Background
- Strokes usually damage one cerebral hemisphere, resulting in lateralized functional impairments.
- Middle cerebral artery occlusion (MCAo) is the most common cause of ischemic stroke in humans.
- Corticostriatal axonal projections, often damaged in MCAo, relay information from the cortex to the striatum, which relays input to the basal ganglia. Corticostriatal axons are known to exhibit a plastic response after ischemia.
- Stroke recovery has a complicated timeline and can be influenced by factors such as physical rehabilitation.

Study Overview

**Standard Rehab**
- 6 weeks reach training with the affected limb

**Control**
- 6 weeks of sessions in the training apparatus but with no reaching

![Standard Rehab Diagram](Image)

![Control Diagram](Image)

Rehabilitative reach training reduces contralesional projections and tends to increase ipsilesional projections after middle cerebral artery occlusion

![Graph](Image)

Conclusion
- Rehabilitative reach training reduced projections in the dorsolateral contralesional striatum in rats after MCAo compared to the control group.
- Rats who underwent rehabilitative reach training showed a non-significant increase in dorsolateral ipsilesional projections and a non-significant decrease in contralesional cortical projections compared to the control group.
- These results indicate that rehabilitative reach training shifts striatal projections to the ipsilesional striatum and suggests contralesional striatal growth may be compensatory.

Future Directions
- A larger sample size could be used to further investigate the increased trend of ipsilesional projections after rehabilitative reach training.
- Non-paretic limb training and reach training were also investigated in an overarching study. Data from these groups will also be examined.

References:

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