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Editorial

Endorphins and Physical Exercise: Euphoria: Addiction

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Endorphins are endogenous morphine, opioids, produced in the pituitary gland in response to physical stress and pain. Out of three endorphins such as beta-endorphin, enkephalin and dynorphin, which binds with μ, k and Ơ receptors situated on the nervous system and immune cells. Beta-endorphin is an abundant endorphin, neuropeptide synthesize and stored in the anterior pituitary gland; precursor of POMC synthesized from anterior pituitary gland in response to psychological stress induced release of CRH (corticotropin hormone) from hypothalamus. POMC is a large protein cleaved to ACTH, beta-endorphin, and MSH.

Beta-endorphin binds with it's μ receptors situated on the central nervous system results in inhibition of GABA inhibitory neurotransmitter and activation of dopamine excitatory neurotransmitter involved in analgesic activity, euphoria, stress reduction and addiction. Endorphins are produced during intense physical exercise leading to psychological relaxed state known as 'RUNNER'S HIGH".

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