

Light Therapy as a Treatment for Sexual Dysfunctions

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Seasonal trends have been demonstrated in reproduction and in sexual activities [1, 2] and the pineal gland, i.e. the light-regulated time keeper of our body, plays an important role in the neuroendocrine control of sexual function and reproductive physiology [2]. The retinohypothalamic tract brings information about light and dark cycles to the suprachiasmatic nucleus of the hypothalamus, which projects to the pineal gland and inhibits the production of melatonin. When these impulses stop (at night, when light no longer stimulates the hypothalamus), pineal inhibition ceases and melatonin is released. Although we are still far from knowing exactly where and how the pineal suppressive role is exerted, the fact that the gland exerts an inhibitory function on the reproductive axis is widely accepted [2]. In fact, the pineal seems to exert its hormonal effect at different levels of the reproductive axis, both at the hypothalamic-pituitary level (for instance via the inhibition of the hypothalamic pulsatile secretion of gonadotrophin-releasing hormone) [2, 3] and at the gonadal level, where melatonin receptors have also been found [2–4]. Furthermore, melatonin appears to increase prolactin secretion, which may contribute to sexual dysfunction [5].

Based on the observations mentioned above we hypothesized that an inhibition of pineal gland activity via a treatment with bright light could favorably influence sexual function and pilot-tested the usefulness of bright light therapy in a small sample of 9 male patients with nonorganic sexual dysfunction (table 1). Subjects (age 39–60) were consecutively recruited in the outpatient clinic of the Urology Department of the University of Siena Medical Center on the basis of a diagnosis of primary (i.e. not due to another illness or to a medication or a drug of abuse) hypoactive sexual desire disorder (HSDD, n = 2), sexual arousal disorder (SAD, n = 6), and orgasmic disorder (OD, n = 1) and the absence of a mood disorder, as assessed via the Mini International Neuropsychiatric Interview [6].

The University of Siena's biomedical institutional review board approved of all recruitment, assessment, and treatment procedures. All subjects provided written informed consent after receiving a complete description of the study and having the opportunity to ask questions. Subjects were randomly assigned to active light treatment (ALT) or placebo light treatment (L-PBO) and assessed at baseline (prior to starting ALT or L-PBO) and after 2 weeks of ALT/L-PBO treatment via the Structured Clinical Interview for DSM-IV-Sexual Disorders (SCID-S) and via a sex-

Table 1. Study outcomes

Treatment groups	Baseline diagnosis	Level of sexual satisfaction at baseline	Diagnosis after 2 weeks of ALT/L-PBO	Level of sexual satisfaction after 2 weeks of ALT/L-PBO
L-PBO				
Patient 1	HSDD	3	HSDD	4
Patient 2	SAD	2	SAD	2
Patient 3	SAD	4	SAD	4
Patient 4	SAD	2	SAD	2
ALT				
Patient 1	HSDD	2	HSDD	7
Patient 2	OD	4	none	7
Patient 3	SAD	3	SAD	8
Patient 4	SAD	3	none	9
Patient 5	SAD	2	none	9

ual satisfaction self-report, which asked them to rate on a scale from 1 to 10 their level of sexual satisfaction.

The ALT consisted of daily exposure to a white fluorescent light box (Super-Lite 3S, fitted with an ultraviolet filter and rated at 10,000 lx at a distance of 1 m from screen to cornea) for 30 min as soon as possible after awakening, between 7.00 a.m. and 8.00 a.m. The L-PBO was an identical light box fitted with a neutral density gel filter to reduce light exposure to 100 lx.

After 2 weeks of treatment, 3 of the 5 patients randomized to ALT no longer met the SCID-S criteria for a sexual disorder whereas the sexual disorder was still present in all the 4 patients in the L-PBO group (table 1). A significant ($p = 0.001$) improvement in sexual satisfaction was observed in the ALT group, whereas no improvement was observed in the L-PBO group ($p = 0.39$).

Our findings suggest a potentially favorable effect of bright light therapy on primary sexual dysfunctions. A larger study is now needed to confirm our preliminary results and to test whether bright light therapy may be of help for the treatment of sexual dysfunctions that are associated with certain psychiatric illnesses, such as major depressive disorder, or with medications that are prescribed to treat those illnesses.

References

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