

## **Impulsive decision making measured by a delay discounting task in IntelliCage**

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Impulsive decision-making is determined by low tolerance to delays and insensitivity to delayed consequences. It is generally measured in a delay discounting task in which a choice between a small and soon (SS) and a large and late (LL) reward is required. The delay after which the large reward becomes available increases with the number of trials until individuals shift their choice to SS reward. A steeper shift indicates higher impulsivity.

We developed and tested a delay discounting protocol that assesses impulsive decision-making of socially housed mice using the fully-automated testing device IntelliCage. In the first phase (A) mice have free access in each corner to water or saccharine 0.5% solution. When the preference for saccharin (measured as % of licking) is established, its access is progressively delayed of 0.5 sec per day (B) until all groups shift the preference to the SS reward (% licking on the saccharin side <50%). Then, free access to both rewards (C) was given to re-confirm the preferences for sweet solution.

IntelliCage is a valid tool to assess preference for sweet solutions and to test for tolerance to delay involved in decision-making mechanisms in different mouse strains and mutant lines.

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