



Sensory Enrichment Therapy™  
Certification Course

# Brain Plasticity



# Plasticity



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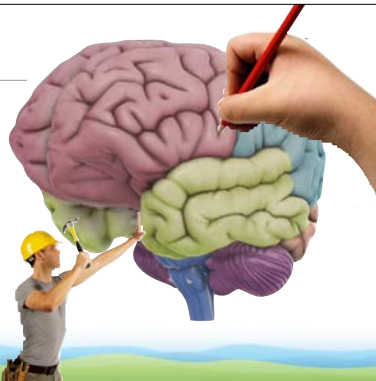
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## Brain Plasticity

- Neural plasticity
- Neurogenesis
- Neuronal migration
- Synaptic plasticity
- Dendritic arborization
- How to increase brain plasticity



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## The Skin

- Protects from infection
- Protects from UV radiation
- Helps regulate temperature
- Feels texture, pressure, pain
- Helps generate Vitamin D



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## The Skin

- Epidermal stem cells
  - Heal wounds
  - Renew skin every month

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## The Bones

- Break
  - Cast or immobilize
  - Rest
- Osteochondroreticular stem cells
  - In the bone marrow
  - Generate bone and cartilage



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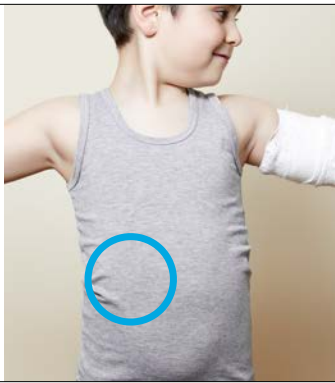
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## The Liver

- Can entirely rebuild itself even if 50% of it is removed
- Hepatic progenitor cells



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## Plasticity



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## Environmental Enrichment Leads To:



- More neurons
- More connections
- More blood vessels
- Increase in brain activity
- Thicker healthier cortex

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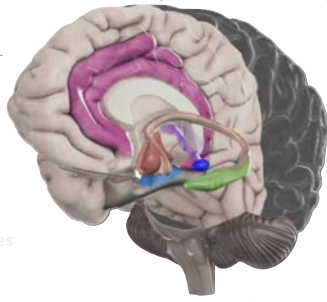
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## Brain Stem Cells

- **Olfactory bulb**
- **Hippocampus**
- **Septum**
- **Striatum**
- **Parts of the spinal cord**
- **Subventricular zone and ventricles**



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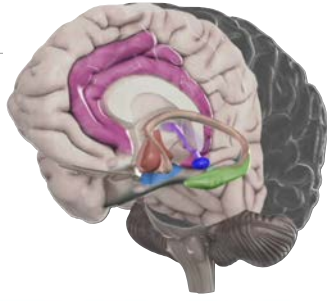
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## Brain Stem Cells

- Renew and repair
- Can become neurons or support cells
- Differentiate and mature within weeks



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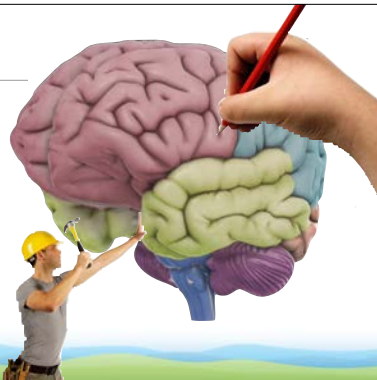
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## Brain Plasticity

- Ability to alter itself in a way that makes lasting changes to its physical structure, even into adulthood
- Neurogenesis
- Neuronal migration
- Synaptic plasticity
- Dendritic arborization



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## Brain Plasticity

• Ability to alter itself in a way that makes lasting changes to its physical structure, even into adulthood

- **Neurogenesis** ..... Ability to generate neurons
- Neuronal migration
- Synaptic plasticity
- Dendritic arborization



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## Brain Plasticity

• Ability to alter itself in a way that makes lasting changes to its physical structure, even into adulthood

- Neurogenesis
- **Neuronal migration** ..... Ability of new neurons to migrate to their final destination, usually along a path through the white matter
- Synaptic plasticity
- Dendritic arborization



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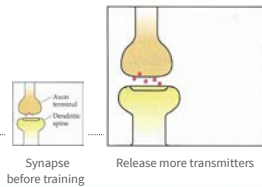
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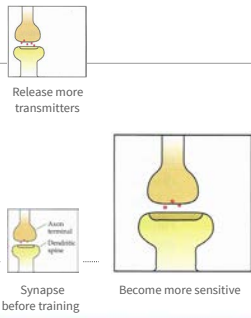
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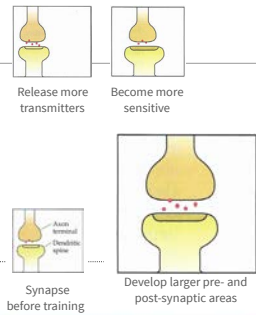
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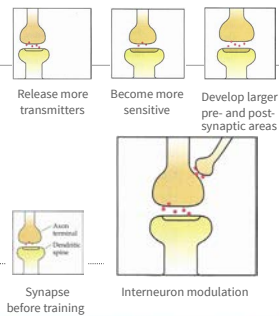
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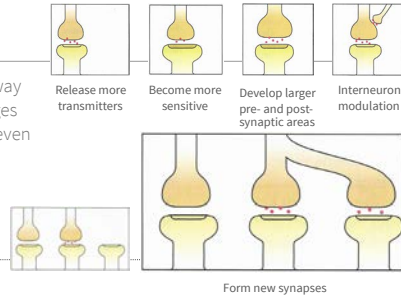
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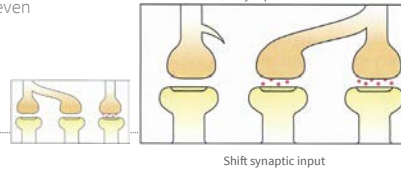
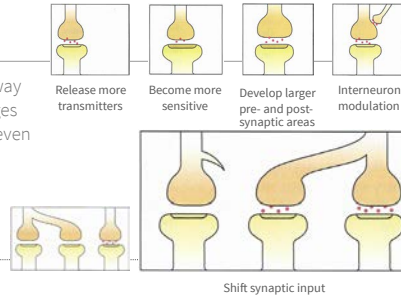
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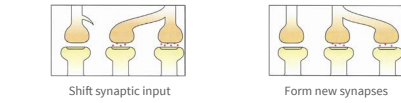
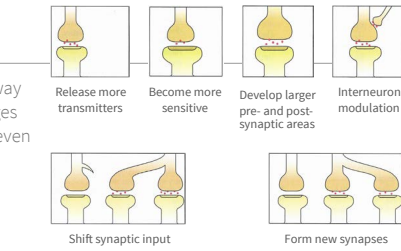
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## Brain Plasticity and Environmental Enrichment

### Sensory Enrichment Therapy™



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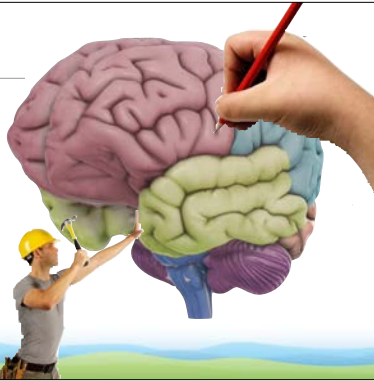
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## Summary

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