

PRINCIPLES OF NEUROPLASTICITY



In neurologic rehabilitation we rely on neuroplasticity to help encourage and promote recovery.

- **Use It or Lose It:** Failure to use certain brain connections for an extended period of time can weaken those connections.
- **Use it and Improve It:** Practicing a skill often will strengthen the neural connections over time.
- **Specificity:** Learning how to do a specific task by targeting the brain in a way that will produce a specific result.
- **Repetition:** Repetition for a newly learned or relearned behavior is needed for long term changes. An individual requires thousands of repetitions to master a skill.
- **Intensity:** It must challenge the individual. This can be accomplished by the level of difficulty or the number of times an exercise is completed.
- **Time:** The rate of progress happens at different times during recovery. There are times during recovery where improvement may seem faster and times where it will seem slower.
- **Salience:** Tasks must be important to the individual. Motivation helps facilitate change.
- **Age:** Younger brains tend to change more readily. However, research shows we have the potential at any age to learn new skills or relearn lost ones.
- **Transference:** Learning in one situation can generalize to other situations or learning one skill can generalize to a similar skill.
- **Interference:** Practicing maladaptive behaviors may interfere with the ability to relearn a skill the correct way.

SLP

