

## Assessment and Treatment of Sexual Dysfunction in Multiple Sclerosis

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### INTRODUCTION

#### The Nature and Frequency of Sexual Dysfunction in Women

The few epidemiological studies on sexual dysfunction in women with MS report a wide variety of sexual concerns that range in frequency between 40 and 85 percent.<sup>1-6</sup> The most common complaints are fatigue, decreases in genital sensation (27-47%), decrease in libido (31-74%) and vaginal lubrication (36-48%), and difficulties with orgasm (37-45%).<sup>2</sup> In several studies, a correlation was found between sexual difficulties and overall level of disability. However, in one study, the rates of sexual dysfunction in MS were higher than a non-MS comparison group only on genital numbness interfering with sexuality.<sup>7</sup> In another study, **fatigue, memory and concentration complaints, and urinary symptoms were significant predictors of SD.**<sup>1</sup>

#### The Nature and Frequency of Sexual Dysfunction in Men

Sexual dysfunction is present in 50 to 90 percent of men with MS.<sup>8</sup> Difficulty acquiring or maintaining satisfactory erections seems to be the most common male complaint in MS, with frequencies ranging from 25 to 75 percent of those surveyed. These observations are noteworthy in comparison to a 5-percent occurrence rate of erectile dysfunction in healthy 40-year-old men in the general population, and a 15- to 25-percent occurrence rate after age 65.<sup>3-5,7,9-10</sup> The combined findings of numerous studies on the causes of erectile dysfunction in MS suggest both a physical and a psychogenic (emotional) role in MS-related erectile dysfunction. **In addition to erectile problems, surveys of men with MS have identified decreased genital sensation, fatigue (75%), difficulties with ejaculation (18-50%), and decreased interest or arousal (39%), and anorgasmia (37%) as fairly common complaints.**<sup>8</sup> In one of the most comprehensive and methodologically sound surveys to date, only 35 percent of men reported no sexual problems, and many reported multiple problems.<sup>11</sup>

## Primary, Secondary and Tertiary Sexual Dysfunction

The ways in which MS can affect sexuality and expressions of intimacy have been divided into *primary*, *secondary* and *tertiary* sexual dysfunction.<sup>12</sup> Primary sexual dysfunction results from central nervous system lesions that directly affect the sexual response. In both men and women, this can include a decrease in, or loss of, sex drive, decreased or unpleasant genital sensations, and diminished capacity for orgasm. Men may experience difficulty achieving or maintaining an erection, and a decrease in, or loss of, ejaculatory force or frequency. Women may experience decreased or absent vaginal lubrication. Secondary sexual dysfunction stems from nonsexual MS symptoms that can also affect the sexual response, such as bladder and bowel problems, fatigue, spasticity, muscle weakness, body or hand tremors, impairments in attention and concentration, and nongenital sensory paresthesias. Tertiary sexual dysfunction is the result of disability-related psychosocial and cultural issues that can interfere with one's sexual feelings and experiences.

### Screening for Sexual Dysfunction in the Office or Clinic

Despite the prevalence of sexual dysfunction in persons with MS, 63 percent of patients report that they have never talked about sexual difficulties with their health-care provider.<sup>2</sup> Similarly, a recent study noted that only 20 percent of patients recalled being asked about sexual dysfunction from their medical provider.<sup>13</sup> However, reporting of sexual symptoms significantly increases with direct inquiry. Thus asking about sexual dysfunction is an important part of the medical exam.

There are several ways the busy MS practitioner can screen for sexual dysfunction in the office or clinic setting. If a review of physical symptoms is conducted as part of the evaluation, a question about sexual functioning can be asked when inquiring about bladder and bowel function. A 15-item self-report screen developed specifically for persons with MS can be filled out by the patient in about two minutes.<sup>14</sup> Following a positive screen for sexual dysfunction, ask the patient if he or she would like help with these symptoms. In one randomized study, simply providing educational materials on MS and sexual dysfunction was associated with improvements in reported symptoms on follow-up.<sup>15</sup>

To help guide the management of symptoms, the Sexual Dysfunction Management and Expectations Assessment in Multiple Sclerosis – Female (SEA-MS-F) is an 8-item questionnaire that can help providers determine a patient's expectations for treatment.<sup>16</sup> Other tools include: the Female Sexual Function Questionnaire (SFQ28)<sup>2</sup>, the Sexual Satisfaction Survey (SSS), or the International Index of Erectile Function (IIEF).<sup>8</sup>

## PRIMARY SEXUAL DYSFUNCTION IN MS

### Evaluation and Treatment

A more comprehensive evaluation process may include a physical history and examination, a review of current medications for their possible effects on sexual functioning, a detailed sexual history, and perhaps some specialized tests of bladder and/or sexual function. The sexual history thoroughly examines the current problem and investigates both present and prior sexual relationships and

behaviors. The specialist may wish to conduct a joint interview of the person who has MS and his or her sex partner in order to gain a better understanding of the problem as it is experienced by both individuals. A number of questions may be asked regarding the couple's communication, intimacy, and sensual or erotic behaviors in order to obtain a balanced view of the strengths and weaknesses of their relationship. Once this interview has been completed, treatment may begin with feedback from the assessment process, education about the effects of physical symptoms of MS and suggestions for managing these symptoms. In general, research suggests dual treatment of both physical and psychosocial aspects of sexual dysfunction.

### Decreased Vaginal Lubrication

Similar to the erectile response in men, vaginal lubrication is controlled by multiple pathways in the brain and spinal cord. Decreased vaginal lubrication can be addressed by using generous amounts of water-soluble lubricants, such as K-Y Jelly<sup>®</sup>, Replens<sup>®</sup>, or Astroglide<sup>®</sup>. Healthcare professionals do not advise the use of petroleum based jellies (e.g., Vaseline<sup>®</sup>) for vaginal lubrication, because they greatly increase the risk of bacterial infection.

Another option is pelvic floor muscle training with or without electromyographic biofeedback and transcutaneous tibial nerve stimulation. A randomized control trial demonstrated improvements in vaginal lubrication, arousal and satisfaction.<sup>17</sup> Sildenafil (**Viagra<sup>®</sup>**), **in one small (N = 19) study, evidenced improvement in vaginal lubrication, but did not improve other symptoms such as anorgasmia.**<sup>18</sup>

### Sensory Changes

Uncomfortable genital sensory disturbances, including burning, pain, or tingling, can sometimes be relieved with gabapentin (Neurontin<sup>®</sup>), carbamazepine (Tegretol<sup>®</sup>), phenytoin (Dilantin<sup>®</sup>) or divalproex (Depakote<sup>®</sup>) or by a tricyclic antidepressant such as amitriptyline (Elavil<sup>®</sup>). Estrogen replacement therapy can help with burning and dyspareunia, while topical estrogen may help improve clitoral sensitivity and/or reduce pain during intercourse.<sup>2</sup> Decreased genital sensation can sometimes be overcome by more vigorous stimulation, either manually, orally, or with the use of a vibrator. Exploring alternative sexual touches, positions and behaviors, while searching for those that are the most pleasurable, is often very helpful. Masturbation with a partner observing or participating can provide important information about ways to enhance sexual interactions.

### Orgasmic Dysfunction

MS can interfere directly or indirectly with orgasm. In women and men, orgasm depends on nervous system pathways in the brain (the center of emotion and fantasy during masturbation or intercourse), and pathways in the sacral, thoracic and cervical parts of the spinal cord. If these pathways are disrupted by plaques, sensation and orgasmic response can be diminished or absent. In addition, orgasm can be inhibited by secondary (indirect physical) symptoms, such as sensory changes, cognitive problems and other MS symptoms. Tertiary (psychosocial or cultural) orgasmic dysfunction stems from anxiety, depression, and loss of sexual self-confidence or sexual self-esteem, each of which can inhibit orgasm.

Treatment of orgasmic loss in MS depends on understanding the factors that are contributing to the loss, and appropriate symptom management of the interfering problems.

## Decreased Libido

Decreased libido is much more common in women with MS than men. To date, there are no published clinical trials of medications that restore libido in MS. Testosterone replacement in persons with abnormally low physiological levels has been tried in non-MS populations. However, there is research currently underway that is evaluating medicines that enhance sympathetic arousal, to see if this impacts libido in women with MS.

Pelvic floor or Kegel exercises are sometimes prescribed to enhance female sexual responsiveness. However, in women with significantly reduced sensation, EMG biofeedback is required to help them identify and contract the appropriate pelvic floor muscles in the prescribed manner. The rationale for Kegel exercises is that sensation and contraction of the muscles around the vagina is an important part of the female sexual response. As previously mentioned, a randomized control trial of pelvic floor muscle training with and without EMG biofeedback and transcutaneous tibial nerve stimulation demonstrated improvements in vaginal lubrication, arousal and sexual satisfaction.<sup>17</sup>

When loss of desire is due to secondary sexual dysfunction (for example, as a result of fatigue) or tertiary sexual dysfunction (for example, as a result of depression), treatment of the interfering secondary or tertiary symptoms frequently restores libido. When a person's libido is diminished by MS, he or she may begin to avoid situations that were formerly associated with sex and intimacy. Sexual avoidance serves as a source of misunderstanding and emotional distress within a relationship. The partner may feel rejected, and the person with MS may experience anxiety, guilt and reduced self-esteem. Misunderstandings surrounding sexual avoidance frequently compound the loss of desire and diminish emotional intimacy in relationships.

Some men and up to 45 percent women<sup>19</sup> who have sustained loss of libido report that they continue to experience sexual enjoyment and orgasm even in the absence of sexual desire. They may initiate or be receptive to sexual activities without feeling sexually aroused, knowing that they will begin to experience sexual pleasure with sufficient emotional and physical stimulation. This adaptation requires developing new internal and external "signals" associated with *wanting* to participate in sexual activity. In other words, instead of experiencing *libido* or *physical desire* as an internal "signal" to initiate sexual behaviors, one can experience the anticipation of closeness or pleasure as an internal cue that may lead to initiating sexual behaviors and the subsequent enjoyment of sexual activity.

Changing one's sexual signals or cues to initiate sexual activity can be assisted by conducting a body mapping exercise, which constitutes modified sensate focus exercises that take into account MS symptoms.<sup>20</sup> Body mapping is typically used to help compensate for primary (genital) or secondary (nongenital) sensory changes, but it can be a useful first step in the enhancement of physical pleasure and emotional closeness, as well as sexual communication and intimacy.

Diminished libido is frequently associated with a decrease in sexual fantasies. Diminished libido can sometimes be stimulated by increasing sexual imagery and fantasy. Historically, most sexual literature, videos and magazines have been developed to appeal to a male rather than female audience.

Recently, however, some sexual videos are being marketed to appeal to couples and women. They typically include fewer close-ups of genitals during orgasm and have more emotional and romantic content and imagery. When libido is partially intact but difficulty sustaining arousal and/or having orgasms occurs, sharing sexual fantasies or watching sexually oriented videos together may help sustain arousal. Similarly, introducing new kinds of sexual play into sexual behavior can help maintain arousal and trigger orgasms.

## Erectile and Ejaculation Problems

Erectile dysfunction is the most common sexual dysfunction symptom reported by men. There are a number of oral FDA approved PDE-5 (phosphodiesterase-type-5) inhibitors to treat erectile dysfunction. The mechanism of action involves active inhibition of the PDE-5 enzyme with subsequent increases in cyclic guanosine monophosphate (cGMP), which maintains smooth muscle relaxation and venous compression in the penis. These medicines include sildenafil (Viagra<sup>®</sup>), vardenafil (Levitra<sup>®</sup>) and tadalafil (Cialis<sup>®</sup>). To date, only sildenafil has been evaluated in clinical trials with men who have MS, although the other medicines are very similar and may be prescribed.<sup>21</sup> PDE-5 inhibitors do not improve libido, but are associated with increased frequency and satisfaction of erections and intercourse. These medicines are contraindicated for use with nitrate-based cardiac medicines, since they interact and can lower blood pressure excessively.

In addition to the PDE-5 inhibitors, there are other oral medicines in development for erectile dysfunction. For example, apomorphine SL (Uprima<sup>®</sup>) is a dopaminergic agonist with affinity for D(2) dopamine receptor sites in the brain known to be involved in sexual function. Apomorphine induces selective activation in the nucleus paraventricularis leading to erection. It has not been tried to date in MS.

Injectable medications for erectile dysfunction in MS include prostaglandin E1 (alprostadil; Prostin VR<sup>®</sup>), which has been approved by the FDA for the management of erectile problems. Auto-injectors are available that work with a simple pushbutton mechanism. Dose titration is done in the physician's office, to establish the lowest effective dose and minimize the probability of priapism (an overly prolonged erection), a potentially serious side effect. A second potential side effect is scarring at the injection site. Injectable prostaglandin E1 has been widely used in neurologic populations, including MS.<sup>22</sup>

Alprostadil can also be delivered via a urethral suppository (Muse<sup>®</sup>). The drug is then absorbed into the penile tissues, stimulating an erection. However, approximately one-third of the men who tried the drug reported penile discomfort. In rare instances, priapism can occur.

Phentolamine (Regitine<sup>®</sup> in the United States; Rogitine<sup>®</sup> in Canada) is sometimes used in combination with either prostaglandin E1 and/or papaverine to heighten medication efficacy. Phentolamine is an alpha-adrenergic blocking agent and will not induce erections without the presence of another medication (most frequently prostaglandin E1 and/or papaverine). Depending on the type of symptoms the man is experiencing, a urologist may prescribe different combinations of these medications.

One noninvasive way to achieve an erection is to use a vacuum assistive device. With this method, a plastic tube is fitted over the flaccid penis and a pump creates a vacuum that subsequently produces an erection. Then, a latex constriction band is slipped from the base of the tube onto the base of the penis. The band maintains engorgement of the penis for sexual activities, although it cannot be used for more than 30 minutes.

A more invasive form of treatment for erectile problems is the penile prosthesis. There are two types of penile prostheses: semi-rigid and inflatable. With the semi-rigid type, flexible rods are surgically implanted in the corpus cavernosa of the penis. These rods can be bent upward when an erection is desired and bent downward at other times. Following insertion of the rods, the penis remains somewhat enlarged, with a permanent semi-erection. With the inflatable type, a fluid reservoir and pump are surgically implanted in the abdomen and scrotum, with inflatable reservoirs inserted into the penis that inflate when an erection is desired. This type of prosthesis is barely noticeable, but the potential risks are significant. Surgical complications, infection, scarring, and difficulty operating the pump can create long-term problems.

Approximately 80 percent of the men who use these types of prostheses find them satisfactory. In general, a penile prosthesis is only recommended when other efforts to manage erectile dysfunction have not been successful.

In terms of difficulty with ejaculation, medications such as midodrine may prove beneficial. Another useful tool, also used in persons with spinal chord injury, is a penile vibratory stimulation device.<sup>23</sup>

The efficacy of any treatment depends on the ability of both partners to communicate openly about sexual issues and decide on methods that are comfortable and enjoyable for both. Education about treatment options provides persons who have MS and their partners with the language and knowledge that enables discussion and informed decision making.

## **SECONDARY SEXUAL DYSFUNCTION IN MS**

In multiple sclerosis, the incidence of fatigue, muscle tightness or spasms, bladder and bowel dysfunction, and pain, burning, or other discomfort can have adverse effects on the experience of sexual activity. The interference of these symptoms with sexual function can often be alleviated by taking an aggressive approach to symptom management.

### **Fatigue**

One of the most common secondary sexual symptoms in MS is fatigue. Fatigue greatly interferes with sexual desire and the physical ability to initiate and sustain sexual activity. Fatigue can be managed in a number of ways. Pharmacologic management generally involves prescribing stimulants such as modafinil (Provigil®), methylphenidate (Ritalin®) or antidepressants with an energizing effect, such as bupropion (Wellbutrin®), when they are not contraindicated (e.g., history of cardiac problems or seizures).

Non-pharmacologic management may include setting aside some time in the morning for sexual activity because this is often when MS fatigue is at its lowest ebb. Energy conservation techniques,

such as taking naps and using ambulation aids, can preserve the energy needed for sexual activities. Choosing sexual activities and positions that are less physically demanding or weight-bearing for the partner with MS may minimize fatigue during sex.

## Bladder and Bowel Symptoms

Pharmacologic interventions have also been used to manage bladder and bowel symptoms in MS. Some common symptoms of bladder dysfunction include incontinence and urinary urgency and frequency. Anticholinergic medications help manage incontinence by reducing spasms of the bladder and the urethra. One side effect of anticholinergics is dryness of the vagina. However, as previously mentioned, vaginal dryness can be alleviated by using generous amounts of a water-soluble lubricant, such as K-Y Jelly®. A physician may be able to help modify daily medication schedules to allow for maximum effectiveness at the time of planned sexual activity.

Restricting fluid intake for an hour or two before sex, conducting self-catheterization or voiding just before sexual activity, and avoiding alcohol, caffeine and tobacco will also minimize incontinence.<sup>24</sup> For men who are concerned about small amounts of urinary leakage, wearing a condom during sex is advised.

If an indwelling catheter is used, healthcare providers may be able to offer tips for handling or temporarily removing catheters. If a woman needs to keep the catheter in place, she can move it out of the way by folding it over and taping it to her stomach with paper tape. It is a good idea to experiment with different sexual positions and activities to find those that feel the most comfortable with the catheter in place.

## Spasticity

Spasticity can make straightening the legs, or changing leg positions for sexual activity, quite painful. Active symptomatic management of spasticity will minimize its impact on sexuality. Range of motion and other physical therapy exercises are commonly employed, as well as antispasticity medications, such as baclofen and tizanidine (Zanaflex®). Exploring alternative sexual positions for intercourse is helpful when spasticity is a problem. Women who have spasticity of the adductor muscles may find it difficult or painful to separate their legs. Changing positions (e.g., lying on one side with the partner approaching from behind) to accommodate this symptom may be important. Taking an antispasticity medication 30 minutes before anticipated sexual activity can be helpful.

## Weakness

Weakness is a common MS symptom, and it frequently necessitates finding new positions for satisfactory sexual activities. Reclining (non-weight-bearing) positions do not place as much strain on muscles and are therefore less tiring. Pillows can be used to improve positioning and reduce muscle strain. Inflatable wedge-shaped pillows are specifically designed to provide back support during sexual activity. Oral sex requires less movement than intercourse, and using a hand-held or strap-on vibrator can help compensate for hand weakness while providing sexual stimulation.

## Distractibility

Sustained attention and myotonia (increasing muscle tension) are usually required for sexual feelings to build progressively toward orgasm. MS can cause impairment of attention and concentration that may interfere with maintaining sexual desire during sexual activities. The main strategy to deal with distractibility is to minimize nonsexual stimuli and maximize sensual and sexual stimuli. Creating a romantic mood and setting, using sensual music and lighting, talking in sexy ways, and engaging in erotic touching provide multisensory stimuli that minimize “cognitive drift” during sex. Introducing humor at those moments when the person “loses attention” allows mutual acceptance of this frustrating symptom and helps minimize its impact.

## TERTIARY SEXUAL DYSFUNCTION IN MS

The physical changes experienced by people who have MS can alter their view of themselves as sexual beings, as well as their perception of the way others view them. The psychological and cultural context in which physical changes occur can adversely affect self-image, mood, sexual and intimate desire, and the ease or difficulty with which persons with MS communicate with their partners.

### Self-Image and Body Image

In Western societies, women are particularly susceptible to having a negative body image. The media’s depiction of women as unrealistically thin and oozing with sensuality is at odds with the reality of most women’s personal experience. The extremely high prevalence of diagnosed eating disorders, the variety of commercially packaged diet programs and cosmetic surgery centers, and the multibillion dollar cosmetics industry targeting women, all reflect the efforts of women to reconcile their sensual and sexual self-image with the unrealistic cultural feminine mystique. Women with MS may have difficulty enjoying their sensual and sexual nature because of the gap between their internalized cultural images of the “sensual woman” and their MS-related physical changes.

Similar cultural pressures affect men. Internalized cultural images of men as potent, aggressive and powerful are at odds with the illness experience. MS-associated changes in erectile capacity or employment can be associated with an internal sense of failure or defectiveness as the discrepancy between culturally induced self-expectations and one’s personal experience grows wider.

### Changing Roles

Changes in family and societal roles secondary to disability can affect one’s capacity for intimacy and sexuality. The person with MS who has difficulty fulfilling his or her designated work and household roles may no longer feel like an equal partner. The partner of a severely disabled individual may feel overburdened by additional caregiving, household and employment responsibilities. The couple’s intimate relationship can be threatened by the growing tension that results from these feelings.

In addition, the caregiving partner (either male or female) may have trouble switching from the nurturant role of caretaker to the more sensual role of lover. As a sexual partner of a woman (or



man) with a disability, a man may begin to think of his partner as too fragile or easily injured, or as a “patient” who is ill and therefore unable to be sexually expressive. If it is practical or culturally acceptable, having non-family members perform caretaking activities helps minimize this “role conflict.” When caretaking must be performed by the sexual partner, separating caretaking activities from times that are dedicated to romantic and sexual activities can minimize this conflict.

Accompanying these role changes may be an increasing sense of isolation in the relationship and less understanding of the partner’s struggles and perspectives. The diminishing capacity to understand and work through these issues creates greater isolation and misunderstanding, leading to increasing resentments.

### **Cultural Expectations Regarding Sexual Behavior**

The religious, cultural and societal influences in our lives help shape our thoughts, views and expectations about sexuality. One of the notions about sexuality that prevails in Western culture is a “goal-oriented” approach to sex. In this approach, the sexual activity is done with the goal of having penile-vaginal intercourse, ultimately leading to orgasm. Here, the sexual behaviors labeled as foreplay, such as erotic conversations, touching, kissing and genital stimulation, are seen as steps that inevitably lead to intercourse rather than as physically and emotionally satisfying sexual activities in their own right. Hence, couples are not thought to be having “real” sex until they are engaging in coitus, and sex is typically not considered “successfully completed” until orgasm occurs.

This Western view of sexuality leads to spending a great deal of time and energy worrying about the MS-related barriers to intercourse and orgasm (“the goal”) rather than seizing the opportunity to explore physically and emotionally satisfying alternatives to intercourse. The capacity to discover new and fulfilling ways to compensate for sexual limitations requires that couples be able to let go of preconceived notions of what sex *should* be and focus instead on openly communicating their sexual needs and pleasures without fear of ridicule or embarrassment.

### **MS-Related Emotional Challenges**

The MS experience is frequently associated with emotional challenges, including grief, demoralization and clinical depression.<sup>25</sup> These emotional struggles may temporarily dampen interest in sex or the ability to give and receive sexual pleasure. Coping with emotional changes to enhance sexuality has several aspects: assessment, education, professional treatment and coping interventions. Assessment of clinical depression can be done by a mental health professional who is familiar with MS. Treatment that involves antidepressant medications and psychotherapy typically offers symptom relief, including the restoration of sexual interest. It is important to select an antidepressant that will minimally impact sexual function. Physicians may want to consider lowering the antidepressant dose, using antidepressants that have less of an impact on sexual function (e.g., bupropion, mirtazapine, nefazodone, reboxetine), or adding a serotonergic antagonist (e.g., mirtazapine, mianserin) to the therapy.<sup>24,26</sup> Zemishlany and Weizman report significant improvements in orgasmic function when using antidepressant medications in combination with PDE5 inhibitors.<sup>26</sup>

## Talking With Your Patients and Acquiring Information

Often, neurologists and other MS healthcare providers do not spontaneously bring up sexual dysfunction. They may ignore sexuality because they perceive this line of questioning as an unwelcome intrusion into their patients' private lives, because they are personally uncomfortable asking about sexuality, or because they lack professional training in this area. Clinical experience and anecdotal evidence strongly suggest that the majority of persons with MS appreciate being asked about this symptom

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