SUPPLEMENTARY DATA

Appendix A

The aim of the first set of primary analyses ("Emotional State Prior to Eating") was to assess the effect of negative affect prior to a meal or snack on insulin restriction. As shown in Equation 1, the probability of insulin restriction on eating occasion t for individual i was modeled as a function of the following Level 1 and 2 effects:

Level 1: $\text{Logit}(\text{Restriction}_{ti}) = \beta_{0i} + \beta_{1i}(\text{Affect}_{ti} - \overline{\text{Affect}}_i) + e_{ti}$ (1)

Level 2: $\beta_{0i} = \gamma_{00} + \gamma_{01}(\overline{\text{Affect}}_i - 1.98) + U_{0i}$
             $\beta_{1i} = \gamma_{10}$

Person-mean centering was used to examine the time-varying effect of negative affect. In person-mean centering, the between-person (i.e., time-invariant) effect of negative affect ($\overline{\text{Affect}}_i$) is centered at the group mean of the observed distribution of negative affect ($M = 1.98$). The within-person (i.e., time-varying) effect of negative affect (Affect_{ti}) is centered at each participant's usual level of negative affect ($\overline{\text{Affect}}_i$).

At Level 1, the logit of the probability of reporting insulin restriction on a particular eating occasion is a function of the intercept (β_{0i}), the within-person effect of negative affect (β_{1i}), and the residual variance (e_{ti}). The interpretation for term β_{0i} is the following: it reflects the logit of the probability of reporting insulin restriction on eating occasion t for person i. In turn, Term β_{1i} represents the logit of the expected change in probability of insulin restriction for every 1 unit increase in negative affect at a specific eating occasion, above one's average negative affect during the study period.

At Level 2, the intercept (β_{0i}) is a function of the fixed intercept (γ_{00}), the between-person effect of negative affect (γ_{01}), and the random intercept (U_{0i}). Within-person effect of negative affect (β_{1i}), which is presented as the within-person effect in the Results section, is a function of the fixed effect of within-person negative affect (γ_{10}). Term γ_{00}, represents the logit of the probability of insulin restriction for a participant who reported the average negative affect of 1.98. Finally, term γ_{01}, which is presented as the between-person effect in the Results section, reflects the logit of the expected change in probability of insulin restriction for every 1 unit increase in one's average negative affect during the study period.

SUPPLEMENTARY DATA

Appendix B

The aim of the second set of primary analyses ("Concurrent Characteristics of Eating Episode") was to investigate which eating episode characteristics were associated with insulin restriction. To investigate the effect of continuous predictors (i.e., loss of control, and guilt about eating) on insulin restriction, we used the person-mean centering approach described above (see Appendix A, Equation 1).

To model the effect of dichotomous predictors (i.e., break a rule, large amount of food, uncomfortably full) on insulin restriction, we used grand-mean centering. Equation 2 demonstrates how we modeled the probability of insulin restriction as a function of dichotomous eating episode characteristics with the example predictor break a rule. The probability of insulin restriction on eating occasion t for individual i was modeled as a function of the following Level 1 and 2 effects:

Level 1: $$\text{Logit}(\text{Restriction}_{ti}) = \beta_{0i} + \beta_{1i}(\text{FoodRule}_{ti}) + e_{ti} \qquad (2)$$

Level 2: $$\beta_{0i} = \gamma_{00} + \gamma_{01}(\overline{\text{FoodRule}}_i - 0.19) + U_{0i}$$
$$\beta_{1i} = \gamma_{10}$$

Grand-mean centering was used to examine the time-varying effect of break a rule. The chief difference in grand-mean versus person-mean centering is in slight change to interpretation of Level 1 (time varying) and Level 2 (time invariant) effects of predictors. We centered the Level 2 time-invariant effect of break a rule (i.e., $\overline{\text{FoodRule}}_i$) at 0.19, due to the fact that participants reported breaking a food rule/routine on 19% of eating occasions. The between-person effect should be interpreted as the unique effect of a person who reports "Yes" to break a rule on 100% (vs. 0%) of eating occasions, after statistically controlling for break a rule on any given eating occasion. The Level 1 time-varying effect of break a rule (i.e., FoodRule_{ti}) represents the within-person effect of break a rule. FoodRule_{ti} was left uncentered, as 0 is already a meaningful value (i.e., food rule or routine not broken). The within-person effect should be interpreted as the unique effect of reporting "Yes" to break a rule on any given eating occasion.

SUPPLEMENTARY DATA

Appendix C

The aim of the secondary analyses ("Insulin Restriction Predicting Post-Meal Affect") was to examine whether insulin restriction predicted subsequent affect. Equation 3 uses the variable happy to describe how we modeled the effect of insulin restriction on subsequent affect. The level of happy on eating occasion t for person i was modeled as a function of the following Level 1 and 2 effects:

Level 1: $$\text{Happy}_{ti} = \beta_{0i} + \beta_{1i}(\text{Restriction}_{ti}) + e_{ti} \tag{3}$$

Level 2: $$\beta_{0i} = \gamma_{00} + \gamma_{01}\overline{(\text{Restriction}_i} - 0.23) + U_{0i}$$
$$\beta_{1i} = \gamma_{10}$$

At Level 1, the level of happy after a particular eating occasion is a function of the intercept (β_{0i}), the within-person effect of insulin restriction (β_{1i}), and the residual variance (e_{ti}). At Level 2, the intercept (β_{0i}) is a function of the fixed intercept (γ_{00}), the between-person effect of insulin restriction (γ_{01}), and the random intercept (U_{0i}). Within-person effect of insulin restriction (β_{1i}) is a function of the fixed effect of within-person insulin restriction (γ_{10}).