

NeuroRehab Evidence Database

Target Area: Challenging Behaviour

Neurological Group: Traumatic Brain Injury

Dixon et al. (2003). Self-control and the preference for delayed reinforcement: An example in brain injury. *J Appl Behav Anal,* 36(3): 371-374.

RoBiNT score - 16/30

Method / Results

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Study Type: SCD. ABCBCBCBCB design (A=natural baseline, B=choice baseline,

C=activity preference training).

- Population: n=1. Eric, male, age 21.
 Sustained a brain injury as the result of a motorcycle accident.
- **Setting:** Patient's bedroom within a rehabilitation facility.

Target behaviour measure/s:

• Engagement in hand-open behaviour (in seconds). This was operationally defined as the arm being no less than 3 inches from the torso, and none of the fingers making contact with the palm of the hand. Hand-open behaviour was recommended by his physical therapist, as Eric typically walked with his hand in the shape of a fist with his arm wrapped around his torso.

Primary outcome measure/s:

• No other standardised measure.

Results: The duration of hand-open behaviour changed from initial 5-43 seconds during baseline, to the entire performance goal 190 seconds by the end of the treatment. Result suggests a shift in preference to larger delayed reinforcers and an eventual preference for the open-hand requirement option. This was represented graphically but statistical analysis was not performed.

Rehabilitation Program

Aim: To improve a willingness and participation in physical therapy sessions.

Materials: Two index cards representing choice consequences, as well as a "Simpsons" cartoon used as a reinforcer.

Treatment Plan:

- **Duration:** Not specified in the report.
- **Procedure:** All sessions consisted of 6 to 12 trials, depending on condition. 131 trials were conducted. No further detail provided.
- Content:

<u>Natural Baseline:</u> Single verbal prompt for the patient to engage in hand-open behaviour and recording its duration. Sessions conducted until a relatively stable duration of the behaviour was observed.

Choice Baseline: The patient given the option to choose between a small immediate reinforcer, or a large delayed reinforcer that also had a response requirement (190 seconds of handopen behaviour). The choice was made by making physical contact with one of two cards. Activity Preference Training: Two new cards presented to the patient. The delay was identical for both cards (the time delay between choice and presentation of reinforcer). If the patient chose one card, reinforcement was delivered at the end of the delay independent of hand-open behaviour. If he chose the other card, he was verbally prompted to open his hand during the delay, and reinforcement was delivered only if his hand remained open from that point to the end of the delay. The response requirement was progressively increased by 28 seconds following three consecutive selections in which the patient chose the card associated with the hand-open requirement. Multiple probes of choice baseline: A probe of

Multiple probes of choice baseline: A probe of choice baseline condition administered after every 12 trials of activity preference training.