

Release of Endomorphin Hormone and Its Effects on Our Body and Moods: A Review

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Abstract—Endorphin is a hormone and types of endorphins are found in our body. Endorphin is like morphine in structure and effects and has same binding site in the brain cells or receptors. Different endorphins are released during different exercises or eating food or during sex, meditation etc. Anxiety is a disease which is widely spread and can be treated with this endogenous endorphin without using any medication or tablets, only the thing is that we must know how and when endorphin is released. It is in our hands to release endorphin where and when we need.

I. INTRODUCTION

OUR body produces hundreds of chemicals to make sure the body works properly. Of these many chemicals hormones are one of the most important one because these hormones must be present in the exact amount in the blood, as hypo-secretion or hyper-secretion of hormones may cause diseases and abnormalities. There are various hormones that some people even don't know. Without hormones the body will not work properly or will not do its functions normally. There are hormones which act on target organs and not other organs. Even the release of these hormones is based on the typical stimuli by typical organ or any parameter. But there is a hormone which is released on several different stimuli, or moods or stress which is known as Endorphin.

A. Endorphins

They were found in between the 70's and in 1977 Roger Guillemin and Andrew W. Schally won Noble price for their research and findings on endorphins [10]. Endorphins are endogenous opioid peptides that function as neurotransmitters [1]. Endorphin has the same structure as that of Morphine drug which is taken by the people to reduce pain signals. In reality endorphins are endogenous Morphine, a morphine released within the body by pituitary gland. *Endo – endogenous and orphin – morphin*, means morphine secreted within our body [2].

II. FACTORS STIMULATING THE RELEASE OF ENDORPHIN

Endorphins are produced and released from the pituitary gland. They are released during continuous exercise, fear, love, music, chocolates eating, laughter, sex, orgasm etc. As

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we do continuous exercise for more than 30 minutes than there is release of these hormones [2].

When there is high stress in our mind, this stress stimulates the release of endorphin hormones which calms the brain in stress situation and brings the feeling of happiness [2].

During an accident or injury our body is in high pain and these signals of pain tend to release the endorphins from the pituitary gland. Pain may be of any kind it initiates the release of endorphins. During acupuncture when needles are inserted at prefixed points it causes pain and releases pain signals which stimulates pituitary gland to release endorphins [3, 4].

Endorphin seems to be released during meditation, high laughter and even if we eat food which is too spicy or with high chilly content.

During sexual activity or at the time when sexual intercourse is at the peak there is release of endorphins which gives us the happy or blissful feeling after sex.

Consumption of chocolate, peppers, green chillies, spicy food also produce release of endorphins.

All the factors which initiate the release of endorphins are related to different exercises like physical exercise or laughing or meditation etc. Even sex is like a physical exercise with mental involvement.

III. EFFECT OF ENDORPHINS

During continuous exercise there is release of endorphin and the effect is called a runner's high. When the athlete crosses the limit of his exercise then endorphins are released which reduces the pain by stopping the pain signals and the athlete is able to work out for more time even after his threshold limit is over. As we get older and after the age of 40's we lose our nerve tissue resulting in loss of memory, not able to recollect which thing is kept where, but due to exercise new nerve tissue are produced, also increasing dendrite connections which increases memory and stores information accurately [5].

In heart patients who had an attack before, are always advised to do regular exercise, the reason for this is during exercise endorphin is released and it protects the heart from an attack. And if, does the heart attack comes, instead of getting frightened and panic, it gives the patient the strength to fight against it for a long time till he is hospitalized and becomes healthy very soon. There is a very rare possibility that a man who is continuously exercising has an second attack. A positive attitude is generated by the release of these hormones

in the blood.

In acupuncture therapy when needles are inserted at the fixed points in the body, there is pain while inserting not one but several needles due to which endorphin is released [12], which releases the feeling of pain and subject easily goes through this therapy.

During accident or injury when pain impulse reach the spinal cord it stimulates the endorphin release from the brain which blocks the pain signals send by the nerve cells and the patient feels lesser pain feelings. Met-enkephalin and Leu-enkephalin endorphins both having five amino acids in their structure are found in the brain stems and spinal cord which are responsible for blocking the pain signals [11]. During injury or accident due to release of endorphins the patient feels more power within which allows him to fight the injury and persist for a long time. Analgesic tablets are given to reduce pain and endorphin is a natural analgesic present within our body which fights against pain [9]. All endorphins bind to the opioid receptors in brain and analgesic also have an similar affect when taken orally.

In sexual intercourse when endorphin is released, it gives the blissful and happy feeling plus it also acts on your complexion. Due to release of these hormones females look too young and charming than they are. This is the reason why married woman look too charming than an unmarried one. Compare two young girls one who is unmarried and other who is married say for one year before. Note the change and charm in both the girls. It's the endorphin effect which is released during sex that brings the charm and shining on the face of the married girl. People look younger than 10 years because of this endorphin and this is because endorphin reduces or removes superoxide and retards aging process [8].

Now a day there are laughter clubs which involves people who gather in the morning and do the laughing exercise by laughing loudly. Laughter releases the endorphin which does not relieve pain but keeps you happy and increases the power of healing process and keeps you healthy.

Music is heard by people from decades and decades; this music releases endorphins in the blood and changes the mood. Change in mood is directly proportional to endorphin. The bad or depressed mood of patient changes when they are given external endorphin injections [7].

Endorphin also protects us from stress, hypertension, depression and heart attacks. Endorphin is released during stress and hypertension and these endorphins bind to the opioid receptors in neurons which block the release of neurotransmitters and in turn block the pain signals going to the brain [6].

Patients suffering from anxiety are often given oral endorphin containing drugs or tablets. In anxiety there is a feeling of worry, nervousness, unhappy mood; fear of death and all these negative feelings gets converted after taking these pills containing endorphin. By taking these tablets patients feel more healthy and comfortable, will power increases and there is a feeling of wellbeing. These are the effects of endorphin on anxiety.

We conducted one experiment in an anxiety patient where the oral tablets were stopped and more concentration was given on the morning and evening walk i.e. exercise. Continuous 45 minutes of fast walking was practiced daily in the morning and evening, and the results were that there was no need of further more oral tablets. The patient felt more confident, his stress and worry was totally gone.

IV. CONCLUSIONS

In most of the diseases doctors suggest exercises such as walking, running, workouts, laughing exercise, meditation, listening music and all these exercises are responsible for the release of endorphin hormone or they are the stimuli to release this hormone which gives them strength, confidence and gives a good mood to them a mood of well being and happy.

Every exercise practiced is related with this release of well being hormone called endorphin.

In anxiety patients endorphin is given orally, but, instead of taking pills orally one can make use of original endorphin present in the body as a medicine. Only the thing is the subject must know how endorphin is released in his body and what he has to do for it.

Also in anxiety patients music gives a great relaxation to their brain and mind and the patient feel more peaceful and happy, and this is because the effect of endorphin which was released as the music was been played.

Laughing exercise, meditation, music, exercise, workouts all these exercises of keeping the mind calm, feeling confident, happy are related with endorphin release. Instead of medication these exercises can give much better results in the future if followed in proper way. Medication and high dose tablets harm the immune system making us vulnerable to many diseases, but exercise releases endorphin which keeps us healthy happy curing many diseases and it never interrupts with the immune system.

The main problem in studying the hormone is that it remains in the blood for a very few seconds. So the intensity and release of these hormones is very hard to be measured. Progesterone hormone can be measured because it is present in blood, and its concentration changes as the menstrual cycle arrives and completes. But not with this endorphin hormone which stays in blood for very few seconds. The technique to test this hormone has to be researched.

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