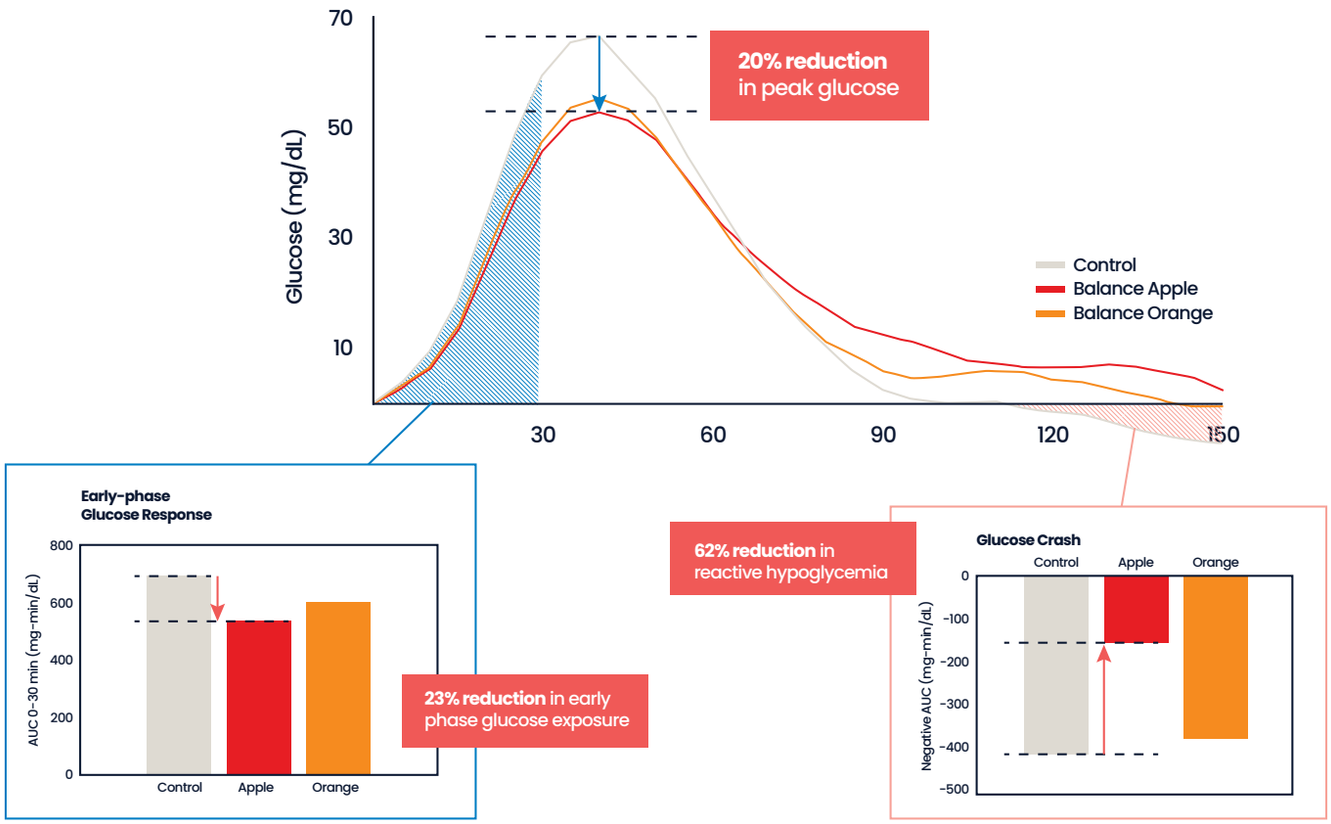
Balance Apple extends glycemic benefits beyond peak glucose reduction

Unicity's Balance is a dietary supplement containing a targeted blend of soluble fibers and added plant bioactive compounds. This randomized, controlled study evaluated two variations–Balance Apple and Balance Orange–for their effect on the postprandial glucose response to a standardized high carbohydrate breakfast in generally healthy adults. Consistent with prior findings, Balance Orange lowered peak postprandial glucose (though not statistically significant). Balance Apple went further, lowering peak glucose and also beneficially shaping the glucose curve at two additional periods: significantly blunting the early-phase rise in glucose and smoothing the post-peak return toward baseline, without the pronounced undershoot or "crash" seen with control. Together, these results position Balance Apple as a simple, effective tool for supporting a healthier glycemic response to a high carbohydrate meal.



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Background

The shape of the postprandial glucose curve is impacted by how effectively the body regulates blood glucose and reflects overall metabolic health. In healthy adults, an ideal glucose response following a meal is a modest rise, with a return to near-baseline levels within about two hours [1]. Features of a compromised response, by contrast, include a steeper rise, a higher peak, and an exaggerated post-peak decline that overshoots below baseline before recovering; glycemic fluctuations of this kind have been associated with oxidative stress and endothelial dysfunction independent of overall glucose exposure [2].

Interventions that shift the postprandial curve toward this ideal shape are therefore of clinical interest. Pre-meal intake of viscous soluble fiber is well established to blunt the glycemic response by slowing gastric emptying and delaying carbohydrate digestion and absorption [3,4]. Previous research has shown that Unicity's Balance Orange fiber supplement (4g total fiber) can reduce incremental peak glucose following a high carbohydrate meal [4,5]. Unicity's Balance Apple contains an upgraded 5g viscous fiber blend (guar gum, gum arabic, psyllium, tapioca fiber, oat beta-glucan, apple pectin, and locust bean gum) with an added apple polyphenol fraction, which has separately been studied for its association with inhibition of SGLT1, a transporter that moves sugar from the gut into the bloodstream [6–9].

This randomized, controlled study was designed to test whether Balance Orange and Balance Apple lower the postprandial glucose response to a realistic high-carbohydrate breakfast meal.

Methods

Design. This was a randomized, controlled, crossover trial with a volume-matched water control. Continuous glucose monitoring (CGM) sensors were worn by each participant throughout the study period, during which participants completed the same standardized meal, on three separate occasions.

Participants. Generally healthy adults were recruited to participate in this study (n = 17, age 23-63, 41% female).

Interventions and Test Meal. Following an overnight fast, participants consumed one of three beverages, in randomized order: Balance Apple, Balance Orange, or a volume-matched water control. Next, participants consumed a standardized test meal (Table 1). The 2.5 hour glycemic response was recorded with CGM sensors. Since CGM measures interstitial glucose and has a slight delay in reflecting changes in blood glucose, a 2.5 hour postprandial period was selected to capture the full glycemic response rather than a 2 hour period. During this time, participants remained seated and did not consume any other foods or beverages. Three test sessions in total were completed across separate days with a minimum 24 hours between each visit.

Endpoints. The pre-specified primary endpoint was incremental peak glucose (change from baseline to peak). Secondary endpoints included 0–150 min positive glucose area under the curve (AUC) (total glucose exposure), 0–30 min positive glucose AUC (early-phase response), and post-peak negative glucose AUC (post-peak "crash").

Statistics. Outcomes were analyzed with a mixed-effects model with Tukey's multiple comparisons or paired t-tests where applicable.

Table 1

	Total Energy (kcal)	Total Carbohydrate (g)	Total Protein (g)	Total Fat (g)
Waffles, Syrup, Apple Juice	360	76	4	4.5

Table 1. Total energy and macronutrient composition of the provided study test meal.

Results

Overall glucose response

A significant Time x Treatment interaction effect was observed ($p=0.03$), and pairwise comparisons revealed Balance Apple was significantly lower than Control from 10-35 min and 130-150 min following the meal ($p<0.05$, Fig 1). This demonstrates that Balance Apple had a significant impact on the body's overall glucose response to the meal. No significant differences were observed between Balance Orange and Control.

Peak glucose reduction

Balance Apple significantly reduced incremental peak glucose by 20% relative to Control ($p<0.05$, Fig 1). Average peak glucose with Balance Orange was smaller than Control, but not statistically significant—likely due to the relatively large person-to-person variation (Fig 1).

Early-phase glucose response (AUC 0-30 min)

The iAUC 0–30 min window isolates the absorption-driven phase of the glycemic response–the period in which a reduction in the rate of intestinal glucose entry would be expected to manifest most directly, before insulin-mediated clearance becomes the dominant influence on circulating glucose.

Balance Apple significantly lowered the early-phase glucose response relative to Control (-23%, Tukey's multiple comparisons, $p=0.01$, Fig 2). Balance Orange did not reach significance, consistent with an effect that is specific to Balance Apple rather than shared across both products.

Post-meal glucose crash (negative AUC)

Balance Apple also showed a 62% smaller post-peak "undershoot" (negative AUC) relative to Control ($p=0.01$, Fig 3), consistent with a smoother return to baseline rather than an overshoot-and-crash pattern.

Figure 1

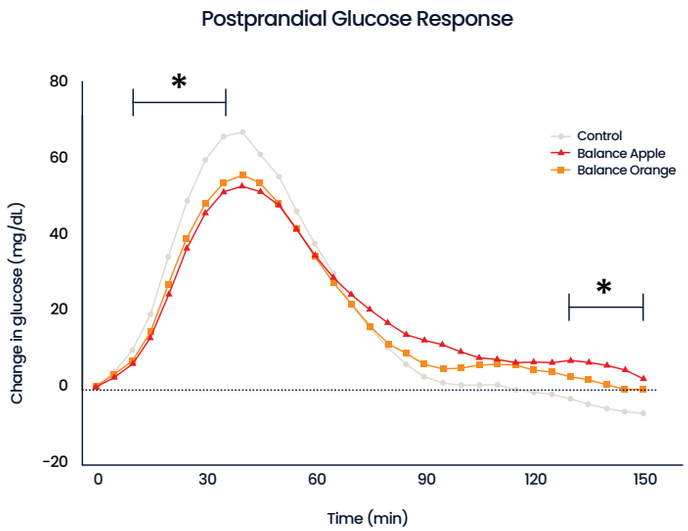

Figure 1. Postprandial glucose response curve. *p<0.05, APL vs. CON.

Figure 2

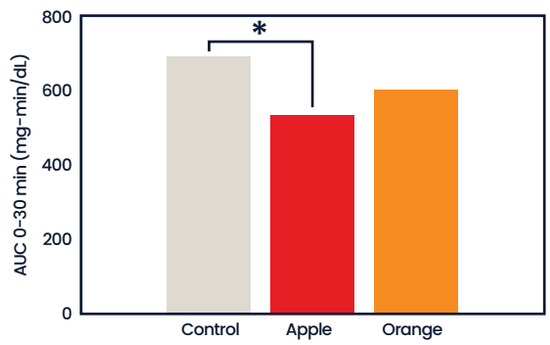

Figure 2. Early-phase glucose response (AUC 0-30 min). Balance Apple (APL) reduced the initial rise in glucose by 23% relative to Control (CON). *p<0.05, APL vs. CON.

Figure 3

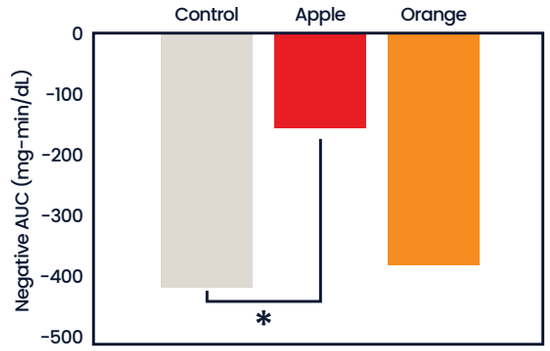

Figure 3. Glucose crash comparison (post-peak negative AUC). Balance Apple (APL) reduced the glucose crash by 62% relative to Control (CON). *p<0.05, APL vs. CON.

Conclusion

Balance Apple significantly reshaped the postprandial glucose response to a high carbohydrate breakfast, moving the glycemic curve toward the ideal pattern: a slower early-phase increase, a smaller peak, and a smoother return to baseline without the pronounced overshoot below baseline. Balance Orange lowered peak glucose on average, though the effect did not reach statistical significance, likely due to the wide person-to-person variation in response. Balance Apple's broader effect suggests it acts on more than one phase of glucose handling, not just the height of the peak.

This pattern is consistent with two complementary mechanisms. First, Balance Apple contains 25% more soluble fiber than Balance Orange; a larger viscous fiber load can slow gastric emptying and thicken the fluid barrier glucose must cross to be absorbed, delaying glucose absorption. Second, Balance Apple's dedicated apple polyphenol fraction may be a secondary contributor by helping to limit how quickly sugar is absorbed from the gut into the bloodstream [6–8].

Together, these results support Balance Apple as an effective tool for supporting a healthier postprandial glucose response — addressing not just the peak, but the shape of the full curve.

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