

## Sexual Response Cycle

Prior to the 1950s and 60s we didn't know much about sexual arousal and there were many sexual myths about the human sexual response, including misunderstandings about the body and orgasm.

In the 1950s and 60s sexologists Virginia E. Johnson and William H. Masters began pioneering research into the Human Sexual Response. For the first time sex was directly observed and recorded in a scientific setting. Masters and Johnson based their research on over 10,000 sexual cycles and observations of hundreds of couples having sex. Their findings were published in their 1966 book 'Human Sexual Response' which today can still help us understand what is happening during sex.

Masters and Johnson created The Sexual Response Cycle, a four-stage model that explains the sequence of physical and emotional changes humans go through when participating in sexually stimulating activities. Below is an explanation of the model including neurobiological processes.

Knowing how your body responds during each phase of arousal can help enhance your sexual enjoyment. It can also help identify potential sexual dysfunction, which may benefit from treatment or consultation with a medic or psychosexual practitioner.

### Phase 1 - Excitement

Arousal or initial excitement can occur as a result of external stimuli such as touching or kissing a partner or viewing a sexual image. Arousal can also occur from an internal stimulus such as thoughts, memories or fantasy.

When stimulated, the Amygdala, a part of the brain in the limbic system responsible for *reward* and emotional regulation, controls arousal. This is the part of the brain that is responsible for triggering an erection via vasodilation, widening of veins and arteries that increase blood flow in men and women, engorging the genitals and leading to a flushed appearance.

Also during arousal the nipples become erect, muscle tension increases, both heart rate and breathing quicken. Also there are some specific changes relevant to men and women:

For women:

- Widening of the vagina and engorgement of the clitoris
- Change in angle of the uterus
- Vaginal lubrication

For men:

- Erection of the penis
- Release of lubricating fluid
- Swelling of testes and tightening of the scrotum

### **Phase 2 - Plateau**

During plateau the changes in Phase 1 intensify. Blood flow increases, heart rate increases, and muscle spasms begin in the feet, face and hands.

### **Phase 3 - Orgasm**

This phase is the climax of the response cycle and also the shortest part of the cycle, generally lasting only a few seconds. Features of this phase include involuntary muscle contractions, muscle spasms in feet and a sudden forceful release of tension.

During female orgasm the muscles of the vagina and uterus undergo rhythmic contraction.

During male orgasm muscles at the base of the penis rhythmically contract causing ejaculation.

### **Phase 4 - Resolution**

During this phase there is a sense of fatigue, wellbeing and relaxation, the body returns to its normal level of functioning. The engorged parts of the body return to their normal size and colour. Masters and Johnson identified that in men a period of recovery is required prior to any further sexual activity however some women are capable of quickly returning to orgasm phase.

Neurobiological changes in cerebrospinal fluid and bloodstream during orgasm include an increase of pleasure and bonding chemicals such as Oxytocin, Prolactin and Noradrenaline. These combinations of neurotransmitters create the pleasure and reward aspects of sex and increase partner bonding.

### **Further Reading:**

Masters, W. H. & Johnson, V. E. (1966) Human Sexual Response. New York Academy of Medicine, Boston

Rowland, D. L. (2006). Neurobiology of sexual response in men and women. CNS spectrums, 11(8 Suppl 9), 6.