

# Magical Relationship between Love and Biology

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## ABSTRACT

Love is a very pleasant feeling that everyone wants. It is also very pleasant to feel in love with someone. Many times it happens to us that we suddenly see someone and our heart beating fast and have a pleasant feeling and people say he is falling in love. Most people consider it as a normal process or as a normal phenomenon. But this normal phenomenon is actually due to sudden chemical changes in our body. However the story of love is not limited to such a small incident. According to scientists and researchers, love has three parts, attraction, attachment and lust. In these three processes our body goes through many changes. These changes are brought about by hormones, pheromones, neurotransmitters, gain etc. Dopamine, serotonin, oxytocin, vasopressin, sex hormones and many more chemicals play a role in the whole process of love. Where oxytocin, in female is responsible for falling deeply in love, while vasopressin in male induces attachment to a particular female. Pheromone affects sexual attraction in a number of ways including through human biology and the menstrual cycle.

**KEYWORDS:** Attraction; Dopamine; Hormones; Love; Oxytocin; Pheromones

## INTRODUCTION

"The science of love", these words seem somewhat confusing, but it is true that the feeling of love is a biological process.

Love! Have you ever felt it! The feeling of getting everything by losing yourself. It happens many times that whenever we are attracted towards a particular person and feel love towards him, then our consciousness immediately becomes active. Presence of such a person fills the mind with infinite peace and we experience happiness. However It is not necessary to have such an attachment with a person only, this attachment can also be with animals, particular places or special objects. Science is hidden behind this very simple and sudden incidence. This process of love depends on many things like hormones, pheromones, genes, neurotransmitter, seasons, etc.

Many researchers have been done in this field by scientists and the things that have been revealed show that, there is no "beating heart" behind the attraction towards a person, but rather hormones, pheromones, genes, neurotransmitter, seasons, etc. are present behind it. Many researchers believe that the heart has nothing to do with love, but the chromosomes and chemicals release in the body (hormones) and from the body (Pheromones) are responsible for it. It is believed that, the hormones testosterone, estrogen, oxytocin, vasopressin, pheromones, dopamine, etc. are responsible for attraction, attachment and lusting process. Other than this some types of neurotransmitter are also play major role in this process. Researchers believe that, when we attract towards any individual then level of dopamine in blood is increased. Dopamine plays important role in this process,

while hormones emanating from the hypothalamus nuclei, vasopressin and oxytocin have an important role in planting us with someone special, or with friends, or with family, whereas sex hormones play an important role during lust. Apart from these different types of genes, pheromones, season, etc. are also responsible for inducing the feeling of love. Pheromones attract two individuals to each other, while weather also has a special effect on the human brain. Although weather also exerts their effect on animals, specially on seasonal breeder animals. Although these entire phenomenon is also common in animals but in human these phenomenon is more complex than the animals.

We have heard many times that "when we are in love with someone than we don't feel hungry and can't sleep". These things look like a filmy dialogue but this is absolutely true that after falling in love it becomes normal, for which your hormones are responsible. From biological point of view when you are with your loving one or be with whom you like or by spending time with someone you love, than only her or his presence causes hormone drift in your body, increases blood circulation, reduce mental stress as well as increases two special types of hormones dopamine and serotonin. These hormones provide us pleasurable feelings and relax mind. Dopamine is also acts as painkiller medicine. Researchers believe that, being close to whom we like or love, reduces the risk of variety of diseases like headache, Cancer, heart disease, hypertension, etc. while in contrast of this situation increases the risk of such diseases. So you must know well that the love is how much essential in our life.

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## STUDY

When we are attracted toward someone or say when we fall in love with someone than many chemical changes occur in our body. Just getting attracted towards someone is not just a simple process but in biological point of view, it is a complex process. The reason behind it may be

### 1. Role of hormones:

To be attracted to someone or to fall in love with someone, which we say in general language is that, "After seeing someone, ringing in the heart". For this situation different types of hormones are responsible. In this situation we can say that love is not only emotion. According to Dr. Helear fisher, leader of the team of scientists doing research on this subject, whole process of love can be divided into three parts. i.e. Attraction, attachment and lust and all these three process different types of hormones are responsible. Attraction towards someone then hypothalamus releases dopamine, norepinephrine. When we spend time with our love one then level of these hormones increases significantly. It make us giddy and energetic as well as it suppress hunger or appetite and also cause Insomnia, so we say "when we are in love with someone than we don't feel hungry and can't sleep". It is possible due to norepinephrine; it is responsible for flight and fight and due to this insomnia is caused.

The second part of love attachment. Attachment is the prominent factor in long term relationship. Whereas attraction and love are pretty much exclusive to romantic entanglement, parent infant bonding, social cordiality, and many other intimacies as well. For attachment process there are two types of hormones secreted from hypothalamus nuclei are responsible i.e. Oxytocin secreted from paraventricular nuclei and vasopressin secreted from supraoptic nuclei. Oxytocin is also called love hormone or cuddle hormone. By the way, these hormones are found in both male and female, but physiology activity of oxytocin in more effective in female. Other than this oxytocin brings contraction in uterus and vagina during parturition and contraction of fallopian tube uterus vagina during sexual intercourse. It is also called milk ejection hormone, it induces contraction in mammary gland muscle. Oxytocin causes contraction in reproductive tract in male during ejaculation in male. If you look at love, oxytocin is more powerful than the vasopressin and this is the reason female goes deep in love but this does not mean that male's love is false or pretend. It is true that the effect of vasopressin is less than that of oxytocin, but its excess amount causes attachment to the particular female to the extent that he too agrees to do anything. If someone touches it or talks, he becomes offensive. Hormone is responsible for such extremes of love. It would be nice to have these hormones secrete there too where hate is shaking. The third part of love is lust. It is inspired by the desire of our sexual satisfaction. It is an integral part of love. In this process there are several types of physical and chemical changes occur in our body. Here hypothalamus and pituitary play very important role. As well as gonad of both sex (testis and ovary) secretes testosterone and estrogen. High level of testosterone increase libido in male whereas this work is done by estrogen in women. Increased level of estrogen at ovulation increases sexual activity [1].

### 2. Role of Pheromones:

Normally pheromones are secreted from the body through special gland. It conveyed recipient through smell, taste,

absorption, etc. Basically these terms applied for sex attractants. Pheromones Plays role in attachment process. Other than human it is also common in invertebrates and vertebrates. Pheromones are odors chemical which attracts opposite sex toward each other. According to German doctor Gustav jager pheromone is lipophilic compound which associated with skin and follicle that mark the individual signature of human odor [2].

This is sex deference ability to smell certain substances to women have great power of olfactory sensitivity to certain odor. The changes in the quality of the odors of human females are progesterone dependent and each stage of menstrual cycle has distinctive odor. Healthy women vaginal secretion show volatile aliphatic acids which are released with regular menstrual cycle whose concentration increase during mid cycle [3]. It is believed that whenever we are with when we are very close to someone, our emotion is at its peak. Our emotional status induces the sebaceous gland for secretion of odors chemical (pheromones). Secretion of these chemicals increases during emotion, stress and sexual arousal. These odors chemical attract opposite sex. When two people are coming close to each other and both are in the same sense and emotion, then these chemicals are secreted from both their bodies and strengthen their bonding [4]. Other than this these chemicals also induce the secretion of dopamine and associated hormones and that's why pair feels very pleasant at that time and it pokes sexual desire. In Western part of America an experiment has done on " Piyari bol" species of mice and based on this research, it was told that, there is very important role of these chemicals (pheromones) in human relationships and love. They told that juggling with each other and physical touching or touching sense increase secretions of pheromones.

Pheromones are effective in bringing each other closer and at the same time they induce secretions of hormones like testosterone and estrogen. These things have been proved by experiment.

### 3. Genetical aspect to fall in love:

Scientists and Researchers claim that, not only hormones and pheromones, but chromosomes and genes are also responsible for the love and its feeling.

Dr. James phoular and his colleagues at the University of California presented a conclusion of their long research. He said that there is a special type of gene behind love. According to the report of research which individual having specific DRD- 2 gene they have a strong desire for others, and if by chance this same gene is present in the body of the opposite sex and meets, then the desire for each other starts hitting. Dr. Phoular clarifies that the gene indicated for love is not necessarily in everybody, but it shows its effect wherever it happens and searches for the body where it has a counterpart and when they meet, then genes registers his presence. A report published in a journal named "Proceedings of national academy of sciences" clarifies that the genetic structure in each body is related to building the next generation, as well as determining its behavior and it is also responsible for Love or attraction towards someone. Justin Garcia, who researched at Windhuman University, even says that love is love, in addition to this; genes are hidden behind cheating in love. According to Justin Garcia some peoples are genetically programmed for cheating in

love that means in his DNA some types of genes present which are responsible for cheating. He tells that Dopamine receptor D-4 gene is responsible for cheating in love. This gene directly affects the brain which brings change in behavior of individual and due to this change; the bond of long-lasting love is loosened.

#### 4. Role of brain in love:

It is truth fact that the hormones and Pheromones are essential for getting feelings of love but it is also not to be forgotten that the master mind of all these things is our brain. Falling in love, being attracted, attached, and entire aspects of love and during this time all the changes occurs in the body is made by brain or induced by brain[5]. It is a research fact that love is first born in the mind. A protein named Fos protein which is released from brain. This protein causes activation of nerve cells. When this situation occurs in both the sex than we can say both are crazy in love. Dr. Susan Charles, who researched and explained the importance of emotions at the University of California, she tells that relationship thrives on the feelings that are formed once towards someone. In her interesting studies at the University of California more than half of were women. These groups with different ages were suddenly exposed to each other. After repeating this process several times, Charles stated that as a result, everyone's feelings were not the same for everyone. Seeds of love burst when two people are feeling alike. Charles says that, if a girl is liked by someone, it does not mean that she will be liked by the other and it's not even necessary that the girl likes him. But it is certain that two people will like each other at some level. The same feeling of emotion is love.

Whenever we falling in love with someone then our brain gives physical and emotional response by different ways. Such as, racing heart, sweaty palms, flushed cheeks, feeling of passion and anxiety. Other than this in the initial phase of romantic love, stress hormone (cortisol) secreted. Increased level of cortisol causes lower the level of serotonin. Now the lower level of serotonin is responsible for intrusive, terrors of early love, maddeningly, preoccupying thought. While being lover struck releases dopamine in excess amount. Excess amount of dopamine strongly activates reward circuit (ventral tegmental area) helping to mate love pleasure.

#### 5. Effect of season or weather on love:

The relationship between weather and love is very deep. While summer increases the distance, winter brings people closer, while spring makes the heart crazy. In the opinion of scientists, spring is the season of energy. Stagnation of cold not only reduces physical activity but also normal speed. According to scientist of Japanese Nogoda University spring makes the mind elated in such a way that even married couples bring camaraderie in their romance. Psychologist of

Harvard University says that. Body touch during spring season prevents sperm death. To further clarify this, did an experiment on mice named Pyari bol. For this, scientist did create artificial spring season in laboratory then the female rat started leaping towards the male rat. Scientist believes that spring season causes intoxication in human too. Research found that, Nitric oxide is very effective to control of libido in males. This chemical works as neurotransmitter to stimulate and control the methodology of mind. Scientist found that, as soon as nitric oxide-forming enzymes are inactive, spontaneously embraced male and female mice separate. This was the only important thing that which made the matter of love stemming from chemistry.

Scientific and research facts show that if you want a long life, then love someone to the extent of madness. Love not only inspires you but also changes the internal actions. Which you do not want initially but later you want to. There is love chemistry behind it too.

#### CONCLUSION

After considering all the related aspects, we can say as conclusion that the incident of passion, love, attraction, attachment towards someone is not just a coincidence but a complex biological event. In which Hormones, Pheromones, Neurotransmitters, genes as well as Weather and season also have a significant role. All these things are enough to make anyone crazy about someone.

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