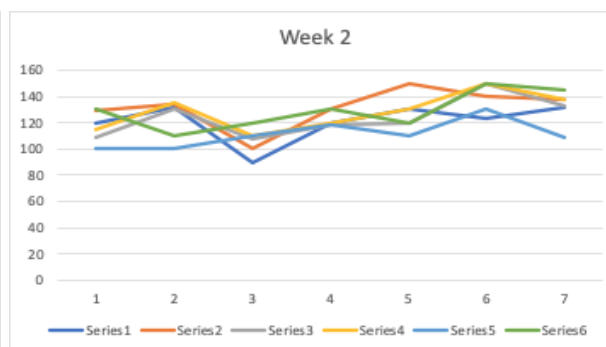
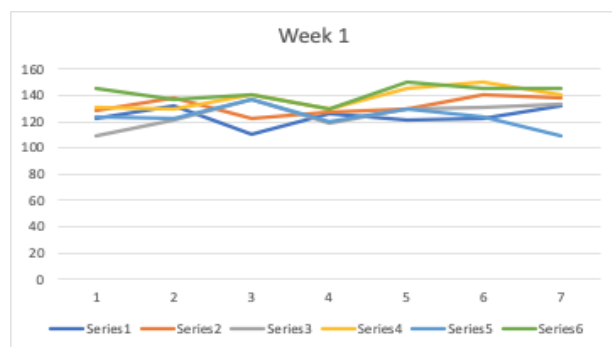
Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes; adding a veggie starter, vinegar, and electrolyte water**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #6 - week 1										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	123	129	109	131	124	145	$\Delta 16$			
Tuesday	132	138	121	130	123	137	$\Delta 9.67$			
Wednesday	111	122	137	140	137	140	$\Delta 5$	AVERAGE $\Delta 12.4$		
Thursday	126	127	119	130	120	130	$\Delta 7$			
Friday	121	130	130	145	130	150	$\Delta 14$			
Saturday	123	140	131	150	124	145	$\Delta 19$			
Sunday	132	138	133	140	109	145	$\Delta 16$			
Participant #6 - week 2										
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner				
Monday	120	129	109	115	100	130	$\Delta 15$			
Tuesday	132	134	130	135	100	110	$\Delta 5$			
Wednesday	90	100	108	110	110	120	$\Delta 7$	AVERAGE $\Delta 10.6$		
Thursday	120	130	119	120	119	130	$\Delta 7$			
Friday	130	150	120	130	110	120	$\Delta 13$			
Saturday	123	140	150	150	130	150	$\Delta 12$			
Sunday	132	138	133	138	109	145	$\Delta 15$			



Do you think you eat healthy? **Somewhat yes**

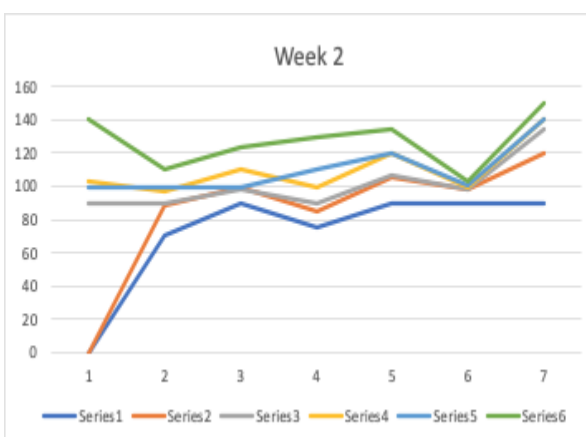
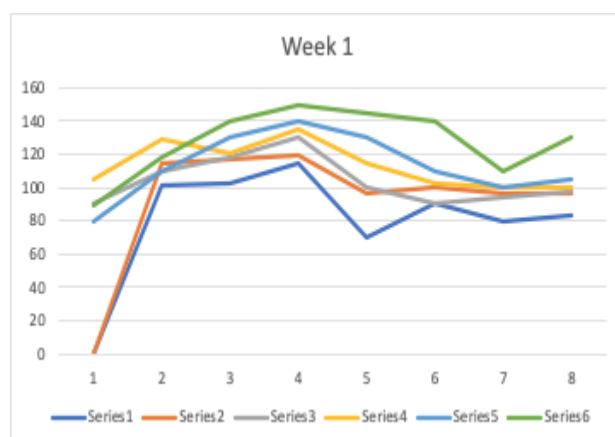
Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes; adding a veggie starter, drinking vinegar, and replacing soda with Zevia**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #7 - week 1							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	0	0	90	105	79	89	$\Delta 8$
Tuesday	101	115	110	129	110	118	$\Delta 13$
Wednesday	102	117	118	120	130	140	$\Delta 9$
Thursday	115	119	130	135	140	150	$\Delta 6$
Friday	70	96	100	115	130	145	$\Delta 18$
Saturday	90	100	90	103	110	140	$\Delta 17$
Sunday	80	96	94	100	100	110	$\Delta 10$
	83	97	98	100	105	130	$\Delta 13$
AVERAGE $\Delta 13$							
Participant #7 - week 2							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	0	0	90	103	100	140	$\Delta 17$
Tuesday	70	89	90	97	100	110	$\Delta 12$
Wednesday	90	100	98	110	100	123	$\Delta 15$
Thursday	76	85	90	100	110	130	$\Delta 13$
Friday	90	105	107	120	120	135	$\Delta 14$
Saturday	90	98	98	100	101	103	$\Delta 4$
Sunday	90	120	135	140	140	150	$\Delta 15$
AVERAGE $\Delta 12$							



Do you think you eat healthy? **Not really**

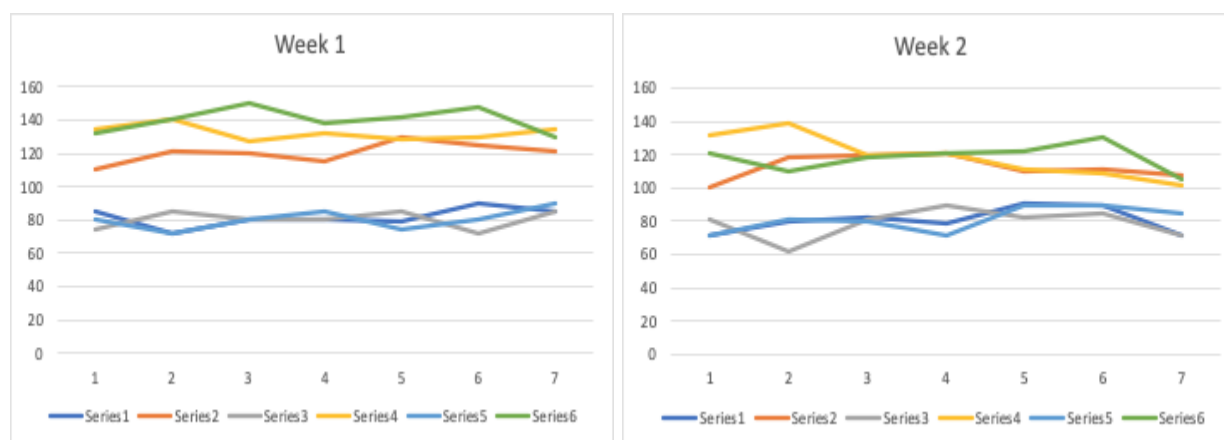
Will you make healthier food choices? **Yes. Having a CGM to track my glucose made me realize the impact food has over our bodies, encouraging me to make wiser choices in what to eat.**

Will you incorporate some specific strategies and which ones? **Yes, I will incorporate the strategy of having a veggie platter before a big meal, taking supplements like magnesium/ zinc/probiotics and walking after meals.**

Would you recommend a CGM to friends, family, and loved ones? **Absolutely!**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes, wearing a CGM has made me realize how beneficial it is having a monitor that tracks your glucose 24/7 and a monitor that is easily accessible and pain free!**

Participant #8 - week 1							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	85	110	75	135	80	132	$\Delta 45$
Tuesday	72	121	85	141	72	141	$\Delta 58$
Wednesday	80	120	81	128	80	150	$\Delta 52$
Thursday	81	115	80	132	85	138	$\Delta 46$
Friday	79	130	85	129	75	142	$\Delta 54$
Saturday	90	125	72	130	81	148	$\Delta 53$
Sunday	85	122	85	135	90	130	$\Delta 42$
Participant #8 - week 2							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	72	100	81	132	72	121	$\Delta 42$
Tuesday	80	119	62	139	81	110	$\Delta 48$
Wednesday	82	120	81	120	80	118	$\Delta 38$
Thursday	79	121	90	121	72	121	$\Delta 40$
Friday	91	110	82	111	90	122	$\Delta 26$
Saturday	89	111	85	109	89	130	$\Delta 29$
Sunday	72	108	72	101	85	105	$\Delta 28$

AVERAGE $\Delta 50$ AVERAGE $\Delta 35$ 

Do you think you eat healthy? **Yes, I try to make wise healthy food choices**

Will you make healthier food choices? **Yes, wearing a CGM for these last two weeks have definitely opened my eyes, and I will consciously make healthier food choices**

Will you incorporate some specific strategies and which ones? **Yes, I will incorporate most of the strategies, especially adding vinegar before meals**

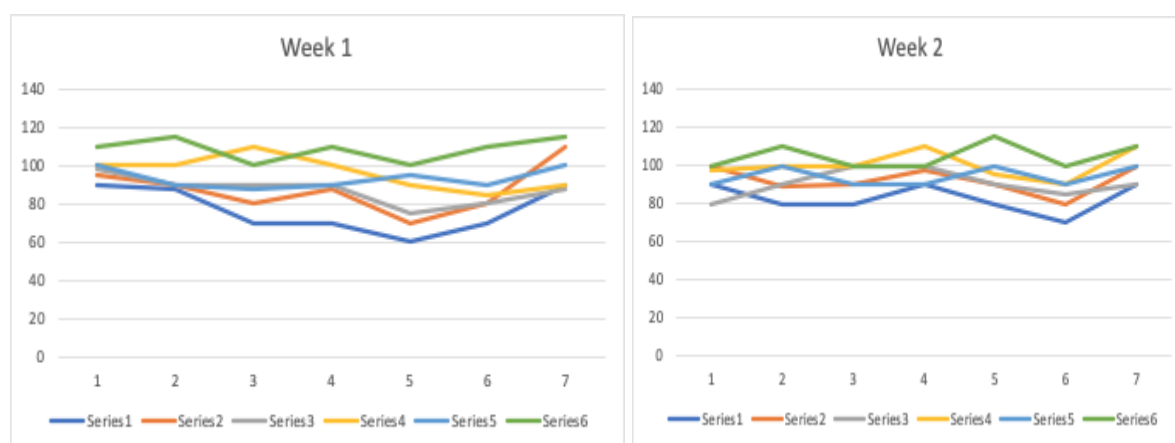
Would you recommend a CGM to friends, family, and loved ones? **Yes, I think knowing how food affects your blood sugar is very important to prevent many of our chronic diseases and highly recommend it to my friends and family.**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Absolutely. I believe controlling blood sugar is important to maintain optimal health and prevent diseases. When someone feels healthier than they live a much happier life.**

Participant #9 - week 1							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	90	95	98	100	100	110	$\Delta 5$
Tuesday	88	90	90	100	90	115	$\Delta 12$
Wednesday	70	80	90	110	88	100	$\Delta 14$
Thursday	70	88	90	100	90	110	$\Delta 16$
Friday	60	70	75	90	95	100	$\Delta 10$
Saturday	70	80	80	85	90	110	$\Delta 11$
Sunday	90	110	88	90	100	115	$\Delta 12$

AVERAGE $\Delta 11.4$

Participant #9 - week 2							
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner	
Monday	90	100	80	98	90	100	$\Delta 12$
Tuesday	80	89	90	100	100	110	$\Delta 9$
Wednesday	80	90	100	100	90	100	$\Delta 6$
Thursday	90	98	100	110	90	100	$\Delta 9$
Friday	80	90	90	95	100	115	$\Delta 10$
Saturday	70	80	85	90	90	100	$\Delta 8$
Sunday	90	100	90	110	100	110	$\Delta 13$

AVERAGE $\Delta 9.6$ 

Do you think you eat healthy? **Yes**

Will you make healthier food choices? **Yes**

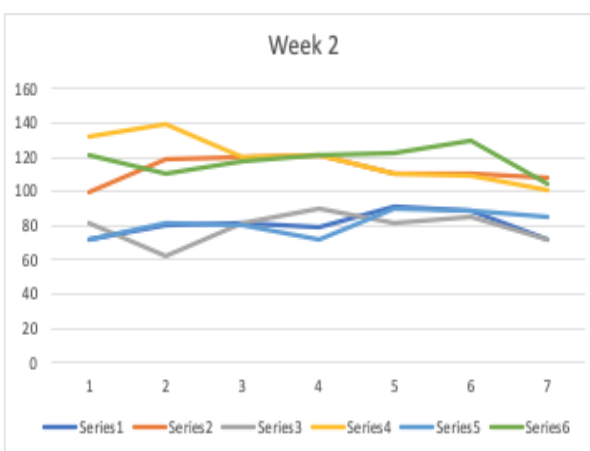
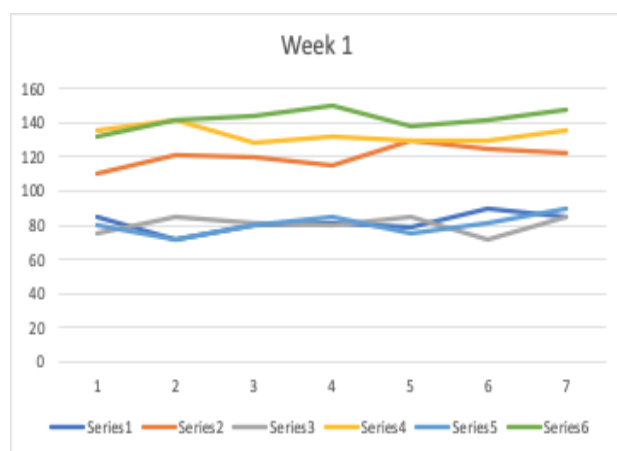
Will you incorporate some specific strategies and which ones? **Yes; starting my days off with lemon water, incorporating veggie starters before meals, and walking after meals**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Participant #10 - week 1													
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner							
Monday	85	110	75	135	80	132	$\Delta 45$						
Tuesday	72	121	85	141	72	141	$\Delta 58$						
Wednesday	80	120	81	128	80	144	$\Delta 50$	AVERAGE $\Delta 51$					
Thursday	81	115	80	132	85	150	$\Delta 50$						
Friday	79	130	85	129	75	138	$\Delta 52$						
Saturday	90	125	72	130	81	142	$\Delta 51$						
Sunday	85	122	85	135	90	148	$\Delta 48$						

Participant #10 - week 2													
	Before Breakfast	After Breakfast	Before lunch	After lunch	Before dinner	After dinner							
Monday	72	100	81	132	72	121	$\Delta 42$						
Tuesday	80	119	62	139	81	110	$\Delta 48$						
Wednesday	82	120	81	120	80	118	$\Delta 38$	AVERAGE $\Delta 35$					
Thursday	79	121	90	121	72	121	$\Delta 40$						
Friday	91	110	82	111	90	122	$\Delta 26$						
Saturday	89	111	85	109	89	130	$\Delta 29$						
Sunday	72	108	72	101	85	105	$\Delta 28$						



Do you think you eat healthy? **Not all the time**

Will you make healthier food choices? **Yes**

Will you incorporate some specific strategies and which ones? **Yes; replacing junk foods with healthier options, starting my days off with lemon water, replacing soda with Zevia**

Would you recommend a CGM to friends, family, and loved ones? **Yes**

Do you believe that wearing a CGM and learning will help you live a healthier and happier life? **Yes**

Guideline of the study sample:

Glucose challenge

Using a continuous glucose monitor can assist in making healthier food choices for maintaining health and preventing future chronic diseases

What am I proposing?

Acquiring knowledge about the effects of certain foods on blood sugar levels can empower individuals to optimize their diet and eating habits. Utilizing a continuous glucose monitor (CGM) over a two-week period allows individuals to monitor their blood glucose levels in real-time, enabling them to make more precise and informed choices and take proactive steps towards adopting healthier dietary habits that can benefit them for life.

Why is this important?

Elevated blood sugar levels and post-meal sugar spikes can have a detrimental impact on one's health, potentially leading to the development of chronic diseases over time. This excess blood sugar sticks to many parts of our bodies including the insides of our arteries and the linings of our cells.

Six in ten Americans grapple with at least one chronic disease, including heart disease, stroke, cancer, dementia, or diabetes. Tragically, these persistent health conditions remain the primary causes of death and disability in the United States, placing a significant burden on individuals. It is crucial to address and manage elevated blood sugar and post meal sugar spikes, to safeguard long-term well-being and reduce the risk of chronic health conditions.

Guidelines:

- During a two week period, each participant will wear a CGM. For the first week the participants will eat as usual (**normal diet**) and they will record their pre and post meal blood sugars and fill specific food diary.
- At the end of the first week the participants will be given specific strategies and food recommendations to mitigate elevated blood sugar levels and prevent post-meal sugar spikes.
- During the second week, participants will continue to fill out their food diary as in their first week but now incorporating specific strategies and food recommendations that will help mitigate sugar spikes!
- Both first and second week blood sugar averages and post-meal glucose spikes will be compared. Participants will then fill out a questionnaire that is attached in the food diary.

Hacks to implement during the second week sample:

Hacks that members can implement during the second week:

1.) Have a well balanced breakfast

- a.) A savory breakfast will keep your glucose levels steady for the whole day and considerably reduce cravings
- b.) Examples of a savory breakfast:
 - i.) Two-egg omelet with tomatoes and feta
 - ii.) Toast with smoked salmon and cream cheese
 - iii.) Unflavoured Greek yogurt, nut butter, seeds and whole fruit.
 - iv.) Chia seed pudding.

2.) Adding vinegar

- a.) Research shows that drinking vinegar before a meal will curb the glucose spike of what you eat afterwards by up to 30% (without you needing to change anything about the meal you're about to have).
- b.) Pour **one tablespoon of vinegar** (any kind of vinegar, except balsamic as it contains extra sugar) in a tall glass of water.
- c.) Try mixing with sparkling water, ice cubes, or a dash of lemon, if you'd like.
- d.) Drink it about 10 minutes before a big meal.

3.) Add a veggie starter

- a.) eat your vegetables first during your meal, or munch on a pre-meal veggie starter.
- b.) When you eat it at the beginning of a meal, the fiber has time to deploy itself in your digestive tracts and create a protective mesh in your upper intestine. This mesh then reduces the absorption of any glucose molecules coming down during the rest of the meal

4.) Taking a 10- or 20-minute walk after you eat

- a.) As you use your muscles, they will soak up the excess glucose in your bloodstream, in turn reducing the glucose spike of the meal you just had. This prevents fatigue and helps your body manage the impact of the sugar you might have eaten.

5.) Supplements to lower the spike:

- a.) Magnesium
- b.) Cinnamon
- c.) Zinc
- d.) Probiotics
- e.) Vitamin D

6.) Using natural sweeteners

- a.) Examples include:
 - i.) Monk fruit
 - ii.) Stevia powder (natural green or refined/white)

7.) Recommended for if you are having cravings

- a.) Essential oils - lavender, grapefruit, peppermint and or/ fennel oil
- b.) Xylitol gum (example: Pur, Spry, Epic)
- c.) Zevia Soda (stevia sweetened soda)
- d.) Electrolyte water
- e.) Herbal teas (make sure they're natural without added ingredients. Some of the best ones to curb your appetite and help your sugar metabolism are ginger, turmeric, fennel, lemon balm.

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