

SEXUALITY AND THE SUN

^{1*} Valentin NIȚESCU ,^{2**} Andy PETROIANU,

1. Department of Surgery, Clinical Hospital "Dr.I. Cantacuzino", Bucharest, Romania

2 ** Department of Surgery, Faculty of Medicine, Federal University of Minas Gerais, Brazil

Abstract:

It is known that endogenous and exogenous factors influence sexual intercourse, so exogenous factors, such as the sun, play an important role in the interpersonal relationship.

Sunlight has a direct action not only on the skin of the human body, but also on the neuroendocrine system, by receiving solar waves by the retina a derivation of the brain and the most perfective telereceptor.

Under the influence of sunlight, the pituitary gland and epiphysis activate by the neuroendocrine system the sexual motivation, increases the libido and biological potential of the entire body.

Keywords:

sunlight, pituitary gland, epiphysis, neuroendocrine system, sexual motivation, libido

* Correspondence: 1* Nițescu Valentin, MD E-mail: valentin_nitescu@yahoo.com, Phone:+40740953351

2**Professor Andy Petroianu, Avenida Afonso Pena, 1626 - apto. 1901,Belo Horizonte, MG 30130-005, Brazil,E-mail: petroian@gmail.com,

In spring and summer, when the day is longer, the retina receives and transmits an increased amount of light impulses to the hypothalamus, through the direct retinohypothalamic fibers of the optic chiasm, but also to the cerebral cortex, to the calcarine fissure, occipital lobe, striate area 17 for the analysis of the visual excitation, peristriate area 18 for synthesis and peristriate area 19, where the conscious visual sensation is formed.

Through cortico-hypothalamic fibers it will command by the hypothalamic neurosecretion the pituitary pulsatile discharge of gonadotropins, increasing the secretion of sex hormones, increasing libido and other functions, with an overall general tonic effect, expressed by the desire of more intense experience in the sunny days of spring and summer, when metaphorically speaking we say that "hormones play inside us". The link of the hypothalamus with the limbic lobe and the mesencephalon explains its value in the regulation of sexual behavior.

An important role is also played by the epiphysis which by the pinealocytes, the messengers of the epiphyseal receptors, receives the nervous influx from the hypothalamus, secreting melatonin among other hormones, the photoreceptor hormone. It captures the external light, ensuring both the neuroendocrine accommodation of the body and its adaptation to the circadian parameters imposed by the environment (temperature, atmospheric pressure, light-dark ration sleep-wake) and that influences reproduction, me-

tabolism, neuroendocrine balance, electrolytic balance and so on.

The climate, brightness and nutrition play an important role in the sexual development of the individual. In winter, due to reduced solar radiations, the epiphyseal secretion of melatonin is higher, darkness increasing the synthesis and release of melatonin in humans, this having a certain circadian rhythm. Melatonin has an antigonadotropin and anti-estrogen effect due to the polypeptides secreted by the pineal gland and the inhibition of the neuro-synthesis of hypothalamic gonadotropin releasing hormone, by acting on the RH-LH, resulting in the inhibition of serotonin, which is involved in the production of RH-LH. The increased production of melatonin depends on other environmental factors such as temperature, magnetic field, atmospheric pressure or geographical area (higher in the north and lower in the tropics). The photoperiodical adaptation of the body is done through the brain, the main receptor of epiphyseal hormones.

Light impulses influence also the CNS where the sympathetic fibers penetrate the adventitia of the vessels coming from the thickness of Pia Mater, branches coming from the cerebral vessels and which under the influence of light stimuli received by the retina decrease the secretion of melatonin³, increasing the secretion of gonadotropins by stimulating the pituitary LH and FSH.

The epiphysis has connections to the retina, so that the amount of melatonin secreted at night increases, causing among other things, sleep duration, and thus having a braking ac-

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tion on the secretion of the gonads. Since the night is smaller in spring and summer, the braking action of the sex hormones discharge is automatically lower, a context in which sexual activity is higher.

The sexual behavior is more pronounced among young people who have more obvious manifestations in this regard, and it changes with age as the concentration of melatonin decreases, as reported to the involutive process. Sunlight has direct effect on the external genitals, and it may cause excitation by local vasodilation.

Over the skin, the sunlight acts to change the color (tan), blurring the existence of wrinkles, pimples, comedoes or other unsightly elements. The skin becomes smooth, pleasant, attractive and sensual, with an increased erogenous effect, favorably and obviously influencing the temptation for sexuality. The human skin, just like the hair, is covered with a film of melanin synthesized and stored in the skin, which differs from person to person, in relation to the intensity of solar energy. The intensity of melanogenesis process is genetically determined. Melanin protects the body against radiation, especially ultraviolet, gamma and X-ray. Melanin absorption power is high. Thus, through brown eyes, blue eyes or through white skin not exposed to the sun approximately 25% of the UV rays penetrate, while through the dark skin only 5% of the UV rays penetrate. In this context the protection of the body against the negative action of excessive ultraviolet that induce photo-oxidation processes in cells, damaging the DNA. For the body, passing from winter to summer, with a high energetic spectrum, causes hyperexcitability, increased nervous tension, insomnia, agitation and an

intense sexual life.

Also, through the adenohipophysis compounds, which synthetize the growth hormone, prolactin, melanocyte-stimulating hormones, adrenocorticotropic hormones, thyroid stimulating hormones and gonadotropin-releasing hormones, sexual life is clearly affected.

I would remember:

– the ACTH, which by stimulating the synthesis and secretion of glucocorticoids, and partially mineralocorticoids and androgens, stimulates the libido;

– the prolactin together with the estrogens and adrenal steroids develop the mammary gland. Prolactin is necessary in lactogenesis, hyperprolactinemy being present during the suckling, nipple stimulation, pregnancy, orgasm, stress;

– the luteinizing hormone, which induces in women the androgen synthesis by the theca cells of the ovary, subsequently converted into estrogens by the follicular cells, participates in the ovulation and the corpus luteum formation, and in men it stimulates Leydig cells, secreting the testosterone which increases the libido and the spermatogenesis induced by the FSH.

The follicle stimulating hormone (FSH) stimulates the follicular development and production of estrogen, because the FSH at puberty increases before the LH and the first menstrual cycles are anovulatory. In men they stimulate in the testicular Leydig cells the development of the receptors for the LH.

The FSH, together with the LH-induced testosterone, is involved in the process of spermatogenesis. The FSH increases the

synthesis of androgen binding protein (ABP) by Sertoli cells and testosterone tubal permeability.

Conclusion

Exposure to the sun releases environment-incorporated trophines, which offer us the feeling of well-being.

The heat also acts favourably regarding the gonads (ovary and testis), stimulating the growth of specific hormones.

Sensitization of the sensitive receptors in the genitals causes vasodilation of the pelvic sphere and local erection, activating the libido. The receptor elements in the vulva, penis and breast reach the spinal cord at the sacral level (S2-S4), and then, through the ascending pathways, reach the brain receiving the erotic sensation, stimulating the desire for sexual intercourse (libido).

Under the influence of sunlight, the pituitary gland and epiphysis activate by the neuroendocrine system the sexual motivation, increases the libido and biological potential of the entire body.

Conflict of interest

The Authors have no conflict of interests to declare, had full access to all of the data in the study, and take responsibility for the accuracy of the data analysis.

References

1. Nițescu V., Treaty of Clinical Sexology, The Publishing House of the Romanian Academy 2018; p. 163-169
2. Cardinali DP, Endocrine Rev, Melatonin: A mammalian pineal hormone, 1981.