

Reducing rapid eating with DRL-IRT using connected fork in a child with autism

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Introduction

- Rapid eating is correlate with obesity, lower satiating efficiency, gastro-intestinal disorder.
- Lennox (1987) used a DRL with manual and vocal prompt for reduce rapid eating. Anglesea, Hoch & Taylor (2008) used a pager as less intrusive prompt.
- Advances in technology provide access to a greater autonomy, social acceptance for people with autism and to facilitate implementing and taking data for staff.
- The purpose to the study is to evaluate effects of a DRL-IRT with shaping implemented with connected fork.

Method

Participant was a 10 years old non vocal boy with ASD presenting rapid food consumption. He demonstrated independent eating skills.

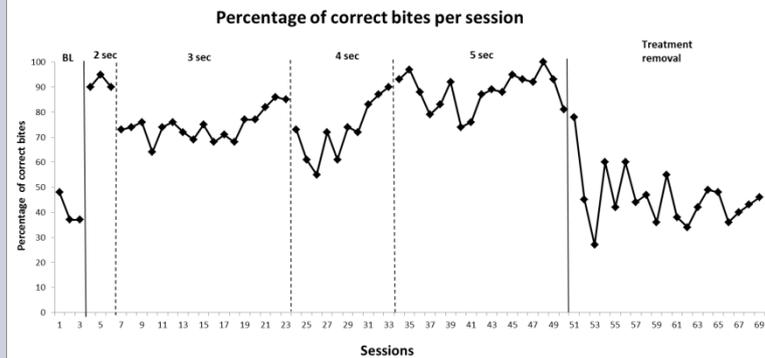
Sessions were conducted during one meal per day, 5 days per week, in the cafeteria of school.

A connected 10SFork by Slow Control was used for data collection, programming IRT target, and visual and tactile feedback on responses. The fork measured hand-mouth movement and provided live feedback on behavior. It flashed green when behavior achieved the minimum the target IRT. It flashed red with vibration when the participant took a bite before the end of the target IRT. The percentage of correct bites, reaching target IRT, was collected by the connecting the fork and sent via computer.

Procedure :

- A minimum 5 seconds IRT between two bites was agreed on with the parents. Target IRT were increased from 2 seconds to 5 seconds. Target IRT of two seconds was increased to one second when 80% of correct bites were obtained on three consecutive sessions.
- The connected fork was turned on when the plate was presented and turned off when the child indicated he was finished.
- A token economy was used with continuous reinforcement. A verbal prompt "Eat slowly" was used for the next bite if the fork showed the participant was below the IRT target. If the fork flashed and vibrated a consecutive second time, a physical prompt are used to put the fork on the edge of the plate.

Results



- Target IRT of 5 seconds was reached in 50 sessions.
- Results indicated the percentage of correct bites in treatment differ from baseline and removal treatment.
- We observed an increase of percentage of correct bites for each target IRT.
- Treatment had to be stopped and we have no more data for an ABAB design.

Discussion

The connected fork provided reliability of data and permitted the reinforcement of behavior with short IRT in real time. With this protocol, behavior was shaped and could appear spontaneously without any artificial cues or prompts. For future research, data collection on the number of physical and verbal prompts could analyze the repartition and efficacy of each. An ABAB design with maintenance and generalization phase should also be planned. Social validity would be measured by children, parents and educators.

References

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