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Effects of Hormone Replacement Therapy on Sexuality in the Perimenopausal and Postmenopausal Woman

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In assessing the effects of hormone replacement therapy on sexual functioning, it is essential to weigh the contribution of psychosocial factors.

Menopause is a clear marker for the loss of reproductive function and the decline in ovarian activity in women. It need not be, however, a marker for the decline and cessation of sexual activity. Menopause occurs in the American woman at a median age of 50 with about 8% of women experiencing it prior to 40 years. Currently, there are approximately 50 million women in the United States 50 years and over. With today's increases in life expectancy, these women can expect to live one third of their lives after menopause. An understanding of adult development, including the physiology and psychology of sexuality in this population, is essential for the clinician in order to provide correct information, treat with replacement hormones where indicated, and generally improve the quality of life.

Natural menopause must be distinguished from surgical menopause with removal of the ovaries. In the former, there are compensatory mechanisms which are not present with oopho-

rectomy and hysterectomy. From fetal life and throughout growth and development, the number of oocytes constantly decreases from about two million at birth to about 300,000 at puberty. On the average, approximately 400 follicles go on to ovulation during a woman's lifetime; when no more follicles respond to gonadotropins, menopause occurs as a normal developmental phase of life. Women in their 50's in our culture may have young children, be grandmothers, just be returning to school or careers, or be at the peak of their work and professions. They may be subjected to the demands of adolescent children with their attractive youthfulness and budding sexuality and, simultaneously, the demands of aging parents with their problems of involuntional changes and waning sexuality. Sexuality is influenced by values of family, religion, culture and society, as well as by physical conditions and medial illnesses. These factors also influence the clinicians attitudes about sexual practices and what

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practices are suitable at varying ages. This paper will discuss some of the sexual changes with aging and the influence of hormone replacement therapy on sexual activity in the perimenopausal and postmenopausal woman.

Biological Changes With Aging

In the perimenopausal period, women with regular menses have a decrease in estradiol and an increase in follicle stimulating hormone levels. As cycles become irregular, the follicular phase shortens. Follicle stimulating hormone values of 40 mIU/ml may be present with continued menstrual bleeding, although luteinizing hormone values may remain normal until menses cease. Pregnancy is a rare but possible event until the follicle stimulating hormones and luteinizing hormones are elevated. The ovary after menopause continues to secrete testosterone. Androstenedione postmenopausally is derived from the adrenal gland and, in a smaller quantities, from the ovary. The ovaries after menopause do not produce estrogen. The estrogens in the body come from the conversion of androstenedione to estrone outside of the ovary.

The effects of diminished estrogen production are well known. Menstrual bleeding ceases. Menopause is diagnosed when there has been six to 12 months of amenorrhea. Vasomotor symptoms include hot flushes, feelings of intense body heat around the head, neck and chest, and night sweats. Osteoporosis and cardiovascular changes occur as estrogen values decline further. Atrophic changes occur in skin and mucosa. Vaginal atrophy can cause vaginitis, pruritis, and pain with intercourse. Genitourinary changes can lead to varying urinary problems such as urethritis, incontinence, and urinary frequency. There may be a decrease in sensory function in the peripheral and central nervous system. There is considerable debate about whether mood disorders, such as depression, are more common in menopausal women and whether or not estrogen deprivation is related to specific psychiatric disorders. Although considerably more research is needed, it is believed that there is no such entity as involuntional depression, but mood disorders are in some ways related to reproductive function. Estrogen and progesterone deficiency can adversely affect sleep patterns which may be due in part to hot flashes and night sweats.

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Sexual Changes With Aging

The sexual response cycle has been divided into stages for the purposes of study, although they merge with one another in a continuous fashion. These are desire, excitement plateau, orgasm, and resolution. Some of the changes described with aging peri- and post-menopausally are decreases in sexual desire or libido. Lubrication during arousal occurs more slowly. During the excitement phase, breasts show less nipple erection and enlargement. There is less engorgement of the labia majora. Vaginal walls are thinner and less able to expand. The orgasmic response may diminish or be absent. Muscular contractions are weaker. During the resolution phase, nipple erection resolves more slowly and vasocongestion returns more quickly to normal. Dyspareunia may be due to vaginal dryness if other lesions are carefully ruled out. Alterations in peripheral nerve endings may lead to altered sensory perception and altered touch perception which, in turn, may decrease arousal.

Ovarian steroids also affect levels of neurotransmitters and neuroreceptors which are related to mood changes. Depression is one of the most common causes of a decline in sexual desire. Some of the female sexual problems, especially the decline in interest and desire, may be due to problems with partners' ability to function. The aging man may take longer to achieve an erection and require more direct genital stimulation. Despite all of the changes described, there are many aging women who find themselves enjoying their sexual activity more than ever once they are freed from the fear of pregnancy. It is the physician's role to assist with that and enhance the quality of life.

Hormone Replacement Therapy

Approximately 70% of women, aged 45 to 55 years, are sexually active; this percentage declines with age for a variety of reasons in addition to biological changes or physical illnesses (Hunter, 1990). In assessing the effects of hormone replacement therapy on sexual functioning, it is essential to weigh the contribution of psychosocial factors such as personality style, partner availability, compatibility and function, loss or bereavement, vulnerability to depression, decline in social status, job or role changes, and attitudes and expectations about menopause. Theories have suggested that stress may have a

direct effect on estrogen levels and the lifting of depression may be associated with increased estrogen levels. However, not enough data have been presented to support this hypothesis at this time.

There are other important considerations when reviewing the effects of hormone replacement therapy on sexual functioning in peri- and post-menopausal women (Walling, 1990). Some quantification of the sexual behaviors should be included. For example, if the partner is not able to function, or the woman is depressed, hormone replacement therapy may correct vaginal dryness, without changing sexual activity. Many studies do not specify which aspects of the sexual response cycle are affected. When the term libido is used, it may refer to sexual desire, sexual arousal, or overall sexual responsiveness. It is often unclear if sexual dysfunctions are present and if they have been related to partner conflicts or dyspareunia. Other important outcomes relate to vaginal health and integrity.

Estrogen alone has proven useful in improving sexual functioning with relief of vaginal dryness, atrophic vaginitis, hot flushes and night sweats, and its "mental tonic" effects on one's sense of well-being. Interestingly, despite the decrease in dyspareunia and a general increase in sexual desire, increases in sexual frequency are less often noted (Utian, Walling). Studies have included use of hormones compared with placebo and control groups in varying research designs.

Improvements in sexual functioning that are seen with estrogen alone are also noted in women who are receiving estrogen with progesterone (Dennerstein, 1980).

For women who do not respond to estrogen therapy for sexual desire problems, androgens have been successfully used (Sherwin, 1987). In summary, for the clinician, hormone replacement therapy may be very useful in the treatment of sexual problems in the peri- and post-menopausal woman if the treatment is individualized, psychosocial factors are taken into account, and education regarding a positive outlook on menopause is included along with a wider approach that includes diet, exercise, and attention to emotional factors (Utian, 1990).

One possible regimen is to use conjugated estrogen 0.625 mg orally daily or transdermal estrogen 0.05 mg twice a week continuously, with medroxyprogesterone acetate 5 to 10 mg for days

one through 12 of each calendar month. The cycle is repeated monthly. While there is a sense of well-being restored by this regimen, it is not considered a treatment of clinical depression. Before estrogens are begun, a careful physical and psychological assessment is indicated. There are several regimens available today and they should be chosen with the needs of a particular woman in mind.

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