

# **Principles of Experience-Dependent Neural Plasticity**

(from: Principles of Experience-Dependent Neural Plasticity: Rehabilitation After Brain Damage; Jeffrey A. Kleim and Theresa A. Jones, Feb 2008)

1. Use It or Lose It: Failure to drive specific brain functions can lead to functional degradation.
2. Use It and Improve It: Training that drives a specific brain function can lead to an enhancement of that function.
3. Specificity: The nature of the training experience dictates the nature of the plasticity
4. Repetition Matters: Induction of plasticity requires sufficient repetition.
5. Intensity Matters: Induction of plasticity requires sufficient training intensity.
6. Time Matters: Different forms of plasticity occur at different times during training.
7. Salience Matters: The training experience must be sufficiently salient to induce plasticity.
8. Age Matters: Training-induced plasticity occurs more readily in younger brains.
9. Transference: Plasticity in response to one training experience can enhance the acquisition of similar behaviors.
10. Interference: Plasticity in response to one experience can interfere with the acquisition of other behaviors.