NE, DA, and 5-HT neurotransmission influences cortical and subcortical function, suggesting key roles in the neurobiology of ADHD [1][2]

## Physiological Function of Monoamine Neurotransmitters

**DA**
**Origin:** Ventral tegmental area

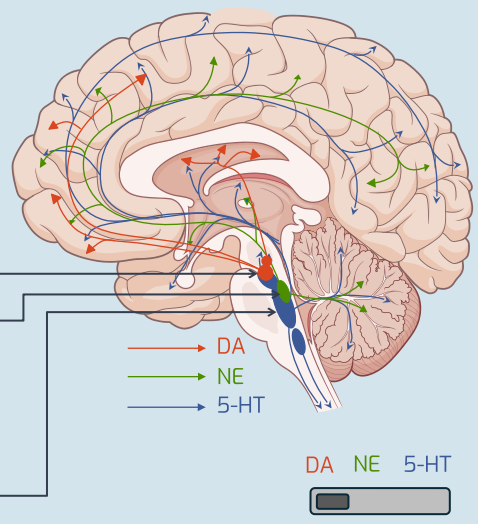
**Physiological functions:** Movement, mood, attention, learning and memory, reward processing[3]

**NE**
**Origin:** Locus coeruleus

**Physiological functions:** Attention, arousal, signal-to-noise processing, mood regulation, and stress response[3]

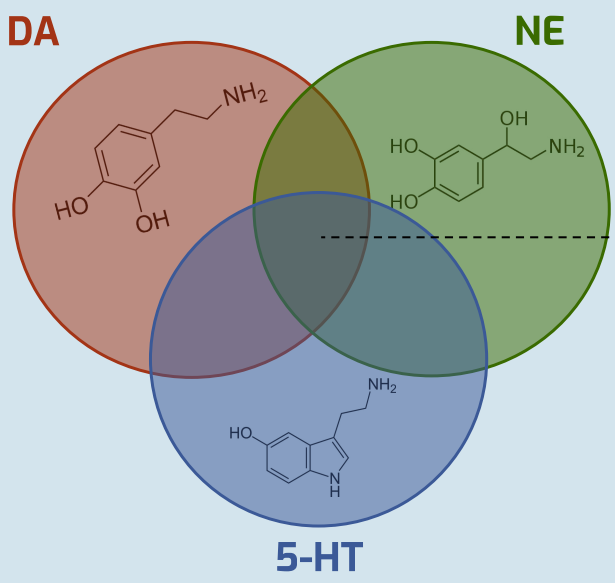
**5-HT**
**Origin:** Raphe nuclei

**Physiological functions:** Mood, perception, appetite, aggression, anxiety, and reward processing[4]




[Toggle between the neurotransmitters to show their neural circuit and how they impact physiological function]

## The interplay between NE, DA, and 5-HT



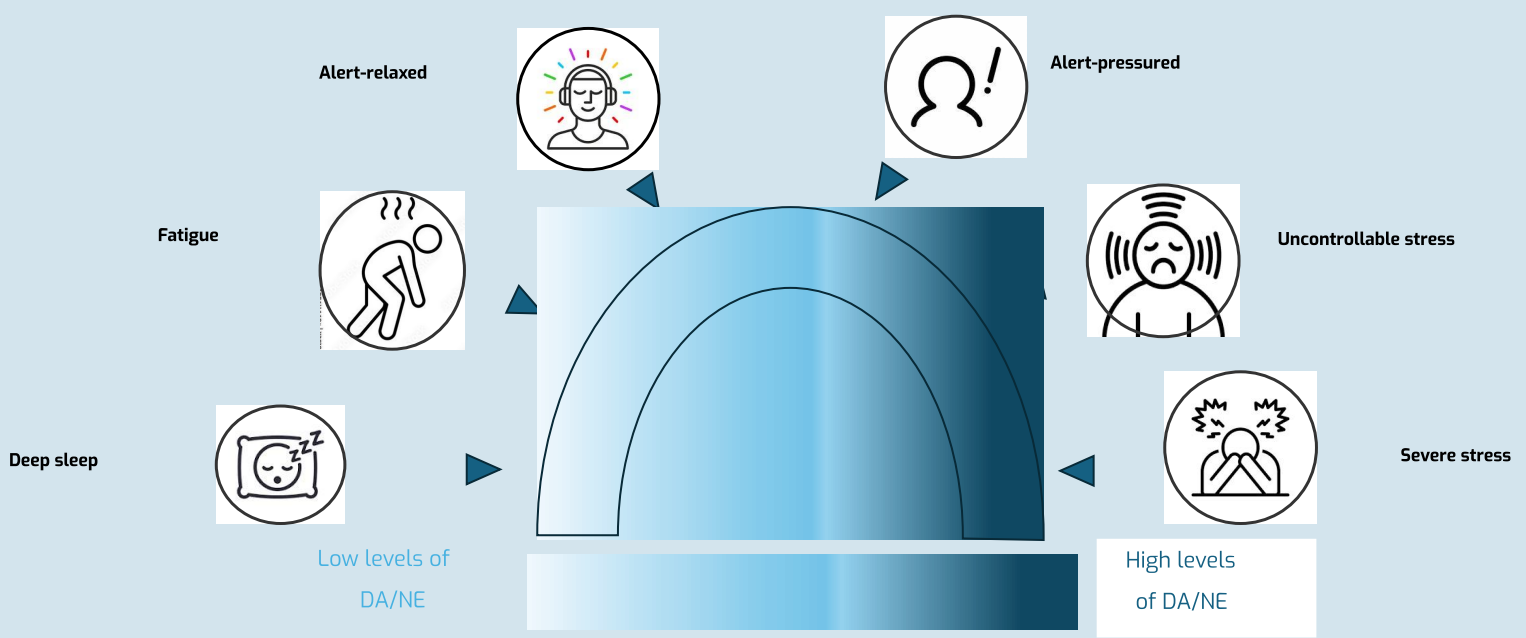

**ADHD Core Symptoms:**
Impulsivity/hyperactivity
Inattention[5]

**ADHD Associated Features:**
Emotional dysregulation
Executive dysfunction[5]

**Major Comorbidities:**
Anxiety[6]

## The Optimal Range of Monoaminergic Activity: NE and DA

There is an inverted U-shaped relationship between arousal and task performance, with task-directed behavior requiring optimal regulation of arousal to achieve good performance




[Slide along the arrow to show symptoms that occur with varying levels of DA/NE]

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