

*TREATMENT OF COVERT FOOD STEALING IN  
AN INDIVIDUAL WITH PRADER-WILLI SYNDROME*

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Covert food stealing is common among individuals with Prader-Willi syndrome. We found that verbal reprimands, delivered contingent upon eating prohibited foods, were sufficient to decrease the food stealing of a girl with Prader-Willi syndrome. Warning stimuli were then used to help her discriminate between permitted and prohibited foods during sessions in which food stealing was not directly observed. This procedure resulted in decreases in food stealing from containers labeled with the warning stimuli.

DESCRIPTORS: Prader-Willi syndrome, food stealing, stimulus control, warning stimuli

Food stealing is a common manifestation of Prader-Willi syndrome and can contribute to serious medical consequences including obesity (Martin et al., 1998). Unfortunately, individuals with this syndrome often become skilled in stealing food covertly, making treatment difficult. The covert nature of food stealing and the difficulty of continuous supervision necessitate interventions that can be effective under conditions of low supervision.

In cases in which it has been difficult to directly observe target behaviors, researchers have demonstrated the utility of delivering delayed punishment for response products. For example, Grace, Thompson, and Fisher (1996) treated covert self-injury by withdrawing opportunities to earn tokens contingent on tissue damage noted during daily physical examinations. Others have been

able to control target behaviors in the absence of direct consequences through stimulus control procedures. For example, Piazza, Hanley, and Fisher (1996) established a card as a negative discriminative stimulus for pica by correlating its presence with response interruption. They then found that the presence of the card was associated with low levels of pica even when response interruption was discontinued. In the present study, similar stimulus control procedures were combined with verbal reprimands to reduce covert food stealing in an adolescent with Prader-Willi syndrome.

## METHOD

### *Participant*

Libby was a 14-year-old girl who had been diagnosed with moderate mental retardation and Prader-Willi syndrome and had been referred to an inpatient program for the treatment of food stealing and food-related aggression. Libby's parents reported that she obtained food at home when left unsupervised, but only from appropriate sources (e.g., table tops, cabinets, or refrigerator). Prior attempts to control stealing through

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reinforcement-based procedures had limited effects.

#### *Data Collection and Interobserver Agreement*

All sessions lasted 10 min. Observers weighed food, in grams, before and after sessions using an electronic scale, and the difference was the dependent measure. During 47% of sessions, a second observer independently weighed the food. Interobserver agreement, calculated by dividing the smaller weight by the greater weight and multiplying by 100%, was 100%.

#### *Settings and Procedure*

*Baseline 1.* Prohibited food items (e.g., cookies, pretzels) in their original containers were placed in a room containing a table and chairs. Libby was brought into the room, given a leisure activity (Play-Doh®), and was asked to remain in the room while the therapist worked in another room. She was also told that she should not eat the food. Trained observers monitored Libby through a one-way mirror. Food consumption produced no consequences during this phase, and no consequence was provided for abstaining from eating prohibited foods throughout the study.

*Within-session reprimands.* During this phase, if Libby attempted to steal food (defined as placing her hand into a container), the therapist entered the room, prompted her to put down the food, and delivered a brief verbal reprimand (“Libby, that’s not your food. Stop eating it.”). If she did not comply, the therapist removed the food items.

*Baseline 2.* Baseline conditions were then reinstated, but Libby did not consume any food. If reprimands effectively punished food stealing, the effects would not be expected to be reversed unless the environmental cues associated with punishment had changed. Therefore, Baseline 2 was continued in a novel setting, a bedroom with three

beds and a chair. Prohibited foods were placed on a counter in the room. Again, food consumption produced no consequences.

*Postsession reprimand.* Because Baseline 2 was conducted in a room without a one-way mirror, reprimands could not be delivered immediately. Therefore, the therapist entered the room after the session and weighed the prohibited food in Libby’s presence. If food had been consumed, the therapist delivered a verbal reprimand immediately after weighing the food.

#### *Stimulus Control Assessment*

*Training trials.* Three trials were conducted to establish an orange sticker (4.5 cm by 7 cm) as a stimulus correlated with prohibited foods. In each trial, Libby was shown two containers of cookies, one of which was labeled with the sticker. Libby was told that she could consume only cookies from the container without the sticker. She was then asked, “Which cookies can you eat?” If she answered correctly, she received one cookie from the container. Libby accurately identified the cookies that she was allowed to consume during all three trials.

*Sticker on one container.* The stickers were then used to label prohibited foods in the treatment setting. Sessions were conducted in a kitchen adjacent to a living room. The kitchen contained leisure activities on a table, an empty refrigerator, and a counter that held one labeled and one unlabeled cookie container. During sessions, therapists remained in the living room and Libby was prompted to enter the kitchen. After sessions, a therapist entered the kitchen and weighed the labeled container in Libby’s presence. If a difference between the pre- and postsession weights was noted, the therapist delivered a reprimand. No consequence was delivered for consuming cookies from the unlabeled container (weighed after Libby had left the kitchen).

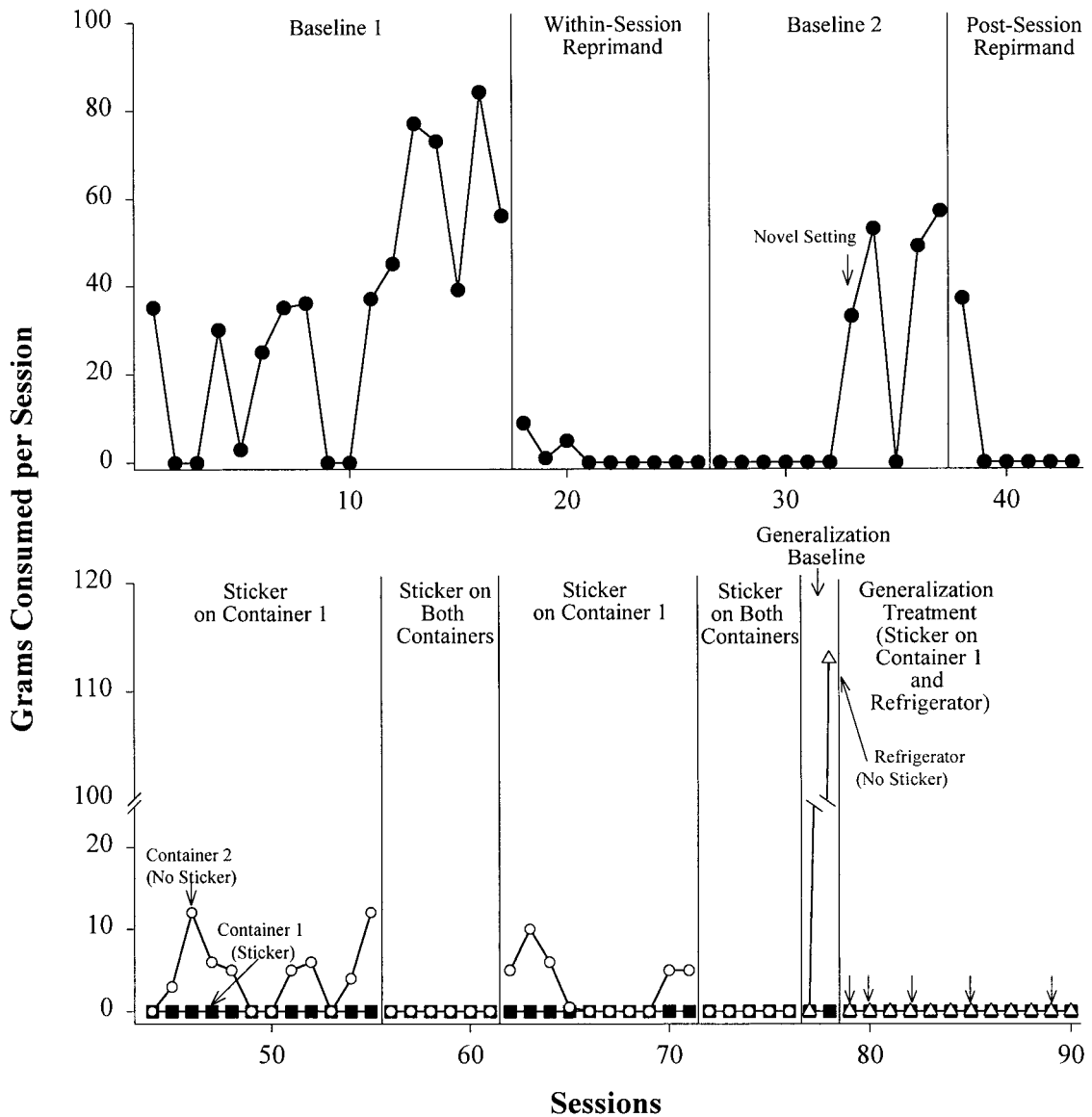


Figure 1. Grams of prohibited food consumed per session during the evaluation of within-session and postsession reprimands (top panel) and grams of prohibited and permitted foods consumed per session during the stimulus control assessment (bottom panel). Arrows indicate sessions in which the refrigerator was checked for missing food in the presence of the participant.

*Sticker on both containers.* Prior to sessions, stickers were placed on both containers. Following sessions, both containers were weighed in Libby's presence. If the therapist noted a difference in the pre- and postsession weights of either container, a reprimand was delivered.

*Generalization baseline.* During this phase,

the kitchen contained one labeled cookie container, and the refrigerator contained milk cartons and pudding containers. Food inside the refrigerator was factory sealed, and a visual inventory was made prior to sessions. After sessions, the room was searched for open containers. Consumption of refrigerator food was based on the difference be-

tween the weight of opened packages and the weight specified on the package. The contingencies for eating labeled cookies remained the same as in the previous phase, but no consequences were delivered for consumption of food from the refrigerator.

*Generalization treatment.* A sticker was placed on the refrigerator door and was pointed out to Libby prior to sessions. Following the first two sessions, the therapist entered the room and checked both food sources. If any food was missing from either the refrigerator or the cookie container, a verbal reprimand was issued. Thereafter, checks were conducted only intermittently.

## RESULTS AND DISCUSSION

The results of the initial assessment (Figure 1, top panel) revealed that Libby stopped eating prohibited foods when consumption resulted in verbal reprimands, either within a session or after sessions. During the stimulus control assessment (bottom panel), Libby consumed food only from unlabeled containers. When a novel food source was introduced, consumption of prohibited food increased during Session 78, then decreased to zero when stickers were placed on all food sources. Our results suggest that an intervention based on stimulus control and punishment delivered for response products can reduce covert food stealing and that the treatment remained effective when weighing of prohibited foods was conducted intermittently.

Although within-session reprimands appeared to have a straightforward punishment effect, the stimulus functions of the other independent variables are less clear. Postsession reprimands might have decreased food stealing through delayed punishment, but it

is also possible that features of the experimental setting acquired stimulus control over food stealing through their association with punishment. The latter explanation may also account for the effects of the stickers. However, in the case of the stickers, the explanation is more tentative because the association between stickers and verbal reprimands was, at best, an indirect one (i.e., weighing prohibited food was, at different times, associated with both verbal reprimands and stickers). Alternatively, instructional control stemming from either the reprimands or from the training instructions may have accounted for the effects.

One limitation of the study is that we did not demonstrate experimental control between either reprimand procedure and food stealing. Also, we conducted the analyses on a hospital unit, so the extent to which the effects generalize to more naturalistic setting is unknown. Generality of the present findings might be further limited in the sense that not all individuals would be as responsive to verbal reprimands. However, the stimulus control procedures could be easily combined with other consequences to modify food stealing.

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