Primary Psychiatry. 2010;17(1):22-30

Sex and Mental Health in Old Age

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Sexual activity declines in late life but the cause has as much to do with illness and social circumstances as with the physiology of aging. Older patients welcome counsel on sexual health but because of the delicacy of the matter, physicians need to initiate the conversation and be aware of opportunities for sexual expression as well as limitations. When the focus is on intimacy and affection rather than intercourse and orgasm, older adults need not retire from sex simply because of advanced age or infirmity.

INTRODUCTION

The increasing active life span means more and more older adults will be sexually active into old age. And they will expect their physicians to be knowledgeable in matters of sexual health. However, myths of how age extinguishes libido remain wide spread among health providers and older patients as well. Illness and lack of available partners will impede sexual expression but changes due to age or physical limitations need not herald the end of physical intimacy. Although optimism is critical, an awareness of biology, social expectations, personal history, and domestic circumstances is required for realistic treatment. Practitioners can improve the well being of older patients by addressing their sexual concerns with skill and compassion. Two examples will illustrate the point. First is that of a 77-year-old woman with a 6 week history of severe major depression following a viral illness. Her parting comment at the end of the initial evaluation was "doctor, why do I not want to be touched anymore?" In the second example a 72-year-old woman with a 10 year history of recurrent episodes of bipolar depression and her husband were being interviewed by a new psychiatrist who asked as a matter of routine about their sex lives. The husband replied "she has not wanted to be touched in 10 years." She added "no one ever asked me that before."

REALITIES OF SEX IN LATE LIFE

Myths impeding sexual health in late life are displayed in Table 1 to address counterproductive attitudes among older patients and practitioners alike. However the realities of old age cannot be overlooked. The availability of a sexual partner becomes a problem in late life particularly for women. By 80 years of age there are 4 women for every man. Most men over 65 years of age are married but most women are widowed.[1] The probability of erectile dysfunction (ED) increases from 40% to 70% between 40–70 years of age.[2] Because religious institutions are a major source of meaning and support for older Americans, religious prohibitions about sexual techniques and partners may be particularly acute for this age group.

The major predictor of sexual activity in late age is the individual's pattern of sexual activity in early life. People with higher levels of sexual activity in middle age show less decline with advanced age.[3] Gender differences in sex drive intensity tend to synchro-

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Disclosure: Dr. Kennedy has received grant support from Forest. Dr. Martinez and Dr. Garo report no affiliation with or financial interest in any organization that may pose a conflict of interest.

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nize with age as women become more assertive and men more nurturing. But when one partner loses interest or capacity, the other may accept the loss as irretrievable. Abstinence then leads to atrophy of both sexual anatomy and desire for both partners. Lack of privacy due to the nursing home residence, home health aides, or family caregivers may also extinguish desire. When the older lover takes on the role of caregiver for a demented or physically disabled partner, opportunities for romance may diminish. Bereaved individuals may experience a "widower's syndrome" characterized by guilt over "betraying" the deceased partner or anxiety over a new lover after years of monogamy.[4]

TABLE 1

COMMON MYTHS IMPEDING SEXUAL HEALTH IN LATE LIFE

Myth	*Reality*
"Chronology, tranquility": Advanced age frees the individual from the tyranny of desire	True for a substantial minority of older adults. But most older persons with available partners are sexually active.
"Victorian": Women submit to sexual activity but should be ashamed to enjoy it. Masturbation is harmful to body and soul.	Guilt and shame are major obstacles to open discussion of sexual needs, preferences.
"Ignorance is bliss": Lack of information about the variety of sex roles and sexual expressions is protective	Ignorance about changes in sexuality related to age and the array of means partners use to give pleasure to one another promotes loss of sexual health.
"Seniors are sexually second class citizens": They are not responsive to treatment of sexual dysfunction	Sex and sex therapy are not only for the young.
"Frugality": Sexual energy should be saved rather than invested.	Lack of practice leads to atrophy not preservation of function.
"Menopause signals loss of libido" and amplifies the differences in intensity between male and female desire.	Many women become more sexually assertive following menopause
"Dirty old man": Older males who are not yet impotent are either predatory or indiscreet	With advanced age men become more sexually nurturing.
"Chronic or terminal illnesses mean death to sex": Severe illness robs one of libido	Older adults need not abandon interest in sex as a result of disability, disease or fatal prognosis
Same sex partners are incapable of mature intimacy; the real purpose of sex is procreation.	Clinical experience with older couples demonstrates that lasting affection and commitment transcend procreative capacity.
Older adults are not at risk for HIV infection.	With the increasing number of long-term AIDS survivors, and people HIV positive but not ill, condoms have become an essential feature of senior sex.

Adapted from Kennedy GJ. *Sexuality in Geriatric Mental Health Care*. The Guilford Press, New York, NY; 2000;175-191.

Kennedy GJ, Martinez MM, Garo N. *Primary Psychiatry*. Vol 17, No 1. 2010.

Age related changes in sexual physiology, anatomy, and the stages of sexual response are summarized in Table 2. These changes occur abruptly in women starting with menopause but more gradually in men, a phenomenon sometimes called andropause. In both genders, sex steroids decline and changes in the stages of sexual response are also similar. The excitement stage is slowed, the plateau stage is prolonged, orgasms are briefer, less intense, and there is a more rapid resolution to the pre-arousal state. More vigorous, prolonged genital foreplay may be required for complete arousal. Fantasy, verbal, or visual stimulation alone may not be sufficient to convert desire into arousal.[5] The sexual response is slowed in late life but also may be less taxing physiologically.

TABLE 2

EFFECTS OF AGING ON SEXUAL ANATOMY, PHYSIOLOGY AND THE STAGES OF SEXUAL RESPONSE

Men	***Women***
Anatomy and Physiology	
↓ Nocturnal penile tumescence	↓ Vaginal thickness and elasticity
	↓ Estrogen and progesterone
↓ Testosterone and spermatogenesis	↑ FSH and LH
↓ Size of testes, ↑ Size of prostate	↓ Size of cervix, uterus, ovaries
Fertility declines, but may not cease	Fertility ceases with menopause
Excitement Stage or Arousal	
Follows awareness of desire	May precede awareness of desire
Slowed response	Slowed response
Lessened or incomplete tumescence	Vasocongestion reduced
Penile stimulation required for erection	Reduced lubrication
Plateau Stage	
Prolonged	Vaginal response reduced, clitoral intact
Orgasm Stage	
Shorter duration	Shorter duration
Contractions weaker, fewer	Contractions weaker, fewer
Ejaculate volume reduced	
Resolution Stage	
Rapid return to pre-arousal state	Rapid return to pre-arousal state
Refractory period increased	Capacity for multiple orgasms retained

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FSH=follicle stimulating hormone; LH=luteinizing hormone.

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ORIGINS OF SEXUAL DYSFUNCTION IN LATE LIFE

Table 3 summarizes common contributors to late life sexual dysfunction which are usually several and inter-related. Physical conditions may be the cause of most complaints, but the extent of dysfunction is rarely explained by physical factors alone.[6] Lack of openness about sex as well as prohibitive mores may prevent couples from mastering changes in the sexual response due to age or illness. However, failure to arrive at sexual satisfaction may well be the residue of resentment. Childhood sexual abuse may have a lasting impact on the adult's capacity to enjoy sexuality. Hostile feelings may be expressed openly through sexual indifference and feigned prudery or indirectly through unavailability or neglect for one's appearance.

Women may fear that they have lost the youthful bloom of sex appeal after menopause or mastectomy. They may be unaware that male excitement is now more a function of their actions rather than their appearance. However, older women may not be comfortable assuming the more assertive sexual approach their partners require. Open sharing of erotica or fantasies may be out of character. Males are more dependent on their partners' foreplay to reach erection but premature ejaculation is less of a problem. Nonetheless, due to the brevity of orgasm and the prolonged refractory period, older males without additional skill in oral or manual sex may leave their partners unsatisfied.

Of the pharmacologic causes, cardiovascular, antihypertensive, and antidepressant agents are the most prominent. Of the antihypertensives, beta-blockers and thiazide diurectics are the most common offenders, angiotension converting enzyme inhibitors and the calcium channel blockers are the least. Both the selective serotonin reuptake inhibitors (SSRIs) and noradrenergic reuptake inhibitors are associated with ED and may delay or prevent orgasm through their 5-HT_2 serotonergic receptor activity.[2] The interaction of decreased libido due to depression with drug-induced sexual side effects makes treatment difficult in both genders. Women recover from depression associated difficulties with desire and psychological arousal when treated with an SSRI. Orgasmic dysfunction seems to be drug related in men.[7] For patients whose depression has remitted with an SSRI, substitution with another medication rather than withdrawal of antidepressant should be recommended. Bupropion is the antidepressant least likely to have sexual side effects. Over the counter medications, botanicals, and substances that might be abused including alcohol, nicotine, and analgesics may also impair sexual function. Even modest consumption may impair sexual performance among older adults whose sensitivity to alcohol increases with age.

TABLE 3

FREQUENT CONTRIBUTORS TO THE ORIGIN OF LATE LIFE SEXUAL DYSFUNCTION

Pharmacologic	Antihypertensives, psychotropics, cardiovascular agents, alcohol, nicotine, analgesics
Endocrinologic	Diabetes, thyroid disease, hypogonadism, tumors
Neurologic	Stroke, peripheral or autonomic neuropathy, dementia, Parkinson's disease
Psychosocial	Bereavement, depressive disorder, lack of partner, lack of privacy, attitudes and expectations, atrophy of disuse
Chronic Illness	Degenerative joint disease, COPD, angina, chronic renal failure, other vascular disease, hyperlipidemia
Surgical	CABG, prostatectomy, mastectomy, hysterectomy, oophorectomy, rectal surgery (dysfunction greater in men than women), colostomy

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COPD=chronic obstructive pulmonary disease; CABG=coronary artery bypass graft.

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Among women estrogen deficiency is the most common endocrine cause of sexual dysfunction; diabetes is more often the problem for men. Vulvovaginal dryness and atrophic vaginitis are a direct result of estrogen deficit making intercourse painful if not intolerable. Reduced testosterone may contribute to decreased libido among women as well. Diseases of the central and peripheral nervous system, dementia, stroke, Parkinson's disease and the peripheral and autonomic neuropathies are common contributors to sexual dysfunction among older people.[8] Pathological sexuality including aggressive, indiscreet, indiscriminate, or self-mutilating sex acts are associated with fronto-temporal dementia but may also appear with stroke, traumatic brain injury, vascular dementia and Alzheimer's disease when frontal lobe encroachment occurs. The incidence of sexually objectionable behavior in Alzheimer's disease ranges from 2% to 25%.[9] Dementia is usually associated with reduced sexual drive, but increased libido can occur. Spouses may appreciate the affection even if their partners misstep the sequence of pleasurable behaviors.[10]

Physical illness may impair sexuality directly by degrading the strength, stamina and flexibility necessary for sexual activity. Surgical procedures that alter the person's appearance or change cardiovascular function may also have an impact on sexual dysfunction. However, cardiac surgery and cardiac devises including the implantable pacemakers and automatic defibrillators are not incompatible with sexual activity including orgasm. Modern micro-surgical techniques often spare erectile function following prostatectomy. Hysterectomy may change the perception of orgasm but not necessarily reduce the pleasure. Breast reconstruction following mastectomy may have significant sexual

benefits for the woman and her partner even though erogenous sensitivity is not restored. Return to sexual activity after surgery, stroke or heart attack is a question on the minds of both patients and their partners. Practitioners should anticipate the concerns of both parties and initiate the dialogue on their behalf.

ASSESSMENT FOR SEX IN OLD AGE

An assessment of sexual dysfunction in the older adult should include a comprehensive evaluation, sexual history, and treatment plan. The visit will usually include the partner.[11] When the chief complaint is loss of desire thyroid function studies, testosterone, prolactin and luteininzing hormone, may be helpful to detect a primary endocrine cause. Anemia, bradycardia, congestive heart failure and pulmonary disease may also rob the patient of sufficient energy to become aroused. Because testosterone secretion in men is diurnal samples should be collected in the early morning. If total testostresone (free plus protein bound) is <400 ng/dl then a free testosterone level should be assessed. Normal free testosterone is 50=210 pg/dl but a bioavailable level of testosterone <70 ng/dl indicates hypogonadism.[12] Laboratory studies for ED include lipid profile and hemoglobin A1c. Vascular followed by pharmacologic are the most frequent causes of ED. The penis should be examined for painful fibrous plaques of Peronies's disease. The examiner should also test the cremasteric reflex and examine the patient for orthostatic hypotension. The appearance of atrophic testes, loss of pubic hair and gynecomastia suggestive of hypogonadism may be difficult to distinguish from advanced age.[2] The pelvic exam is performed to detect erythema of the entroitus and vulvovaginal atrophy as well as the presence of a cystocoele or rectocoele.[13]

The functional assessment should include the capacity to ambulate, climb stairs, and carry out household chores. The review of systems emphasizes the cardiovascular and musculoskeletal. Loss of strength, stamina, and flexibility may be due to inactivity as much as medical conditions and indicate different avenues of intervention. The character of sleep-associated erections if any should be queried but is not an adequate indicator of therapeutic potential.

Mental status examination should include cognitive screening as well as queries to detect depression, anxiety and psychotic disorders. The clinician should not dismiss emotional distress as simply the result of sexual dysfunction or comorbid physical illness. When symptoms have reached the level of a disorder, treatment should be initiated for both mental illness as well as sexual dysfunction.

Taking a sexual history from an older person requires tact and sensitivity. But equally important is the interviewer's sense of comfort with the approach which is acquired with practice. Youthful examiners may be hesitant to explore the sexual practices of patients their grandparent's age but most often will be reinforced by the relief the older patient expresses as a result of the inquiry. Unpracticed examiners may desensitize themselves by rehearsing questions with their intimate partners. Useful opening phrases include "When people [age, retire, get sick or depressed] they often experience changes in their sex life. How has sex changed for you since..."?[14] An open-ended question conveys genuine interest without seeming intrusive and allows the patient to demur. The conversation may then proceed to specifics about frequency of encounters across the life span, ED in men and discomfort or lack of desire in women. Questions about sex after retirement, menopause, bereavement or surgery also demonstrate an openness that will foster less inhibited communications between partners.

The inquiry should also examine the domestic setting, including privacy availability and acceptance of partners. Personal preferences and circumstances (widowhood, sexual orientation, religious prohibitions, cultural sanctions) should be determined. Practices incompatible with the person's mores or religious beliefs should be accepted as such with respect. An interview with the patient's partner allows an assessment of compatibility and capacity to engage in therapeutic maneuvers. Moreover reassurance regarding the safety of sexual relations after surgery, stroke, and heart attack needs to be shared with the couple not just the patient. Because erectile dysfunction is so often associated with vascular disease, the risk of a cardiac event is increased but the absolute risk is 0.9%.[15] The Second Princeton Consensus Conference on the risk from sexual activity in cardiovascular disease provides elaborate detail to assign individuals to high, intermediate, or low risk.[16] People at low risk are asymptomatic during exercise of modest intensity, and have <3 risk factors for coronary artery disease. People not ischemic during exercise testing 6 weeks after myocardial infarction (MI) or 3 weeks after revascularization are also at low risk. People at intermediate risk have ≥3 risk factors for coronary artery disease and experience some limitation in exercise tolerance or are within 2–6 weeks post MI. Those with unstable angina, uncontrolled hypertension, moderate to severe valve disease, or who are within 2 weeks of an MI are at high risk. Exercise tolerance testing and cardiac rehabilitation are simple procedures to determine and in some instances reduce risk. Anti-angina agents may also be taken before sex to minimize worry and discomfort for people with coronary artery disease. Nitrates in any form whether taken intermittently or regularly are a contraindication to phosphodiesterase therapy for ED. Pain due to arthritis may be lessened with analgesics and a warm bath prior to lovemaking. Side-by-side, back-to-belly ("spoon") or the cross-wise sex position with one partner

supine and the other on his or her side require less flexion at the hip and knee. These positions also reduce the pressure of body weight associated with the "missionary position."

TREATMENT APPROACHES: *SEX THERAPY*

Because the origins of sexual dysfunction are several, the treatment approaches are multiple. But the goal is singular; return the person to pleasurable function. This is achieved through the removal of obstacles such as medications and ill informed attitudes and with the introduction of pharmacologic and behavioral adjuncts to sexual enjoyment. Whether the chief complaint is erectile dysfunction in the male or pain upon intercourse or lost libido in the female, and whether the problem emerged over time or following acute illness, the behavioral approach is preferable. Even when pharmacotherapy is indicated, failure to engage the patient's partner will lead to less than optimal results.[11] Goals of treatment, if they are to be realistic require both partners to contribute. The patients and their partners will set the pace once the practitioner has conveyed a sense of optimism and confidence.

Treatment (Table 4) is the same in both youth and old age but is modified for the couple's physical capacity, social circumstances, and personal preferences. Following the initial assessment the couple is given permission to drop inhibitory myths, restructure sexual attitudes, to simply be more sexual. They are asked to refocus lovemaking on release and pleasure rather than performance. Each individual is given permission to be selfish in sexual enjoyment to reduce guilt, fear of rejection, and obsessive concern for the partner. In a problem solving fashion options for increasing sexual attractiveness, eroticism and fantasy life are explored. The couple is reminded that desire begets arousal but that in late life arousal can beget desire. As a result the practitioner asks the couple to "make a date" rather than "wait for the moment." The practitioner may also provide educational materials about informed techniques about foreplay, progressive exercises to increase arousal and pleasure without requiring intercourse or orgasm.

Sensate focus (SF), non-demand pleasuring, is used to bring the couple together to restore intimacy through relaxed touching. A ban on intercourse is prescribed to take away fear of pain and performance anxiety and to provide time for SF exercises to rebuild confidence.[17] Beginning at SF-1, the couple is instructed to caress one another anywhere but the genitals on the "first date". They then proceed to SF-2 with genital pleasuring (manual or oral) governed by the "start-stop technique". Here the couple is instructed that once arousal occurs they pause, allow the excitement to fade, and then to start again. This purposeful pattern of arousal and re-arousal builds optimism that erections and pleasure can be sustained. It will also allow the time necessary for vulvovaginal irritation or atrophy to be countered by estrogen administration. At SF-3 penetration may occur briefly but should not progress to intercourse until the couple and therapist agree to remove the ban.

Difficulties adhering to treatment may indicate problem dynamics within the marriage, mental illness in one partner or the need to proceed more slowly than anticipated. Some individuals will refuse to try or fail to complete even the least demanding component of sensate focus. They may find it difficult to "make a date" or worry that somatic concerns or mental symptoms cannot be surmounted. Inability to adopt a more open, explicit style of communication may persist. Arguments with the partner may increase once expectations are made explicit. The couple should be reminded that they cannot be expected to know what is pleasurable or how to resolve differences without communicating.[17] But for some referral for individual psychotherapy or couples counseling will be necessary.

TABLE 4
MANAGEMENT OF LATE LIFE SEXUAL DYSFUNCTION

History	Review of systems, diagnoses, medications, personal and cultural expectations and preferences, functional capacity of both partners
Counseling-education	Address unspoken resentments, mental illness, ineffective communication style. Counter myths and lack of information to accommodate for the impact of age on the stages of sexual response and gender differences. Counseling regarding prevention of sexually transmitted diseases. Provide educational materials. Teach relaxation techniques
Behavioral	Redirect the focus of sex to affection, intimacy, and pleasure and away from performance, intercourse, and orgasm. Give permission for manual, oral sex, use of erotica and fantasy. Physical exercise to improve strength, endurance, flexibility. Graded sexual exercises (homework) in which excitement rather than intercourse or orgasm is defined as success.
Pharmacologic	Reduce polypharmacy, switch to ACE inhibitor or Ca channel blocker. Replacement therapy for primary and secondary hypogonadism. Estrogen creams for vulvovaginal irritation. Phosphodiesterase inhibitor for erectile dysfunction.
Surgical, mechanical	Refer to urologist, gynecologist.

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Ca=calcium; ACE=angiotensin converting enzyme.

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PHARMACOLOGIC TREATMENT OF ED

Medications approved for treatment of erectile dysfunction appear in Table 5. They promote penile tumescence in response to sexual stimulation by blocking phosphodiesterase 5 (PDE5). Sexual excitement releases nitric oxide that results in the generation of cyclic guanosine monophosphate (cGMP) a vasodilator generated in the penis which is degraded by PDE5. Phosphodiesterase inhibitors are most effective when the etiology of erectile dysfunction is psychological, less so for the neurogenic impotence of diabetes or following surgery for prostate cancer. Rates of successful intercourse following ingestion are increased 2–5 fold over placebo. However, there is no compelling evidence that one phosphodiesterase inhibitor is superior to another.[2] Phosphodiesterase inhibitors exhibit mild systemic vasodilatory activity and may potentiate effects of nitrates. As a result they should not be prescribed to patients taking nitrates and to those with advanced congestive heart failure or unstable angina. Potent cytochrome P450 3A4 inhibitors (erythromycin) may elevate plasma levels of the phosphodieserase inhibitors. They should not be taken after an alcoholic beverage. Transient headache, gastrointestinal symptoms, and blue green aura around bright lights are the most frequently reported difficulties. Because the mechanism of action is local and vascular, phosphodiesterase inhibitors should not be expected enhance libido or sensation. Nonetheless better sexual function is likely to have synergistic effects not explained by the pharmacology of the drug. The older person may require a prolonged therapeutic trial. Partial return of function and satisfaction is more realistic than complete recovery. Here again the prescriber should emphasize that success should be defined as greater pleasure for both partners rather than greater erections only.

HORMONE REPLACEMENT THERAPY

Hormone replacement therapy (HRT) has undergone an abrupt reversal with findings from the Women's Health Initiative. Many of the protections assumed to accrue with estrogen are now recognized to be false. Indeed, the Black Box warning indicates an array of risks associated with estrogen replacement therapy (Table 6). Addition of a progestin (not shown in Table 6) to reduce estrogen induced endometrial overgrowth but does not fully mitigate the risks. Nonetheless the number of estrogen compounds, estrogen/progestin combinations and drug delivery formats are substantial. Indications for replacement therapy among women are now limited to menopausal symptoms of vasomotor instability and vulvovaginal atrophy. Topical creams, rings or pills that are introduced into the vagina particularly when prescribed at lowest dosage may minimize systemic distribution. Once atrophy is established as much as 2 years of estrogen therapy may be necessary. Water soluble lubricants (Re-plen, KY gel) are often beneficial. Once intercourse is comfortable, more frequent encounters will also help reduce atrophy. Although the postmenopausal decline in women's sexuality is only partially explained by physi-

TABLE 5

AGENTS USED TO COMBAT ED

Generic Name	*Trade Name*	*Initial Dose*	*Final Dose*	*Precautions*	*Advantages*
Sildenafil	Viagra	25 mg	100 mg	Potential cardiac risk with preexisting cardiovascular disease; potentiates the hypotensive effects if nitrates–contraindicated; may augment the effects of β-blockers and antihypertensives; caution in patients on protease inhibitors; drug interactions (CYP 3A4); common reactions may include headache, dyspepsia, back pain, myalgia, nasal congestion, flushing, limb pain	FDA approved for ED; half-life 4 hours; taken 1 hour before sexual activity
Verdinafil	Levitra	5 mg	20 mg	As above	FDA approved for ED; half-life 4–5 hours; hepatic metabolism; Taken 1 hour before sexual activity
Tadalafil	Cialis	5 mg	20 mg	As above; adjust dose for both renal and hepatic insufficiency; prolonged half-life (17.5 hours)	FDA approved for ED; no dose adjustment needed for older adults; improves erectile function for up to 36 hours; may be taken without timing for sexual activity

ED=erectile dysfunction; CYP=cytochrome P450; FDA=Food and Drug Administration.

Kennedy GJ, Martinez MM, Garo N. *Primary Psychiatry.* Vol 17, No 1. 2010.

ologic changes, estrogen, and testosterone may enhance sexual drive in postmenopausal women. Nonetheless there is no consensus as to their benefit for female hypoactive desire, arousal, or orgasmic disorders. Neither are they Food and Drug Administration approved for these diagnoses. The definitions for disorders of desire, arousal, and orgasmic disorders are a matter of scientific debate. Data from the international committee sponsored by the American Urological Association Foundation suggests that lack of sexual interest despite sexual stimulation is critical to making the diagnosis of a disorder of desire. Similarly, disorder of arousal would be subdivided into genital or subjective. Here the boundaries are drawn based on the presence of genital arousal in the absence of the experience of the desire for sex despite stimulation. When neither genital nor psychological arousal occur the arousal disorder would be categorized as combined.[13]

Among males age related decreases in muscle mass and increase in body fat are paralleled by decreases in testosterone and dehydroepiandrosterone. When bioavailable testosterone indicates hypogonadism, there are a variety of choices for

TABLE 6

AGENTS USED FOR HORMONE REPLACEMENT

	Generic Name(s)	*Trade Name(s)*	*Dosage*	*Precautions*	*Indications*
Androgens				Anabolic steroid. Mood changes, hyperlipidemia, prostate enlargement, fluid and electrolyte disturbance, interaction with anticoagulants and hypoglycemics, virilization among women.	Hormone replacement (hypogonadism)
	Testosterone cypionate Testosterone enanthate	Depotestosterone	50–400 mg IM every 2–4 weeks	As above. Hypersensitivity to sesame seed, severe heart, liver and renal disease, hypercalcemia, BPH, Gasping Syndrome	Patient preference
	Testosterone buccal	Striant	30 mg every 12 hours	As above	Patient preference
	Oral methytestosterone	Testred Methitest Android	10–50 mg/day 10–50 mg/day 10–50 mg/day	As above	Patient preference
	Topical testosterone	Androgel Testim	5–10mg QAM 5–10 mg QAM	As above. Hypersensivity to soy products, obesity, OSA, COPD; Gel is flammable, avoid smoking, fire	Patient preference
	Transdermal testosterone	Androderm	2.5–10 mg patch daily	As above. Local skin irritation, prolonged or frequent erections	Patient preference
Estrogens				Black Box Warning: Unopposed estrogen use increases risk of endometrial cancer in women with a uterus. Also increases risk of PE/DVT, MI, among 50–79 year olds and dementia in those 65 and older; cholestatic jaundice, endometriosis exacerbation, hypocalcemia, hypertrygliceridemia, ovarian cancer, caution needed in hypothyroidism, hypoparathyroid, liver dysfunction and prolonged immobilization. Potential drug interaction with St. John's wort, phenobarbital, warfarin, ritonvir, carbamazepine rifampin, certain antibiotics and of antifungals. Should be used at the lowest effective dose with minimal duration consistent with therapeutic goals and risk avoidance.	Vasomotor symptoms and vulvovaginal atrophy, dysparuenia due to menopause; Hypoestrogenism; Palliation of breast and prostate cancer.
Estradiol	Estradiol Valerate Estradiol Cypionate	Delestrogen Depo-Estradiol	10–20 mg IM Q4WK 1–5mg IM Q3–4WK	As above	Patient preference
	Estradiol Estradiol acetate	Estrace, Gynodiol Femtrace	1–2 mg QD 0.45–1.8 mg QD	As above	Patient preference
	Estradiol Vaginal	Vagifem	0.025 mg vaginal tab twice weekly	As above	Patient preference; Lower systemic absorption
	Estradiol Vaginal Ring	Estring	Every 90 days per vagina	As above	Patient preference; Lower systemic absorption
	Estradiol Transdermal	Too numerous to list	Varies	As above. Dizziness, light-headedness, headache, stomach upset, bloating, nausea, weight changes, joint pain, increased/decreased interest in sex, breast tenderness, or skin redness/irritation at the application site may occur.	Patient preference

(Continued on next page)

replacement (Table 6). Despite local irritation most men prefer patch therapy. Prostatic enlargement may also result but there appears to be no promotion of malignant transformation. However, the effect of testosterone on the older male's prostate is unpredictable.[11] Data on longer-term effects on the prostate, cardiovascular disease, and lipid risk factors are not available. Hypogonadism is a clear indication for a trial of testosterone but a return of libido is not certain.[2]

Given the array of choices and the substantial adverse effects of HRT in both men and women, many practitioners will choose to refer their patients to a physician with substantial experience in prescribing these agents. The use of phosphodiesterase inhibitors and SF exercises of sex therapy should not require referral in most cases and may be critical to the successful treatment of any sexual dysfunction in late life.

SENIOR SEX IN THE NURSING HOME AND ASSISTED LIVING FACILITY

Most nursing home staff have had little if any training regarding sexuality in residential healthcare settings and many will have no familiarity with same sex relationships. As a result, they may feel challenged when the sexual activity of those for whom they are responsible is outside their experience or sense of propriety and request a consultation to control the behavior. The sexual activity they will encounter is of three sorts; consenting, willfully indiscreet, and disinhibited. However, most sexual activity among nursing home residents is neither pathological nor "acting out." The consultant should be prepared to dispel myths and educate staff (and families) about the right to privacy that competent, sexually consenting

TABLE 6
AGENTS USED FOR HORMONE REPLACEMENT (CONT.)

	Generic Name	*Trade Name*	*Dosage*	*Precautions*	*Indications*
Estrone				Black box warning as above.	Vasomotor symptoms and vulvovaginal atrophy due to menopause hypoestrogenism; palliation of breast and prostate cancer.
	Conjugated estrogens (Estradiol, Estrone)	Premarin IV	25 mg IM OR IV	As above	Patient preference
	Estropipate	Ogen	0.75–6 mg QD	As above	Patient preference
	Estrogen congugated B Estradiol, Estrone	Premarin Enjuvia	0.3–1.25mg QD 0.3–1.25mg QD	As above	Patient preference
	Conjugated estrogens (Estradiol, Estrone)	Premarin vaginal	0.5–2 g cream intravaginally for 21 days	As above; may weaken latex condoms and contribute to failure of condoms, diaphragms, or cervical caps made of latex or rubber	Patient preference
Estrogen progesterone combined				Black Box warning as above. Increase the risk of breast cancer. May alter lipoprotein metabolism and impair glucose tolerance	Vasomotor symptoms and vulvovaginal atrophy due to menopause hypoestrogenism
	Drospirenone/ Estradiol	Angeliq	0.5 mg/1 mg/day	As above	Patient preference
	Estradiol/ norethindrone	Activela, Femhrt	0.5 mg/0.1 mg-1 mg/0.5 mg daily 1 tab. 2.5 mcg/0.5 mg-5 mcg/1 mg daily	As above	Patient preference
	Estradiol/ Norgestimate	Prefest	1 mg/0-1 mg/0.09 mg daily	As above	Patient preference
	Conjugated Estrogen/ medroxyprogesterone	Prempro	0.3 mg/1.5 mg-0.625 mg/5 mg daily	As above	Patient preference
	Estradiol/ Norethindrone Acetate	Combipatch	0.05 mg/0.14 mg-0.05 mg/0.25 mg patch every 2 weeks	As above	Patient preference
	Estradiol/ Levanortransdermal	Climara pro	0.045 mg/0.015 mg patch once weekly	As above	Patient preference

BPH=benign porstatic hypertrophy; OSA=obstructive sleep apnea; COPD=chronic obstructive pulmonary disease; PE/DVT=pulmonary embolism/deep vein thrombosis; MI=myocardial infarction.

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adults retain as residents of nursing homes and assisted living facilities. However, when disabled residents require staff assistance with positioning for sex, staff preferences should not be ignored. Negotiations between the residents and staff who are comfortable with the request may require compromises to be satisfactory. Here the consultant can mediate conflicts with mutual respect for the parties involved.

Questions about "competence" also arise. Nursing home residents who are capable of consensual sex should be free from the threat of exploitation. They should be able identify the desired partner and express the degree of intimacy they prefer. Prior sexual history consistent with present behavior is also reassuring but less important.[18] To address the disinhibition or pathological sexuality of residents with dementia, mania, stroke or traumatic brain injury requires an open staff discussion with a knowledgeable consultant. The behavior identified as "inappropriate" and objectionable should be carefully examined. Climbing into the wrong bed, genitals exposed through open pants, touching female staff about the hips or breasts may be signs of confusion rather than willfulness. An explanation of the behavioral consequences of frontal lobe degeneration may be helpful. Loss of social inhibitions due to frontal degeneration results in a loss of social judgment, impulse control and appreciation for the consequences of one's behavior. It is not "acting out", mischief or malice.[9]

It must be acknowledged that there are residents with a lifelong history of indifference to the feelings of others and an established pattern of abusive relationships. But whether the activity is willful or disinhibited, staff should avoid a punitive attitude. They should anticipate repetition, establish boundaries, and reinforce positive behaviors. The problem should be identified for the resident at the time it occurs eg, "you need to go to your room now [away from the day room] to do that [masturbate]". Staff should use distraction and redirection such as recreational activities or snacks to satisfy the patient's need for stimulation.[19] If behavioral interventions have not reduced the problem to an acceptable level some practitioners would prescribe a trial of hormonal intervention with medroxyprogesterone acetate, estrogen, antiandrogens, or gonadotropin-releasing hormone agonists.[20] These agents are not FDA approved for this purpose, but if transfer to another facility will result if the behavior continues, the possible benefit may justify the risks. On rare occasions, dopaminergic agents may provoke these behaviors and a substitute medication may be considered. Antidepressants and benzodiazepines are not effective for sexual disinhibition.[21]

CONCLUSION

With retirement, freedom from child rearing and the reproductive imperative to achieve intercourse, older couples may relax and enjoy sex as never before. As changes in the stages of sexual response reduce the physical demands of sex, gender differences in drive, character style, and foreplay needs harmonize in old age. The loss of desire that results from disuse may be a blessing to those burdened by illness, disability, lack of a partner, or personal inhibitions. But as the population of older adults increases, greater numbers will seek assistance with sexual dysfunction. The conspiracy of age and illness need not preclude physical intimacy. Skillful, compassionate practitioners should anticipate the sexual concerns of their older patients. ***PP***

SUGGESTED READING FOR PATIENTS

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