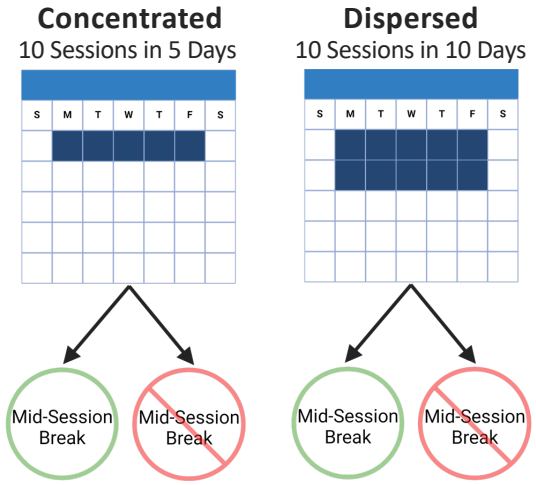
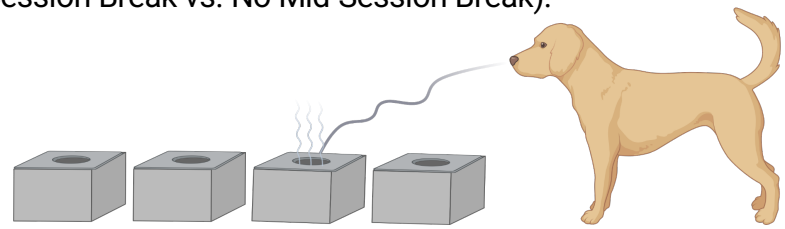
Effect of Training Schedules on Initial Odor Discrimination Training in Detection Canines

Purpose-bred Labrador retrievers naïve to odor detection were trained to respond to a target odor using four training schedules.

All dogs completed 10 training sessions using a scent-box lineup, progressing through different levels of training across sessions.

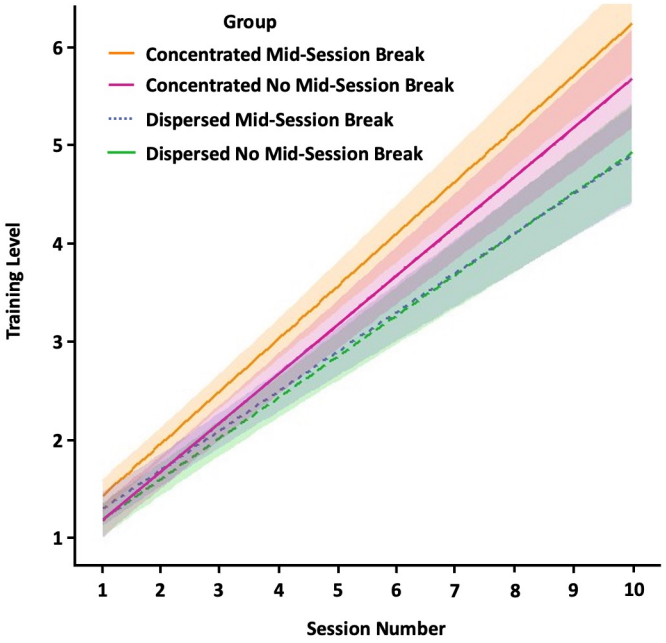
Training schedules differed in the number of days in which training was conducted (Concentrated vs. Dispersed) and whether dogs received a short break in the middle of a training session (Mid-Session Break vs. No Mid-Session Break).





Key Findings:

- Concentrated Groups learned faster than Dispersed Groups, but all groups achieved the intended training goal (i.e., successful discrimination of the target odor) at the end of 10 sessions.
- Mid-session breaks did not affect task acquisition but did improve retention in the Concentrated Groups.
- Dogs in the Concentrated Mid-Session Break Group rested more during their second break of the day.
- Across all groups, dogs with higher reward arousal progressed further through training.



Recommendations:

1. Complete multiple training sessions a day to improve training efficiency and task acquisition.
   - High drive dogs need an outlet to expend energy for optimal learning during training sessions. This is likely why Concentrated Groups exhibited faster acquisition than Dispersed Groups because excess energy spent during the first session promoted better learning during the second session.
2. Concentrated schedules with mid-session breaks are best for task acquisition and retention but all dogs regardless of training schedule learned the odor discrimination.
   - Although concentrated schedules have greater projected benefits, all schedules were effective at training the dogs to discriminate the target odor. Thus, training schedules should be selected based on best fit for an organization's internal logistics and available resources.
3. Temperament evaluations could help determine allocation of training resources.
   - Dogs with higher reward value require less time and resources to complete initial training.
   - Dogs with high kennel agitation may not benefit from mid-session breaks.

Full Manuscript: Impact of Variations in Training Schedules on Dogs' Acquisition and Retention of an Odor Detection Task (2024)

This research was funded by the U.S. Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Detection Canine Program Office under contract #70RSAT19CB0000002. This work represents the position of the authors and not necessarily that of DHS.