



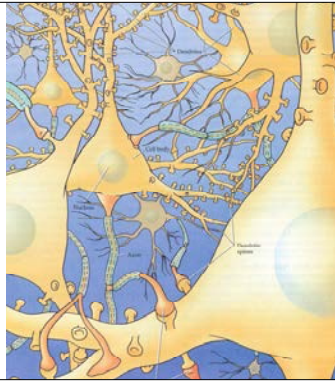
Sensory Enrichment Therapy™  
Certification Course

# Brain Chemistry



## Brain Chemistry

- Neurons communicate with:
  - Electricity
  - Chemistry
    - Serotonin
    - Dopamine
    - Norepinephrine



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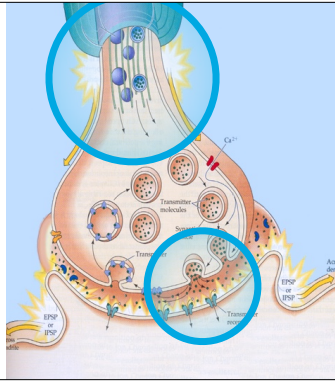
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## Brain Chemistry

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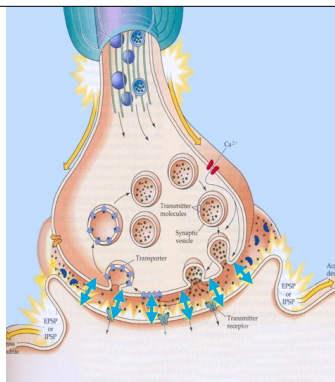
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## Brain Chemistry

- Neurons are not attached
- 3 advantages:
  - Control where the signal stops
  - Modulate the signal strength
  - More room for change



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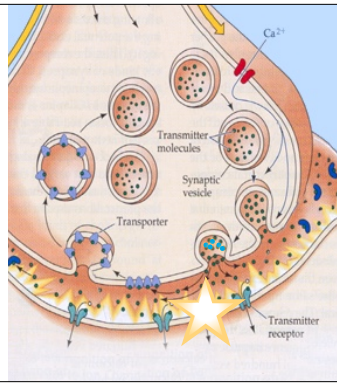
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## Brain Chemistry

1. Electrical signal travels along axon
2. Electrical signal is translated into chemical signal
3. Chemicals are released into synaptic cleft
4. Chemicals attach to next neuron's receptors
5. Chemical signal is translated into electrical signal
6. Chemicals are re-absorbed by sending neuron for later use



mendability.

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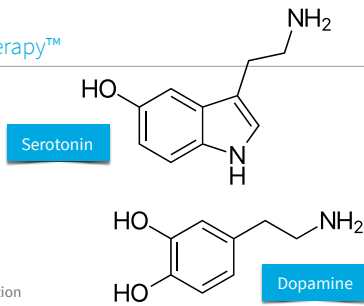
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## Sensory Enrichment Therapy™

- Two main neurotransmitters:

- Serotonin
- Dopamine



- Well documented:

- Role
- Impact on the brain
- Connection to sensory stimulation

mendability.

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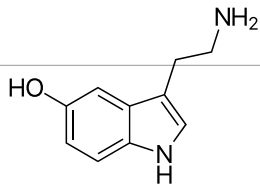
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## Serotonin

- Manufactured in

- Central nervous system 10-20%
- Intestines 80-90%



mendability.

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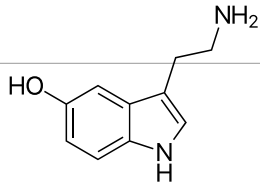
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## Serotonin

- Roles
  - Dealing with stress
  - Social awareness
  - Learning
  - Sensory input translation
  - Thermoregulation
  - Sleep
  - Feeding



- Immune system
- Movement
- Neurogenesis

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## Serotonin



- Impact of massage on serotonin, cortisol and dopamine
- The groups included:
  - Depression and depression-related disorders
  - Pain syndromes
  - Autoimmune conditions
  - Immune conditions
  - Normal stress conditions



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## Serotonin



- Impact of massage on serotonin, dopamine and cortisol
- The groups included:
  - Depression and depression-related disorders
  - Pain syndromes
  - Autoimmune conditions
  - Immune conditions
  - Normal stress conditions
- **31% decrease in cortisol levels** (stress)
- **28% increase in serotonin levels**
- **Immediate and long-term improvements in the majority of symptoms**
- Sensory Enrichment Therapy includes massage-type activities and many other touch activities to help the brain's serotonin function

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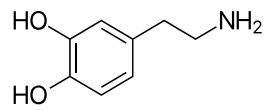
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## Dopamine



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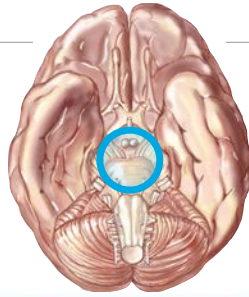
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## Dopamine



- Manufactured in
  - Ventral tegmental area
  - Substantia nigra
  - Hypothalamus



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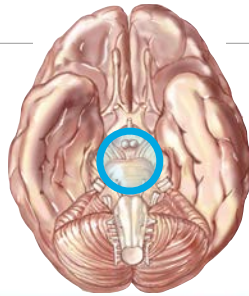
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## Dopamine



- Roles
  - Movement
  - Memory
  - Sleep
  - Mood
  - Pleasurable reward
  - Behavior
  - Cognition



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