

### Equivalent Glycemic Load (EGL) of Atkins Chocolate Peanut Butter Bar and Atkins Chocolate Ready-to-Drink Shake in People With Type 2 Diabetes

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**Objectives:** It is difficult to estimate the glycemic impact of low-carbohydrate (low-CHO) foods from the information in the Nutrition Facts Table. We developed equivalent glycemic load (EGL) to quantify the glycemic impact of low-CHO foods in people without diabetes. The current objective was to determine the feasibility and safety of measuring EGL in people with type 2 diabetes (T2D).

**Methods:** Overnight fasted adults with T2D treated by diet or oral agents and A1c < 8.1% consumed 1 serving of Atkins Chocolate Peanut Butter Bar (CPB) or Atkins Milk Chocolate Shake (MCS) or 45 g white bread (WB) in random order on 3 separate days. CPB/MCS, respectively, contained 150/160 kcal, 14/9 g fat, 16/15 g protein, 23/5 g CHO and 12/3 g fiber. We took finger-stick blood fasting and every

30 min for 3 h after starting to eat. Serum glucose was measured by glucometer (analytic CV = 8.6%) and by the Vitros Chemistry System (Vitros, CV = 1.6%). In each subject  $F/(WB/Cwb)$  was calculated where  $F$  = incremental area under the curve (iAUC) for the food,  $WB$  = iAUC after WB and  $Cwb$  = 20.8 (the amount of CHO in WB).  $EGL = \text{mean } F/(WB/Cwb)$ , after excluding values >2 SD from the mean.

**Results:** We screened 18 subjects; 4 were ineligible (A1c >8.0%), 14 were enrolled and 2 dropped out. The remaining 12 subjects (5 males, 7 females; aged 43–75 (mean  $\pm$  SD,  $63 \pm 11$ ) yr; BMI 23.0–56.0 ( $35.2 \pm 9.0$ ) kg/m<sup>2</sup>) completed in the study. By Vitros, the EGLs (mean [95% confidence interval] for CPB, 4.1 [2.0, 6.2] g (n = 11), and MCS, 3.8 [1.6, 6.0] g (n = 11) were similar to those by glucometer CPB, 5.8 [2.5, 9.1] g (n = 12) and MCS, 3.0 [0.8, 5.2] g (n = 11). There were no episodes of hypoglycemia during the study. Loose stools were experienced by 1 subject after CPB and by a different subject after MCS, events considered to be possibly related to the study products.

**Conclusions:** The results suggest it is feasible and safe to measure EGL in people with T2D not taking insulin.

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