Impact of Aging on Sexual Function in Men with Spinal Cord Injury

Anousheh Behnegar and Ralph J. Marino

As longevity after spinal cord injury (SCI) has increased, attention has shifted from treatment of active conditions to prevention of secondary disability and enhancement of quality of life. Satisfactory sexual functioning is an important contributor to quality of life. Little attention, however, has been paid to the impact of aging on sexual function after SCI. This article describes the effects of aging on sexual functioning in able-bodied persons and how these effects may influence sexual functioning in men with SCI. Physiological decreases in hormonal concentrations, muscle mass, and bone strength can have a marked effect on individuals who already have deficits in these areas as a result of SCI. Many of the treatments of sexual dysfunction in SCI are relatively new, such as intracorporeal injections and oral sildenafil, and the safety and efficacy of long-term use are not clear. Medical conditions common in the elderly, such as coronary artery disease, cerebrovascular disease, and depression, can have an additive effect on sexual functioning in persons with SCI, and treatment of these conditions may require a change in the management of the SCI-related sexual dysfunction. A satisfactory sex life can be achieved after SCI, but the maintenance of sexual function will require close monitoring and coordination among SCI clinicians and those involved in the treatment of sexual dysfunction. More research is needed on the unique problems associated with sexual functioning in the aging individual with SCI. Key words: *aging, men with SCI, sexual function*

Sex, sexuality, and reproduction are all closely intertwined into the fabric of all living things.[1] Sexual function plays an important role in the lives of not only able-bodied men but also men with disabilities. Sex has been described as "verbal, visual, tactual, and olfactory communication which expresses love and intimacy between two people."[2] Sexuality is multifaceted and can be affected by a combination of biological, psychological, and interpersonal determinants such as age, sex hormone levels, libido, arousal, presence or absence of pain with intercourse, genital sensation, and/or ability to achieve orgasm. Situational and cultural factors as well as body image and self-esteem can also have a profound impact on sexual functioning. Human sexual functioning is unique with significant psychological and physiological components, which need to be considered in tandem. It is the successful interrelation of these two components that determines one's satisfaction with sexual functioning.

As a result of spinal cord injury (SCI), neurologic deficits may affect concomitant organ system function including that of genital sexual function. Sexuality and sexual function, although not the most pressing concern for individuals with SCI, is an important issue. Among 54 paraplegic males aged from 18 to 58 years, sexuality was the third most important concern (12.9%) after the ability to walk (51.9%) and bowel and bladder function (35.2%).[3] In a community-based study of men with SCI, sex life was rated fifth out of 12 areas of life in terms of importance and was lowest in terms of satisfaction.[4] Often this dissatisfaction is not addressed by medi-

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Top Spinal Cord Inj Rehabil 2002;8(1):16–28

cal personnel. In a study of sexual satisfaction, sexual or relationship problems were reported in 27% and 74% of men pre- and post-SCI, respectively, but only 22% had received counseling.[5]

Life expectancy after traumatic SCI has improved over the past several decades, such that individuals with SCI frequently survive into the sixth and seventh decades of life.[6] In fact, several studies indicate that the life expectancy of individuals with SCI is approaching that of the general population.[7–10] Consequently, individuals with SCI who have regained sexual function after their injury are vulnerable to losing it again as a result of the aging process and secondary medical conditions.

There is a considerable amount of information on sexuality and aging in able-bodied persons and on sexuality in disabled persons. However, there is little to no available research on the effect of aging on sexuality in disabled persons, particularly in persons with SCI. The following discussion will make an attempt to provide a better understanding of sexual function in aging men with SCI by reviewing the data on the sexual response cycle of able-bodied men and the subsequent impact of aging on this response. The available information on sexuality of men with SCI will also be reviewed. The physiological and psychological impact of aging on sexual function of men in general and men with SCI in particular will be considered. The effects of comorbid conditions common in the aged, such as hypertension, stroke, cardiopulmonary disease, diabetes, and age-related hormonal changes, will be reviewed.

The majority of sexual dysfunction in able-bodied persons results from psychological processes or is exacerbated by psychological reaction to organic pathology.[11] The causes of sexual dysfunction in disabled persons include (a) reduction of sex drive due to chronic pain or fatigue, (b) lack of appropriate knowledge and education involving sexual behaviors and/or lack of social skills, (c) physical inability of the body to engage in sex acts, and (d) poor self-image and self-esteem.[11] Therefore, it is imperative to examine both the physical and emotional elements of sexual function.

To systematically study sexual function, it is necessary to recognize the differentiation among sex drive, sex acts, and sexuality.[12] Sex drive has been described as "a primary drive similar to others such as hunger."[11] The same author describes sex acts as "behaviors that result in pleasurable sensations through contact with one's own or another person's body."[11] This contact has been said to involve the genitals and other areas that are maximally responsive to sexual stimulation. Finally, sexuality has been defined as "the expression of one's sex drive, through learned sex acts, within the context of the sexual identity of the person."[11] Sexuality is a dynamic process grounded in developmental learning experiences comprised of the following three components: (a) one's self-concept, (b) relationship with others, and (c) specific repertoire of sexual behaviors. All of the foregoing components of sexuality can be significantly impacted by SCI. The motor and sensory deficits of SCI can have a dramatic undesirable effect on an individual's self-esteem and body image, which can contribute to increased performance anxiety even in the absence of physiological causes for impotence.

Sexuality and Sexual Satisfaction

Contrary to common belief, studies have revealed that the loss of sexuality is not an

inevitable consequence of aging.[13] Rather, it is the emotional and psychological problems that are most likely to interfere with sexual function in old age.[14] In 1972, the American Medical Association Human Sexuality Committee concluded that anxiety and internalization of social pressures are responsible for most impotence problems.[15] Other contributory factors to age-related sexual difficulties are psychological issues, couples' views on the quality of the relationship, and cultural factors.

Different cultural and societal factors play a significant role in the sexual performance of the partners as they age. Researchers[16] have pointed out that sexual expression remains important throughout the entire lifetime: "Despite what society has conditioned us to believe, our data clearly show that the need to be touched, stroked, cuddled, and caressed is a lifelong one. Physical contact is a basic human need and that need is as powerful in the 60s, 70s and 80s as it is in infancy, childhood and early adulthood."(p9)

Sexual satisfaction remains stable in later life despite the fact that age brings a decline in various aspects of sexual function.[17] A man's basic attitudes toward sexuality are important throughout the aging process. If a man associates guilt and shame with sexual expression, especially as he ages, his sexual performance and satisfaction will be hampered. The quality of the relationship, communication, degree of mutual intimacy, and level of commitment are essential to sexual satisfaction. The partner's expectation, flexibility, and willingness to experiment are also important factors in a satisfactory sexual relationship.

Sexual satisfaction of men has been shown to decrease after an SCI. Different studies report the percentage of sexual dissatisfaction to be from 42% to 77%.[18–20] One study of 449 participants' adjustment after SCI revealed that satisfaction with living arrangements increased with increasing age ($p < .001$) compared to satisfaction with sex life, which decreased with increasing age ($p < .05$).[21] Reasons for sexual dissatisfaction ranged from lack of mobility and inability to reach orgasm to lack of partner. Sexual dissatisfaction was reported by 42% of the SCI participants in a study that concluded that the patients' feelings and their partner's feelings about intercourse were the major factors related to sexual satisfaction after SCI.[5]

Physiological Effects of Aging

An increase in age is accompanied by an increase in age-related disorders, such as muscle weakness, osteoporosis, and benign prostatic hypertrophy (BPH). Changes in body composition, fatigue, diminished sexual interest, and increased prevalence of erectile dysfunction all affect male quality of life. Many of these disorders are the result of changing hormone production patterns. There are three endocrine axes that affect age-related changes in hormone concentrations: (a) the hypothalamic-pituitary-testicular axis results in lower serum testosterone and higher LH and FSH levels; (b) the hypothalamic-pituitary-adrenal axis causes a gradual decline of dehydroepiandrosterone (DHEA) and DHEA-sulfate, and (c) the growth hormone (GH) insulin-like growth factor I (IGF-I) axis results in decreased hormone production similar to that seen in GH-deficient adults.[22] Decreased levels of androgens can adversely affect the male sex drive.

In addition to the metabolic and hormonal changes that occur in able-bodied men, there are changes that are unique to persons with SCI, secondary to both disruption of neurological pathways and decreased level of activity. Studies have shown that significant body composition changes, such as loss of lean muscle and bone mass and relative increase of adiposity, occur after paralysis.[23] These body composition changes can be exacerbated by a concomitant reduction of anabolic hormones, testosterone, and GH. This altered body composition and activity level has been associated with insulin resistance, lipid and carbohydrate metabolic disorders, and an increased risk of cardiovascular disease.[23] Frequently, dyslipidemias and hypertension can be the result of increased elevated plasma insulin in patients with SCI that can lead to premature atherosclerosis and coronary heart disease. There is evidence suggesting that endogenous anabolic hormone levels are depressed in a proportion of SCI patients.[24] Furthermore, reduced serum testosterone and GH/IGF-I levels may exacerbate the adverse lipid and body compositional changes and reduce exercise tolerance and consequently affect sexual function and quality of life of these men. Physiologic testosterone replacement has been provided for hypogonadal states in able-bodied men and is being studied in men with "physiologic" testosterone deficiency. Testosterone replacement has been shown to improve bone density, body composition, and muscle strength in elderly men with hypogonadism.[25] The effect of testosterone replacement on sexual functioning and quality of life is less clear.[26,27] It remains to be determined whether testosterone replacement will be beneficial in the aging individual with SCI.

Sex Drive

Masters and Johnson's study[28] of 200 men and 150 women between the ages 50 and 90 reported that, although all age groups were sexually active, there was a slower and less intense response as a direct result of the aging process. This study also concluded that the frequency of sexual activity of earlier years was predictive of the level of sexual activity later in life.

The sudden onset of disability can result in inhibited sexual desire (ISD). Many psychological factors have been associated with ISD.[29] These factors can be divided into three groups: (a) *predisposing factors* such as substance abuse, sexual or physical abuse, psychosis, religious issues, disturbed family relationships, and restrictive upbringing; (b) *disability factors* such as poor self-esteem, body image disturbances, prolonged depression, feelings of inadequacy, rejection by partner, dependency issues, changes in sex roles, and feelings of vulnerability; and (c) *relationship factors* such as performance anxiety, poor communication, sexual incompatibility, rejection (loss of partner), dysfunction in partner, loss of attraction, and fear of emotional closeness.

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ported to be altered in men after SCI. Studies have shown that although sexual desire decreases after an SCI, the majority of men are still interested in sexual activity. In fact, 78% of 38 men in a study by Alexander and colleagues[5] reported their sexual desire as normal or high. Another study found that 95% of 145 men with SCI had continued interest in sex.[18] A third report indicated that the more severe the level of injury, the greater the decrease in sexual desire; about 20% of men with SCI reported weak and very weak sexual desire.[19] It would seem that sexual desire in persons with SCI would not be altered by the aging process. Persons who retain interest in sexual activities after SCI should continue to do so, unless other medical conditions intervene.

Sex Acts

Research has consistently shown a decline in sexual activity with age for both men and women.[30] For men, the reasons for this decline are primarily age, fatigue, boredom, poor health, performance anxiety, and medications, all of which have been related to erectile dysfunction.[31,32] Nevertheless, research indicates that sexual activity generally continues into advanced age. These studies report up to 80% of participants over 50 years of age being sexually active, with 50%–58% engaging in weekly sex.[16]

A study of the sexual responses of 39 men aged 51 to 90 years revealed that the older the man, the longer it took to achieve erection.[31] In elderly men, penile erections took two to three times longer to develop. An erection might be maintained for a long period without ejaculation or a full erection might not occur. Furthermore, it was more difficult to regain erection after a full erection was lost without ejaculation.

Among other age-related changes in male sexual function are reduced nipple turgidity and loss of sex flush. Diminished myotonia and reduced incidence of involuntary spasms were noted in older men during the plateau phase. There was no change in the color of the glans penis, and testicular elevation took place later in the plateau phase with full excursion not always occurring before orgasm. The vasocongestive response of the scrotal area was also found to be significantly diminished in men older than 60 years of age.[31] The orgasm phase was characterized by reduced myotonia and less frequent penile and rectal sphincter contractions. The volume of ejaculatory fluid was also reduced. Additionally, the orgasm phase was followed by rapid penile detumescence and testicular descent as well as an extended refractory phase lasting up to several days.

A recent study of 1,688 men[32] aged 50–78 years reported that the prevalence of significant erectile dysfunction and ejaculatory dysfunction increased from 3% and 3%, respectively, in men 50–54 years of age to 26% and 35% in the 70–78 age group. In general, the participants of this study were more concerned about erectile dysfunction than ejaculatory dysfunction. The frequency of sexual activity declined with age and was lower in men with erectile and ejaculatory dysfunction. Of the sexually active men, 17%–28% did not have normal erections, indicating that normal erections are not a definite prerequisite for a sexually active life.

Although the majority of patients with SCI resume sexual activity, the frequency of sexual activity after SCI has been shown to decrease by up to 50%.[20] Factors associated with frequency of sexual activity include

opportunities for sex[19] and the partner's desire for sex.[5] However, the level and degree of SCI were not found to be predictors of sexual activity frequency as opposed to the ability to meet a potentially interested sexual partner. Despite the fact that sexual arousal is altered after SCI, studies have shown that 40% of persons with tetraplegia and 75% of persons with paraplegia were aroused after nipple stimulation, presumably because the area around the level of injury was hypersensitive.[19] Additionally, genital stimulation resulted in sexual arousal in 72% of participants.[19]

The pattern and types of sexual activity that men engage in also differ after SCI. Penile-vaginal intercourse was reported to be the preferred activity in 99% of men before SCI compared to 16% after injury.[5] In this study, 97% of men engaged in intercourse prior to SCI compared to 61% after SCI. After injury, however, most men preferred oral sex, kissing, and hugging. Another study reveals that after SCI 78% of men reported engaging in oral-vaginal stimulation and 76% in stroking the penis; only 54% reported penile-vaginal intercourse.[19]

Advancing age in addition to SCI presents a new and unique set of problems for satisfactory sexual response. SCI results in some type of erectile dysfunction in most men. Additionally, some of the prescribed medications to treat SCI-related conditions can have deleterious effects on the man's ability to achieve erection. However, despite the lack of some components of either psychogenic or reflex erections, many men will be able to have an erection adequate for penetration.

To understand the specific effect of SCI on the male sexual response, one must first determine the level and degree of the injury and whether the injury at the sacral roots is upper motor neuron (UMN) or lower motor neuron (LMN) by examining the bulbocavernosus or anal wink reflexes. Reflex erectile response is originated through sacral stimulation and is mediated by the parasympathetic nervous system compared to psychogenic erectile function, which is controlled by the hypogastric plexus that originates at the T11-L2 levels in addition to the sacral plexus.[33] Based on current available knowledge, men with complete UMN injury should be able to achieve reflex but not psychogenic erection. On the other hand, men with incomplete injuries should have reflex erection and a certain percentage of them should be capable of psychogenic erection. Furthermore, it has been reported that if men retain penile, scrotal, and perianal pinprick sensation (reflect L1-L2 and S4-S5 dermatomes), they should be able to achieve psychogenic erection.[34]

One self-report study on orgasm in men after SCI indicated that 42% were able to achieve orgasm[19]; another self-report study indicated that 47% were able to achieve orgasm.[5] The nature of the their orgasm was described as similar, weaker, or different after SCI. Furthermore, among the men with complete injuries, 38% were reported to be orgasmic.[5] One study[35] suggests that "orgasm in one form or another may be retained as long as either the autonomic innervation of the adnexa or the somatic innervation of the pelvic floor musculature remains intact."(p215)

Coordinated effects of sympathetic and parasympathetic as well as the somatic nervous systems control the more complex process of ejaculation. Retrograde ejaculation is a common occurrence after an SCI when the semen is ejected into the bladder due to the lack of closure of the bladder neck. Etiological factors responsible for reduced sperm

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count and motility in men with SCI are thought to include stasis, lack of temperature control, and chronic infections.[36] One study of men with SCI has shown that alterations in sperm count typically occur within weeks of the injury.[37]

In recent years, the introduction of oral medications such as sildenafil has revolutionized the treatment of erectile dysfunction. Sildenafil is a specific inhibitor of phosphodiesterase type 5 and is considered to be a powerful therapy for erectile dysfunction of different etiologies. One study of 482 able-bodied men over the age of 65 (411 had erectile dysfunction of broad-spectrum etiology, 71 had erectile dysfunction and diabetes) reported that sildenafil significantly improved erectile function in both groups and further concluded that it was an effective and well-tolerated treatment for erectile dysfunction in elderly men.[38] Sildenafil has also been tested in men with SCI. One study reported that 38 out of 41 men tested had a positive response to sildenafil and reached a penile rigidity sufficient for sexual intercourse. Of these, 24 had reflexogenic erections, 4 had psychogenic erections, and 11 had both types. The efficacy of sildenafil depends on intact sacral segments S2-S4 or thoracolumbar segments T10-L2.[39] Side effects of sildenafil have been reported to include headache, dizziness, and hypotension.

Effects of Chronic Illness on Sexual Function

Coronary artery disease

Because participation in sexual activity is an important predictor of the quality of life of most adults,[40] conditions that can disrupt this activity can have a significant impact on the lives of patients. Coronary artery disease (CAD) has a well-known potential for interfering with sexual function. Although cardiac disease does not have a direct impact on genital sexual functioning, its psychological and peripheral effects on physical function, such as diminished cardiac reserve[41] and angina,[42] are considerable.[43]

Erectile dysfunction and premature ejaculation are two aspects of sexual dysfunction that commonly occur in men after myocardial infarction (MI).[44] Although the frequency of post-MI ejaculatory problems is disputed, several studies have shown the rate of post-infarct impotence to be 10%–15% in large groups of men.[45] Some studies have suggested that post-infarct impotence is mainly due to patient anxiety, despite the patients' claim to the contrary.[46] The most commonly occurring psychological effects after an MI are denial, anxiety, and depression. In fact, studies have shown that 40%–70% of men had decreased frequency and quality of sexual activity after an MI.[47]

As in the general population, both hypertension and MI are more prevalent among older men with SCI than among younger men with SCI. One study found that 33.33% of 93 participants over 50 years of age compared to 5.09% of 255 participants under 50 years of age had suffered from MIs.[48] In fact, cardiovascular disease is reported to be one of the most common causes of death among 713

men with SCI, with the incidence of 24%.[10] It is important to raise and address concerns about safety of sexual activities in individuals with SCI and CAD.

Some medications prescribed for the treatment of CAD, hypertension, and congestive heart failure can also have an adverse effect on a man's sexual activity. Many commonly used antihypertensive medications, such as beta blockers, are believed to have deleterious sexual side effects.[49] Digoxin has been shown to decrease testosterone levels and subsequently decrease sexual desire, arousal, and erectile function.[43] Furthermore, caution must be exercised when prescribing sildenafil to men with a history of CAD; its use is contraindicated in patients on any kind of nitrate therapy.

Although cardiac conditions can occur in younger individuals, they are mainly diseases of middle age and older individuals. However, as discussed previously, men with SCI are at an increased risk for CAD because of metabolic changes and lack of mobility. Furthermore, men with SCI frequently use sildenafil as treatment of their sexual dysfunction; they have to discontinue this treatment if they start on any kind of nitrate therapy. Fortunately, the effects of CAD on sexuality and potential treatment methods of sexual dysfunction are continually being explored. However, these research projects need to be expanded to include patients with SCI.

Diabetes mellitus

Approximately 16 million Americans have diabetes mellitus (DM),[50] a serious disorder of glucose metabolism and the body's ability to properly respond to insulin. DM is a complex disease affecting multiple organ systems. Clinical features common to DM include thirst, polyuria, fatigue, blurred vision, and paresthesias. Diabetes can potentially affect every aspect of male sexuality.[51–54] As noted earlier, individuals with SCI are prone to insulin resistance and are at a greater risk than the general population for glucose intolerance and diabetes. A study of veterans with SCI and no known history of diabetes found that 22% had diabetes and another 34% had impaired glucose tolerance according to World Health Organization criteria.[55] A similar study in a nonveteran population found that 13% had undiagnosed diabetes and 29% had impaired glucose tolerance.[56]

The extent to which male libido is affected by the physiological consequences of diabetes is the subject of some controversy. In a study of 314 men who had developed diabetes before the age of 60, 160 men reported sexual dysfunction that developed several months to years after the diagnosis of diabetes.[57] Of those 160 men, about 50% reported decreases in libido. Another study of seven diabetic men with impotence revealed that they all had evidence of depression and neuropathy.[58] Diabetic autonomic neuropathy appears to have a profound effect on the parasympathetic nervous system, which is responsible for erectile response. In men, the adverse effects of diabetes on ejaculation, a sympathetic nervous system response, and orgasm are much less common than effects on erection and libido. In a study of 80 diabetic men, 27 reported erectile dysfunction, 25 reported decreased libido, and only 5 described orgasmic dysfunction. Of those 5 men, 3 had premature ejaculation and 2 had retarded ejaculation.[54] Retrograde ejaculation is another frequently occurring abnormality of diabetic men and is thought to be

due to internal vesicle sphincter dysfunction secondary to diabetic neuropathy.[52]

Depression

Depression can be associated with a number of potential losses associated with aging. The loss of a job, good health, attractive physical appearance, or close friends and family can result in depression. Depression has also been associated with sexual dysfunction in general and erectile dysfunction in particular.[59] Regardless of whether erectile dysfunction is a symptom of depression or its cause, these conditions are frequently comorbid. Recognition of sexual dysfunction associated with depression is essential for proper treatment and patient satisfaction.

The level of depression after disability may be the single most important factor in determining the level of sexual desire.[29] One of the most common psychological problems associated with aging and SCI is depression.[60] The age of onset of disability can affect the individual's emotional and sexual adjustment. For example, the impact of SCI on a 17-year-old man will be quite different from the impact on a 50-year-old man.[61] Loss of mobility, health, and attractive physical features can all result in depression. Additionally, performance anxiety and fear of disappointing a partner will most likely cause sexual dysfunction.[15] The disabled man might harbor feelings of inadequacy as a person and a sexual partner. Those feelings can lead to fear of disappointing his partner sexually or even fear of abandonment.

Medications used to treat depression can also affect sexual function. Psychotropic drugs, such as selective serotonin reuptake inhibitors (SSRIs),[62] can result in erectile and ejaculatory dysfunction. Benzodiazepines can cause decreased sexual desire and arousal as well as delayed ejaculation.

Cancer

It is estimated that approximately 189,000 cases of prostate cancer will be diagnosed in the United States in 2002,[63] which makes it the most common diagnosed male cancer. This alarming statistic may be the result of increased life expectancy as well as improvements in screening techniques and increased interest and awareness among patients.

Various treatment options for prostate carcinoma such as prostatectomy, radiation or hormonal therapy, and bilateral orchiectomy can all have an impact on sexual function. Studies have shown that radical prostatectomy results in erectile dysfunction in almost 100% of patients, with only 10% to 15% of them being able to regain erectile function.[64] However, the preservation of both neurovascular bundles results in a 76% return of erectile function after prostatectomy. In addition, retrograde ejaculation has also been reported to be prevalent after both transurethral and transabdominal resections.[64] Radiation therapy can cause sympathetic nerve damage as well as testicular damage resulting in impotence, urethral stricture, urinary incontinence, ejaculatory pain, and a reduction in semen flow.[64,65] All hormone therapy management methods result in a decrease of testosterone of up to 95%, resulting in impotence and decreased libido.

Penile carcinoma occurs most commonly in men over the age of 50 and comprises 1% of diagnosed male cancers.[66] Regardless of its low incidence, penile cancer can have a profound, devastating impact on male sexuality. Fortunately, men whose cancers are removed by partial penectomy retain the ability for orgasm and ejaculation.

Medical treatment

The impact of ongoing treatment for SCI-related or comorbid conditions on sexual function must also be considered. For example, intrathecal baclofen, a form of treatment for spasticity secondary to SCI, has been shown to compromise the erectile and ejaculatory ability. This effect is reversible.[67] Unfortunately, those individuals who receive intrathecal baclofen often have no other viable option for treating spasticity.

Summary

The reported data in this article confirm that sexual function of the aging man with SCI is a complex phenomenon consisting of the interplay of many determining factors. The desire and ability to engage in sexual function can be adversely affected by complications inherent to aging with SCI. However, it is conceivable that with proper effort and education one can balance physiologic decline and increasing disability with improved self-realization and self-perception for a more mature sexually satisfying relationship.

To properly understand the sexual function of an aging man with SCI, one must have a thorough understanding of male neurologic, physiological, and psychological sexual functioning as well as the aging process. The underlying cause of sexual dysfunction and the role of other comorbid conditions must be determined before any course of treatment can be contemplated. The clinician must, therefore, address all aspects of the patient's function and devise treatment strategies to target the individual needs of the patients. These strategies may include pain management, exercise, rehabilitation programs, and medical and psychological intervention.

The psychological impact of disability and chronic illness on sexual function must not be minimized. In addition to coping with the concerns about aging, men with SCI may have to deal with losses in function and physical attractiveness, medication side effects, and the reactions of friends, spouse, and other family members. Clinicians can make use of various treatment modalities, such as psychotherapy, support groups, and medications. The goal of psychological support is to educate patients and family members on the disease process and life stressors and to train them in coping strategies. Paradoxically, persons with SCI, having already been forced to address sexual dysfunction after the SCI, may be better prepared than able-bodied persons to deal with the consequences of aging in this area.

The impact of aging on the sexual function of men with SCI has not been adequately studied. The scant available research in this area underscores the need for further studies to better understand the sexual function of the aging spinal cord-injured man. Future research should address the impact of declining physical function in men with SCI and the role of other comorbid medical conditions and emotional concerns on the sexual experience.

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