



## Background

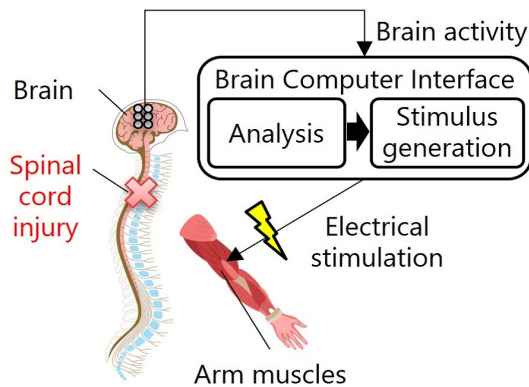
Restoration of movement in people with paralysis due to spinal cord injury is important for improving well-being. NTT is working on a BCI (Brain Computer Interface) that electrically stimulates arm muscles based on brain activity in order to restore muscle coordination movements such as eating.

## Summary

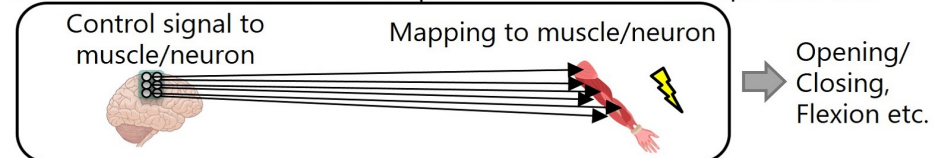
We have succeeded in developing a highly accurate model of muscle synergy, a muscle coordination control mechanism in the spinal cord. It is expected that the model will enable learning of muscle coordination movements and reacquisition of movements such as drinking water from a glass.

### Objective

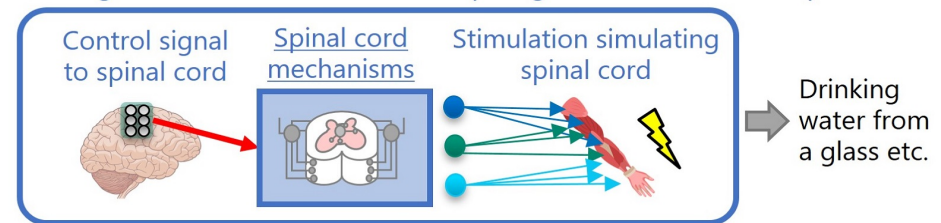
Restoration of motor functions impaired by spinal cord injury through electrical stimulation of muscles based on brain activity.



Conventional: Direct control of muscle stimulation by cortical activity prevents restoration of movements that require coordination of multiple muscles.



Proposed: Transferring spinal cord mechanisms of past self and others, enabling restoration of movements requiring coordination of multiple muscles.



## Features

- Modeling of motor nervous system mechanisms enables learning of muscle coordination movements
- By taking brain activity into account, modeling muscle synergy more precisely than conventional method
- Controlling coordinated muscle activity with electrical stimulation using a muscle synergy model

## Future\_benefits

By enabling people with arm paralysis to acquire movements that require muscle coordination on their own, we contribute to a society in which everyone can live actively.

## Collaboration partners

Tokyo Metropolitan Institute of Medical Science

## Exhibiting Company

NIPPON TELEGRAPH AND TELEPHONE CORPORATION

## Contact

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