

## Heart Rate and What Occurs

*Here is the information regarding heart rate connection to brain functioning of Dr. Perry's workshop.*

### **70-90**

**NeoCortex activation.** The person is calm and has the ability to process abstract thoughts and ideas. The NeoCortex area of the brain is responsible for reasoning, problem solving, abstraction, and secondary sensory integration are processed in the brain. Developmental of this area of brain activity begins in childhood and fully matures in adulthood.

### **90-100**

**Limbic activation - Freeze State**

The person is able to process concrete thoughts, ideas or feelings.

They are in a state of alarm. The limbic area of the brain processes memory, emotional regulation, attachment, affect regulation. Primary sensory integration. Developmental activity begins in early childhood and its functional maturity occurs at puberty.

### **101-110**

**Limbic-mid-brain-Vigilant State.**

Person can be emotional but are in a state of alert.

### **111-135**

**Lower midbrain and brain stem activation. Flight state.** Person is reactive and in the state of fear.

Diencephalon-between the limbic and brainstem. Motor Control, secondary sensory processing.

Developmental activity begins to develop during infancy and its functional maturity occurs at childhood.

### **136-160**

**Autonomic brainstem activation. Fight State**

Person is reflexive and in a state of terror. This is a basic survival mode.

Developmental activity for this part of the brain begins to develop in-utero and it's functional maturity occurs at infancy.

Once a person begins to function below the limbic area of the brain and begin to function into the brainstem they are unable to understand language, they will grunt, rock, or communicate with other non-verbal communication.

**More common in males (going through the stages):**

**Calm-cooperative. No problems.**

**Alert-vigilant.**

**Alarm-resistant.**

**Fear-defiance.**

**Terror-aggression**

**More common in females (going through the stages):**

**Calm-cooperative. No problems.**

**Alert-Avoidance.**

**Alarm-Compliance.**

**Fear-Disassociation.**

**Terror-Fainting.**

**This information is according to Dr. Bruce Perry's research working with child trauma.**

**For more information, log onto [www.childtraumacademy.org](http://www.childtraumacademy.org)**

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