FINDING SOLUTIONS FOR FEMALE SEXUAL DYSFUNCTION

ACOG

THE AMERICAN CONGRESS OF OBSTETRICIANS AND GYNECOLOGISTS

Dear Women's Health Care Provider,

On behalf of the American College of Obstetricians and Gynecologists, District II, we are pleased to provide you with *Finding Solutions for Female Sexual Dysfunction*. This resource guide offers relevant provider education regarding symptom subtleties and quality of life implications of FSD as well as appropriate diagnosis, management and referral for patients in a sensitive, caring manner. Resource guide content includes FSD symptoms and definitions, assessment tools, treatment strategies, as well as a list of relevant provider and patient resources.

Female sexual dysfunction (FSD) can have profound effects on women's relationships with sexual partners as well as self esteem, confidence and mental health. A woman suffering from sexual problems or FSD may be reluctant to discuss them with others, including her obstetrician-gynecologist. Surveys consistently show that patients want to talk about their sexual issues with health care providers, but are reluctant to initiate the conversation. Heightening awareness among ob-gyns about FSD, proper assessment methods and treatments, as well as the importance of sensitive and honest patient-provider dialogue is essential to the well-being and health of women.

We would like to extend our appreciation to the task force of medical experts who offered their expertise throughout the development of this resource guide. Their knowledge and dedication was invaluable throughout this initiative.

If you have any questions regarding the resource guide or District II's initiatives, please contact the ACOG District II office at info@ny.acog.org or (518) 436-3461.

Sincerely,

Scott D. Hayworth, MD, FACOG
Chair
ACOG District II

Female Sexual Dysfunction Task Force

Bernadith A. Russell, MD - *Chairperson*
Gloria A. Bachmann, MD, FACOG
Scott Chudnoff, MD, MS, FACOG
David L. Gandell, MD, FACOG
Ditza Katz, PT, PhD
Bat Sheva Marcus, LMSW, MPH, PhD
Ryan McIntyre
Donald T. Morrish, MD, FACOG
Ross Lynn Tabisel, LCSW, PhD

Staff

Donna Montalto, MPP
Katy Stevenson, MPP
Kristin Zielinski, MA, MPP

Table of Contents

Compiled in July 2010

This educational initiative was made possible through the generous support of Boehringer Ingelheim.

The American College of Obstetricians and Gynecologists, District II
152 Washington Avenue, Suite 300
Albany, New York 12210
*P: (518) 436-3461 * F: (518) 426-4728 * E-mail: info@ny.acog.org*
www.acogny.org

PROJECT OVERVIEW

In January 2010, ACOG District II formed a task force of women's health experts to create this educational resource guide focusing on female sexual dysfunction (FSD). The goal of this guide is to heighten ob-gyns' awareness of FSD, proper assessment methods and treatments, as well as the importance of sensitive and honest patient-provider dialogue. The educational content for this guide was shaped by a recent survey of ob-gyns, literature review and task force consensus. This guide was distributed to all District II members and is available to any interested provider organizations.

Sexual dysfunction encompasses a broad range of psychological, physical, interpersonal and physiological issues. FSD is a term used to describe various sexual problems, such as low desire or interest, diminished arousal, orgasmic difficulties and dyspareunia.

For sexual health issues, women often depend on their ob-gyn as the only health care provider they may see on an annual or regular basis. Ob-gyns should be open to assessing and managing a variety of sexual dysfunction conditions within their practice; they can also serve as an important source for referring women to appropriate services if needed. Due to the complex nature of FSD and a myriad of factors that may result in the inability of a patient to fully express her sexuality, ob-gyns may prefer a team approach that incorporates referral to and consultation with other specialty providers.

This document serves to guide best practices; however, the most essential best practices are those that seek to recognize the need to evaluate each patient individually and to utilize sound clinical judgment. With this in mind, these evidence-based guidelines provide a foundation from which women's health care providers can achieve optimal quality in patient care. It is also important to note that although current medications and methods used to treat FSD are listed in this guide, FSD continues to evolve and providers need to be aware of available options when considering treatment strategies.

Normal Sexual Response

In order to evaluate sexual dysfunction in a female patient, it is important to have an understanding of normal female sexual function. An early model of female sexual response was based on the original work published by Masters and Johnson in 1966, and the later adaptation of their work by Kaplan in 1979. This model, known as the Linear Model (Figure 1) implies that in women, sexual desire leads to arousal which leads to orgasm, which is followed by a period of resolution. This model does not take into account many factors involving why females are sexual, and relies on spontaneous sexual desire, which is not always present. *[1]*

Figure 1: **Traditional Sexual Response Cycle presented by Masters, Johnson, and Kaplan**
(Basson R. Female sexual response: the role of drugs in the management of sexual dysfunction. Obstet Gynecol 2001; 98:350-353.)

Subsequent models of sexual response in women incorporate the woman's need for emotional intimacy and the role of psychological factors in sexual response. In this circular model (Figure 2), positive sexual experiences lead to greater emotional intimacy between a woman and her partner. This positive encounter will serve to increase her receptivity towards sexual stimuli and allow for the sexual desire to continue the sexual cycle. This model shows that the sexual response in women can be affected in many areas. Negative experiences, either emotional or physical, may lead to decreased desire and the inability for a woman to be sexually responsive with her current (or possibly future) partner. *[1]*

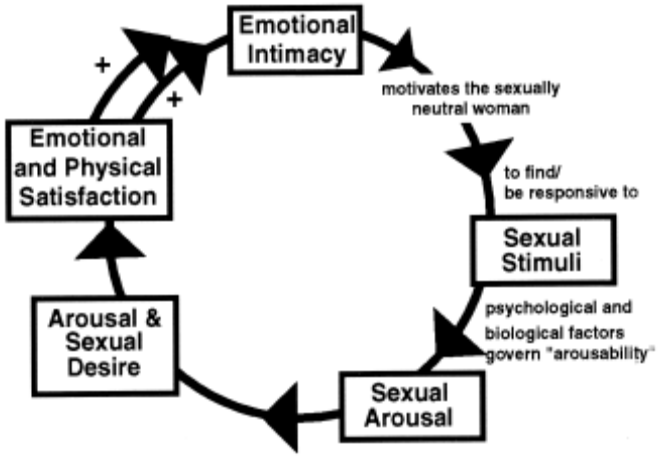


Figure 2: **Intimacy Based Female Sexual Response Cycle**
(Basson R. Female sexual response: the role of drugs in the management of sexual dysfunction. Obstet Gynecol 2001;98: 350-353.)

Subsequent models of sexual response in women have blended the two prior models and take into account both spontaneous desire and emotional intimacy. In these models, spontaneous sexual desire, which can occur for various reasons such as the initiation of a new relationship or long physical absence of a partner, can prompt a woman to discover sexual arousal through either partnered sex or self-stimulation. However, spontaneous sexual drive does not always occur frequently (especially in long-term relationships) and is not essential. A lack of spontaneous sexual drive alone is not considered a sexual dysfunction. *[1]*

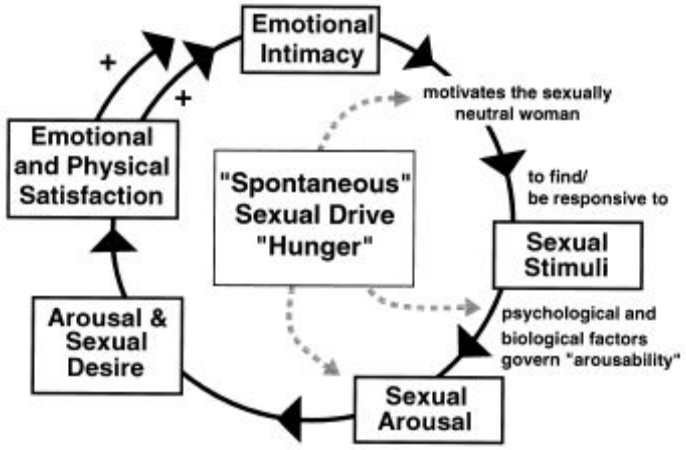


Figure 3: **Blended intimacy-based and sexual drive-based cycle**
(Basson R. Female sexual response: the role of drugs in the management of sexual dysfunction. Obstet Gynecol 2001; 98:350-353.)

Finally, there is interplay between organic/physical factors and psychosocial phenomena that may inhibit or promote sexual responsiveness (known as the "sexual tipping point"). Often, interventions and therapies focus on these physiologic and/or situational/relationship factors to improve sexual functioning.

Definition and Classification

The definition of FSD varies depending upon which classification system is used and is continuing to be a topic of interest with definitions periodically being refined. Prior to 1998, the two major classification systems were: The World Health Organization's *International Classification of Diseases-10* (ICD-10) and the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). The ICD-10 defines sexual dysfunction as "the various ways in which an individual is unable to participate in a sexual relationship as he or she would wish." *[2]* The DSM-IV defines female sexual dysfunction as "disturbances in sexual desire and in the psychophysiological changes that characterize the sexual response cycle and cause marked distress and interpersonal difficulty." *[3]* It is worth noting that the DSM-IV definition is specifically limited to psychiatric disorders and does not include organic causes of sexual dysfunction.

In 1998, the Sexual Function Health Council of the American Foundation for Urological Disease (AFUD) devised the first consensus-based definition and classification system for FSD. This incorporates the four major categories outlined in the DSM-IV and ICD-10 (desire, arousal, orgasm, and pain). However, classifications were expanded to include psychogenic and organic causes. The diagnostic definitions developed in the DSM-IV eventually included the "personal distress" criterion. *[4]*

If there is no distress, is there still a problem?

The inclusion of personal distress in the definition of sexual dysfunction has been met with some debate. Some clinicians argue that the presence of distress is not necessary to diagnose sexual dysfunction. They maintain that whether or not the woman is concerned by her situation should not be a consideration for diagnosis. Including personal distress reduces over diagnosing FSD in women who are happy with their sex life, despite their partner's displeasure. *[5]* On the other hand, distress due to sexual issues may lead to personal distress.

The Sexual Function Health Council of the American Foundation for Urological Disease also developed new definitions of sexual arousal and hypoactive sexual desire disorders and a new category of non-coital sexual pain disorder was added (*see "Other Sexual Pain Disorders" in Table 1*). In addition, a new sub-typing system for clinical diagnosis was devised, which includes lifelong versus acquired, generalized versus situational, and organic versus psychogenic or mixed or unknown origin. The sub-typing of sexual dysfunctions is a clinical judgment that is based on the best available evidence from the medical history, laboratory tests and physical examination. *[4]* The consensus definitions are located in Table 1 and are not mutually exclusive.

In addition to those listed below in the International Consensus Classification System of FSD (Table 1), Persistent Genital Arousal Disorder (also referred to as Persistent Sexual Arousal Disorder) is a disorder in which women experience "the physiological responses characteristic of sexual arousal, including genital and breast vasocongestion and sensitivity, that persists for an extended period of time (hours to days) and do not subside completely on their own." These physiological arousal symptoms are unrelated to any subjective feeling of sexual excitement or desire and do not subside with ordinary orgasmic experience.

In May 2013, the American Psychiatric Association will publish the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (DSM-V). The proposed changes may affect the classification of material within this resource guide. Although these changes may be minor and may combine diseases that are currently separated, providers should keep in mind that these are the psychiatric diagnoses as opposed to those derived from physical causes.

Table 1: International Consensus Classification System for FSD *[6]*

SEXUAL DESIRE DISORDERS Each disorder can be sub-typed into lifelong versus acquired; generalized versus situational; and organic versus psychogenic/mixed/unknown origin.	
***Hypoactive sexual desire disorder* (HSDD)**	Recurrent or persistent deficiency or absence of sexual fantasies and thoughts as well as a lack of receptivity to sexual activity that causes personal distress.
Sexual aversion disorder*	Recurrent or persistent phobic aversion to and avoidance of sexual contact with a sexual partner precipitating personal distress.
SEXUAL AROUSAL DISORDERS Recurrent or persistent inability to attain or maintain adequate sexual excitement, expressed as a lack of subjective excitement or a lack of genital or other somatic responses, which leads to personal distress.	
Genital sexual arousal disorder	Absence of or markedly diminished feelings of sexual arousal (sexual excitement and sexual pleasure) from any type of sexual stimulation. Vaginal lubrication or other signs of physical response still occurs.
Subjective sexual arousal disorder	Complaints of impaired genital sexual

	arousal. Self-report may include minimal vulvar swelling or vaginal lubrication from any type of sexual stimulation and reduced sexual sensations from caressing genitalia. Subjective sexual excitement still occurs from nongenital sexual stimuli.
Orgasmic disorder	Recurrent or persistent difficulty, delay in or absence of attaining orgasm after sufficient sexual stimulation and following normal sexual arousal, which causes personal distress.
SEXUAL PAIN DISORDER	
Dyspareunia	Recurrent or persistent genital pain associated with sexual intercourse. It can be subdivided into deep and superficial pain.
Vaginismus	Recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with vaginal penetration, causing personal distress.
Other sexual pain disorders	Recurrent or persistent genital pain induced by non-coital sexual stimulation. This includes anatomic and inflammatory conditions.

** The Sexual and Gender Identity Disorders Workgroup of the American Psychiatric Association which is currently working on the DSM-V has recommended that sexual aversion disorder not be included in the forthcoming manual, or that it may be classified as a specific phobia. [7]*

Table 2: Sexual Dysfunction Not Addressed by the International Consensus

Vulvodynia [8]	Vulvar discomfort, most often described as burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifiable, neurologic disorder.
Persistent Genital Arousal Disorder [9]	Spontaneous, intrusive, and unwanted genital arousal (tingling, throbbing, pulsating) which lasts for hours to days, in the absence of any sexual interest or

	desire. This arousal is usually unrelieved by one or more orgasms and usually presents with distress.

Prevalence

Although recognized as a widespread and pertinent health condition in women, the actual prevalence of FSD is debatable. This largely stems from the case definition that is used in epidemiological studies which have mostly been conducted in the United States and Europe. Such epidemiological studies have looked exclusively at the presence of sexual dysfunction symptoms and have not typically taken into account the patient's determination of whether the sexual dysfunction causes them personal sexual distress. Estimates of the prevalence of sexual dysfunction in females ranges from 40 to 50%. *[10, 11]* In a stratified probability sample of the British population, Mercer and colleagues found that 53.8% of women had experienced at least one sexual problem lasting between one month and two years. *[12]* In their widely cited study looking at a demographically representative sample of the US population, Laumann, Paik, and Rosen estimated the prevalence of sexual dysfunction of US women to be 43%. *[13]* This data was derived from the National Health and Social Life Survey and is regarded as one of the best methodological approaches to the subject used to date. *[14]*

Laumann et al. also used latent class analysis to estimate the prevalence of four groupings of symptoms. Although not equivalent to clinical diagnosis, these classes were able to provide a statistical representation to the prevalence of four major disorders of sexual dysfunction as outlined by the DSM-IV. The estimated prevalence of women in the unaffected group was 58%; the low sexual desire category was 22%; arousal problems were 14%; and sexual pain had a prevalence of 7%. Middle aged women (45-64 years of age) were affected most, related to decreasing levels of estrogen and testosterone perimenopausally. This results in 30-40% or more of perimenopausal women reporting new onset of low desire, poor lubrication, and orgasmic difficulty. *[13]*

Despite the high prevalence of measured sexual dysfunction, population based studies have shown that dysfunction is not always distressing to women. On average, only 12% of women have both measurable dysfunction as well as distress associated with it. This association is highest among menopausal women between 45-64 years of age. Approximately 15% of women in this age group have problems with sexual function that they find distressing. In addition it has been noted that between 10-15% of women experienced sexual distress without the presence of any classifiable dysfunction. *[15,16]*

Role of the Ob/Gyn and Other Women's Health Care Professionals

Oftentimes, the ob/gyn is a woman's primary healthcare provider, especially when it comes to her sexual health. Although many women may not initiate the conversation, each visit can present a chance to evaluate the health of a woman's sexual function,

in both heterosexual and homosexual women. Taking into account the woman's relationship status and sexual circumstances, the health care provider can briefly explore issues related to desire, arousal, responsiveness, and the ability to have penetration and orgasm. An ob/gyn can determine if a follow-up appointment should be made to further assess potential dysfunction. Not only can ob/gyns be proactive, ensuring that every woman has the appropriate interventions that will lead to an emotionally and physically fulfilling sex life, but they can also be an important source for referring women to appropriate services if needed. Due to the complex role psychological, physical, and sociological factors play in the ability for a woman to fully express her sexuality, problems with sexual function sometime require a multidisciplinary approach that incorporates an array of providers, including psychiatrists, surgeons, social workers, women's health physical therapists, sex therapists, and couples therapists. More information about treatment and referral will be mentioned later in this guide.

SCREENING

Sexual history is a part of every comprehensive well-woman visit as well as visits for specific conditions in which presenting symptoms and signs may diminish or compromise sexual health. Healthcare providers should broach the topic of sexual function at these visits without the expectation that the patient will initiate the discussion. Open-ended questions encourage patients to express concerns.

Surveys consistently show that women want to talk about their sexual issues with healthcare providers but are reluctant to begin the conversation. For instance, one study of 3,807 healthy participants indicated that women do not seek help because they are embarrassed, worry that the provider will be embarrassed, fear that the problem may be minimized or classified as being "all in their head," or that there are no treatments for their condition. *[17]*

Symptom Recognition

The best way to recognize FSD is through proper history taking. Questioning patients about their sexual function can help providers pinpoint the appropriate diagnosis. Once this is completed, management options can be discussed to assess what may work best for both the patient and her partner. Simply asking about sexual function and concerns providing information, confirming that many women have the same concerns, and explaining how one aspect of dysfunction can lead to another, can be therapeutic for a patient with FSD.

Special Note on Cultural Competency

There are many differences when it comes to sexual norms, practices and beliefs. These vary across cultures and religions, and one's own background can strongly influence how an individual views discussing sex, what constitutes a normal range of sexual practices, and how private one's own sex life should be kept. It is important to not only be aware of your patients' beliefs and comfort level, but your own feelings and biases when discussing sensitive topics with a patient. Through self-awareness, a provider can approach topics with minimal bias, which will help make the patient as comfortable as possible and ensure the best treatment. It is important to not make assumptions based on the person's appearance, age, or apparent sexual orientation.

Since sexual function should be assessed as a part of every comprehensive woman's health visit, routinely asking about sexual function conveys to patients that their sexuality and satisfaction are important components of their overall health. In a study of over 1,000 women seen for a primary care visit, 98% reported in a self-administered questionnaire that they had one or more sexual concerns but only 18% of providers asked about sexual health. *[18]* Women who discussed their sexual concerns with their provider found the discussion helpful. In another study of approximately 3,000 women identified with a distressing sexual problem, only 6% of women who sought medical

advice scheduled a visit specifically for a sexual problem and approximately 80% of the time the patient rather than the provider initiated the conversation. *[19]*

Barriers to Discussing Sexual Health

Communication

Sexual health topics may be difficult to discuss due to the provider's fear of embarrassing or offending a patient. However, most women who discuss their sexual concerns with their provider find the discussion helpful. Patients may feel uncomfortable raising concerns about their sexual function and may believe that they are "the only one" with such a problem. Practicing proper communication strategies and skills can help put both the provider and patient at ease. There are strategies contained later in this resource guide to ensure that both providers and patients feel more relaxed and knowledgeable with sexual health conversations.

Lack of Time

Time constraints sometimes make it difficult for providers to initiate conversations on a number of women's health-related topics. In one study, 78% of providers said they did not screen for FSD due to time constraints. *[20]* Fortunately, there is the ability to screen with a few quick, open-ended questions discussed within the "*Communication Strategies*" subsection of this resource guide. If the patient expresses concern about sexual function, an appointment for further evaluation can be scheduled (*see Figure 1*). This future assessment can be appropriately reimbursed (*see "Coding & Reimbursement" section*).

Determining Treatment Strategy

Providers are sometimes unsure of how to treat the patient once a problem is identified. In one national study of urogynecologists, nearly 30% cited being unsure about therapeutic options as their reason for not screening for FSD. *[20]* There are non-pharmacologic and pharmacologic treatment options available that are safe and effective. More information regarding treatment and referral can be found later in this guide (*see "Treatment Strategies" section*).

Screening Tools

Many practices chose to use self-administered screening questionnaires with their patients in order to quickly assess the presence of any sexual dysfunction. The "*Resources*" section of this guide includes a quick assessment tool called the Female Sexual Function Index (FSFI), which is a self-administered, 19-item questionnaire assessing the key components of sexual function that can be quickly filled out by patients. Although studies have shown that this tool is both sensitive and reliable in distinguishing between clinical and non-clinical populations, they do not assess whether or not the patient experienced distress. *[21]* Therefore, these questionnaires may help identify dysfunction in patients, but they should not be used as a substitute for a direct

conversation. Information about where to obtain other screening tools is also available in the "*Resources*" section of this guide.

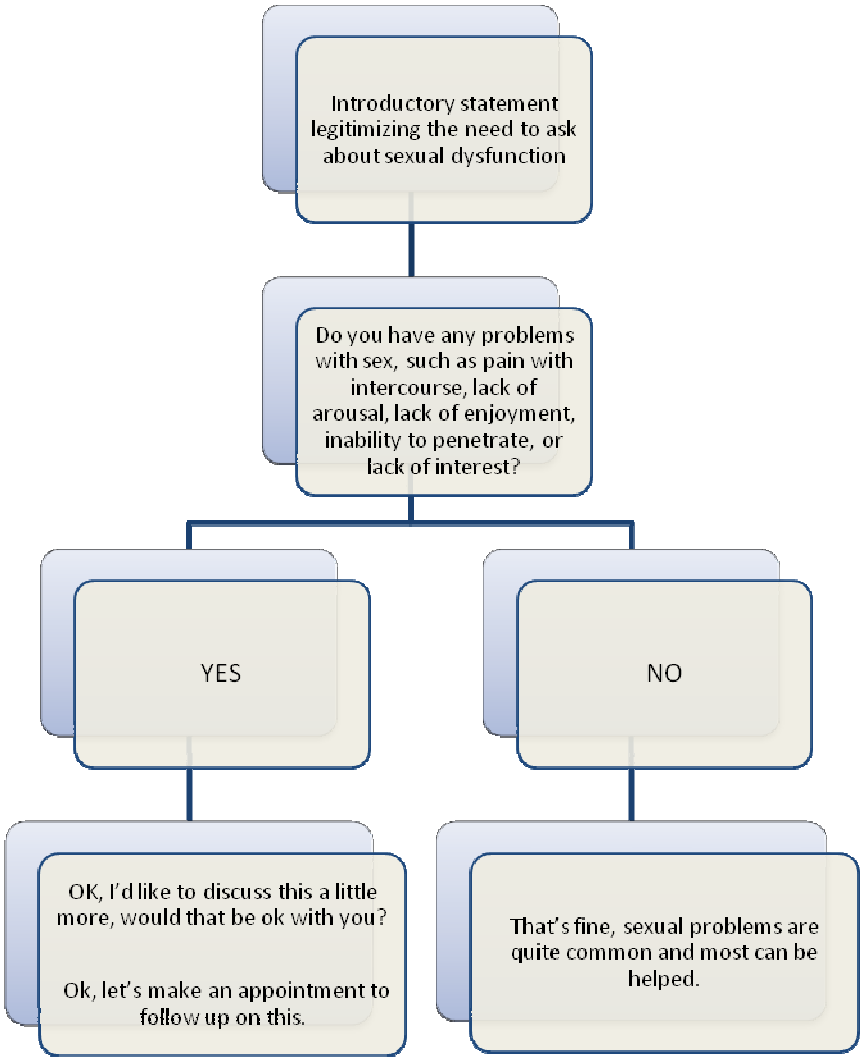


Figure 1: **Algorithm for screening sexual dysfunction** ***[5]***

Communication Strategies

Discussing sexual function can be a difficult task. Effective communication skills can make a world of difference when addressing difficult topics.

Using validation statements to inform the patient that discussing sexual health is (or will become) common practice at your office will normalize it for the patient and prepare them for the upcoming questions. Some validation statements include: *[22]*

Questioning as part of the annual review of systems:

- *"Our office routinely asks all patients about their sexual health as part of the well-woman visit. Do you have any concerns?"*

Introduction based on current stage of reproductive life:

- *"Some studies show that as women get older, they may have less desire for sex or decreased lubrication, which makes intercourse uncomfortable. Have you noticed any changes?"*
- *"Young women who have recently become sexually active often times have questions or concerns regarding their sexual health. Is there anything you'd like to talk about at this time?"*
- *I know that often when we see women on medication x, they may complain of sexuality changes. Do you have any concerns?*
- *Do you have any sexual concerns that you would like me to address today?*

Special considerations when taking history of:	
Lesbians	As clinicians, we may make assumptions about patients in order to clarify a differential diagnosis. One common assumption is that lesbian patients have not had sexual intercourse with men, or do not participate in sexual activity that involves penetration. However, in a national study of nearly 7,000 self-identified lesbian women, over 70% reported having vaginal intercourse with a man in their past; 8.6% had such intercourse within the previous year. [23] Regarding penetration, studies have demonstrated that penetration with fingers or dildos/vibrators is common. *[24]* Providers should be sure to ask about male partners and penetration as part of a complete sexual history.
Older Adults or Handicapped Patients	It is important not to assume older adults or handicapped individuals are not sexually active. In fact, members of both populations can engage in satisfying sexual relationships. It is important to remember that most people, including members of these two groups, are sexual beings and can therefore experience problems with sexual function that concern them.

History

A history-taking process can occur. One model that follows a stepwise approach is based on the PLISSIT (permission, limited information, specific suggestions, and intensive therapy) Model of Intervention for Sexual Problems developed by psychologist Jack Annon and may help streamline the process. *[25]*

1. *PERMISSION.* Ask open-ended questions to give the patient permission to talk about her sexual concerns and reassure her that her feelings are normal and

acceptable. Validate and legitimize the patient's complaint. Open-ended questions are preferred to "yes/no" questions, and may even help to constrain the interview time by focusing the history-taking on key areas of concern. Open-ended questions can also be used when a patient presents with a specific sexual health problem. Combinations of open and closed end questions can clarify the patient's concerns and/or diagnosis.

Below are some commonly used examples in clinical practice:

Open-ended "icebreakers" to start the discussion:

- Tell me about any sexual concern/problem/issue you would like to discuss.
- How does the problem affect your life and relationship(s)?
- How does the concern present?
- What is the most distressing part of this problem?
- Tell me about your last sexual experience.
- How have you tried to manage the problem so far?
- Do you have a medical condition that affects your quality of life, including your sexual health?
- What are your goals for your sexual health?
- Tell me about the conversations you have had with your partner so far about this problem.
- Are you currently involved in a sexual relationship? What are the circumstances of your sexual relationship?
- Providers might question the patient's reproductive stage of life, asking, "*Some studies show that as women age, they may have less desire for sex or have decreased lubrication, which makes intercourse uncomfortable. Have you noticed any changes?*"
- *Do you experience pain during sex?* **(If yes)** *Tell me more*.

The provider's body language while discussing sexual topics can communicate openness and comfort with the topic. Body language can often encourage the patient to talk about her sexual concerns. The appropriate use of silence while allowing the patient the time and opportunity to speak is also important.

2. *LIMITED INFORMATION*. Focus on the topics you will be able to address in the limited time you have available and perhaps encourage the patient to make a follow-up appointment to focus solely on her sexual health concerns. It is important to educate the patient about anatomy, physiology, sexual response, and sexual changes that may occur with age or conditions such as depression, and whether or not she is using certain medications (such as antidepressants). Dispel misconceptions about sexual concerns or practices and offer resource on the subject if available. See the "*Resources*" section for more information.

3. *SPECIFIC SUGGESTIONS*. Offer specific suggestions and solutions to treat the complaint. First, manage co-morbid conditions that alter sexual function and consider assessment of medications that may impact sexual function.

Next, provide specific suggestions related to the patient's sexual health goals. For instance, if the patient is interested in having a more active sex life, you might encourage her to learn more about her sexual response and sexual wellness (e.g., that women in long-term relationships often may not feel spontaneous desire but may experience desire if their partner stimulates them or that women often require direct clitoral stimulation to have an orgasm - vaginal penetration alone may not be sufficient).

4. INTENSIVE THERAPY. Beyond providing basic information and suggestions, providers may want to refer a patient, for intensive therapy, to qualified specialists including sex therapists, couples counselors, cognitive-behavioral therapists, physical therapists, medical or surgical subspecialists (gynecologist, psychiatrist, endocrinologist, urologist, urogynecologist) for further expert intervention.

Medical/Pharmaceutical Causes of Female Sexual Dysfunction

Many times, FSD arises secondary to other underlying diseases or medical conditions. Medication side effects can also lead to decreases in sexual functioning. Co-morbid medical conditions and current medications should be considered when evaluating a patient for FSD. A partial list of medical etiologies can be found in Table 2. A list of drugs known to interfere with sexual function is located in Table 3.

***Table 2:* Medical Causes of Female Sexual Dysfunction**
(Elder J, Braver Y. Female Sexual Dysfunction. Cleveland Clinic Center for Continuing Education 2010. Data from Bachman GA, Phillips NA. Sexual dysfunction. In Steege JF, Metzger DA, Levy BS (eds): Chronic Pelvic Pain: An Integrated Approach. Philadelphia, WB Saunders, 1998, pp 77-90.)

Cardiovascular	Gastrointestinal	Neurologic	Rheumatologic	Endocrine	Psychological	Iatrogenic
Hypertension	Cancer	Paralysis	Fibromyalgia	Diabetes	Depression	Radiation Therapy
Coronary Artery Disease	Irritable Bowel Syndrome	Multiple Sclerosis	Arthritis	Thyroid disease	Intra- or interpersonal conflicts	Hormonal Suppression
Myocardial Infarction	Colostomy	Neuropathies	Autoimmune disorders	Adrenal disorders	Life stressors	Pelvic surgery (nerve damage)
Peripheral Vascular Disease		Stroke		Prolactinomas	Anxiety	

***Table 3:* Medications known to have sexual side effects**
(Kingsberg SA. Taking a sexual history. *Obstet Gynecol Clin N Am* 2006; 33: 535-547.)

Psychotropic Medications:
- Antidepressants (e.g. SSRIs, Serotonin-Norepinephrine Reuptake Inhibitors [SNRAs], tricyclic anti-depressants, monoamine oxidase inhibitors [MAOIs])
- Antipsychotics
- Benzodiazepines
- Mood Stabilizers

Antihypertensives:
- Beta-blockers
- Alpha-blockers
- Diuretics

Cardiovascular Agents:
- Lipid-lowering agents
- Digoxin

Histamine H2-receptor blockers

Hormones:
- Estrogens
- Progestins
- Antiandrogens, GnRH agonists
- Narcotics
- Amphetamines
- Anticonvulsants
- Steroids

Understanding of relevant psychosocial issues

- Sexual function does not exist in a vacuum. It is influenced by relationships, fatigue, stress, and other socio-cultural factors in a woman's life. Understanding a woman's relationship status and the context within which the sexual complaint occurs are crucial to understanding the situation and making an accurate diagnosis.
- Sexual abuse (current or past) can play a very influential role in sexual dysfunction and its treatment; providers often neglect to consider or ask about history of sexual abuse in routine health care examinations. Conversely, diagnosis of FSD does not imply history of sexual abuse.

Hypoactive Sexual Desire Disorder

In assessing hypoactive sexual desire disorder, the patient's receptivity to the idea or request for sexual activity is evaluated. When this receptivity is low or absent, the following factors should be considered:

Lack of receptivity (willingness to "begin from neutral"):

- Interpersonal issues
- Insufficient sexual stimuli
- Inappropriate sexual context
- Psychological issues
    - past negative experiences or abuse
    - negative self-image
    - feelings of shame, guilt
- Frustration related to co-existing female sexual arousal disorder (the woman, although perhaps motivated to find and be receptive to sexual stimuli, finds they do not arouse her)
- Expectation of negative outcome
    - Partner sexual dysfunction
    - Poor sexual skills
    - Dyspareunia
    - Emotionally negative outcome

For many women in long-term relationships, it is normal to experience decreased intrinsic sexual wanting over time, but sometimes sexual wanting and thinking may have decreased very suddenly. If this is the case, the following factors should be evaluated:

- Depression
- Medication-associated hypoactive sexual desire disorder
- Premature loss of testosterone production
- Psychodynamic

- Severe emotional stress
- Intense absorption in studies or work

Questions for Assessing Low Desire
1. How long have you had these concerns with respect to your sexual desire? 2. Do you sometimes have sexual thoughts, daydreams, and fantasies? 3. Currently, would you have sexual feelings of arousal from something that was erotic to you? (e.g., a picture, book, movie, dancing) 4. Do you ever masturbate/self-stimulate? 5. What would your answers have been to these questions previously? 6. Can you describe the circumstances of when you or your partner is being sexual and you sense a lack of desire? 7. How is your emotional intimacy with your partner? 8. Can you slowly respond to your partner's sexual touch- even if you initially have no sexual need yourself?

Use of the Decreased Sexual Desire Screener DSDS which is a validated easy instrument can also be very helpful in assessing women for hypoactive sexual desire. For more information, see the "Sexual Health Screeners" in the *Resources* section of this guide.

Female Sexual Arousal Disorder

There are several variants of female sexual arousal disorder. It is important to distinguish which type is present in order to treat properly. This requires some detailed discussion of the patient's experiences with being aroused and not being aroused. The following questions can be used to narrow down the type of arousal disorder:

1. Do you get mentally turned on by sexual stimuli and enjoy this, but lack a physical response?
    a. If yes, Genital Arousal Disorder
2. Do you dislike when you get emotionally or physically turned on and try to stop it?
    a. If yes, Dysphoric Arousal Disorder
3. Do you notice that you can get physically turned on, but feel indifferent to this?
    a. If yes, Anhedonic Arousal Disorder
4. Do you notice you have the ability to get physically aroused, but are not excited by mental, genital, and nongenital physical stimuli?
    a. If yes, Missed Arousal Disorder
5. Do you find you are not able to get excited, mentally or physically, in any way?
    a. If yes, Generalized Sexual Arousal Disorder *[5]*

Basson R. Sexuality and Sexual Disorders. *Clinical Updates in Women's Healthcare*. Washington DC: American Congress of Obstetricians and Gynecologists; 2(2): 2003.

Further details on symptoms, etiologies and assessment of arousal disorders are below.

SYMPTOMS OF AROUSAL DISORDERS	
Generalized Sexual Arousal Disorder	• Not sexually excited mentally • Do not experience genital congestive responses to sexual stimuli
Persistent Genital Arousal Disorder	• Remain sexually aroused subjectively from mental and non-genital stimulation • Miss their former vulvar, especially clitoral, response • Do not experience direct sensations of congestion (tingling, throbbing, fullness) or indirect awareness of congestion (via increasingly pleasurable sexual sensations) when their genital structures are massaged.
Missed Arousal	• Women with missed arousal deny subjective arousal • Not excited by mental, genital, and non-genital physical stimuli • Genital congestive responses to sexual stimuli is normal
Dysphoric Arousal	• Acknowledge some subjective or genital sensations in response to sexual stimuli but intensely dislike them (and generally disassociate or cease the stimulation)
Anhedonic Arousal	• Healthy genital congestive responses to sexual stimuli • Awareness of subjective arousal or genital response is accompanied by neither pleasure nor particularly negative feelings

ETIOLOGIES OF AROUSAL DISORDERS	
Generalized Sexual Arousal Disorder	• May include women with marked loss of androgen activity who report loss of mental and genital response. The smooth muscle relaxation involved in genital response is thought to be influenced by testosterone activity.
Persistent Genital Arousal Disorder	• Population based studies looking at the etiology of Persistent Genital Arousal Disorder are currently not available, and therefore no conclusions can be made at this time.
Missed Arousal	• Past negative experiences • Distractions

	• Expectation of negative outcome
	• Ingrained learning "not to feel" associated with childhood traumas and losses
	• Suppression of other emotions, especially anger
	  • Selective suppression of emotions is rare
	  • All emotions, including sexual ones, are suppressed
	• The stimulus is problematic
	  ▪ The partner's attractiveness
	  ▪ The type of physical stimulation
	• The context is problematic
	  ▪ Timing
	  ▪ Privacy
	  ▪ Safety (from sexually transmitted infections [STI], pregnancy, or emotional safety)
	• Lack of Testosterone
	  ▪ Although testosterone is involved in genital smooth muscle relaxation, low levels can be associated with some genital response but minimal subjective arousal caused by a lack of testosterone activity in the brain.
	• Depression
	• Medication

Dysphoric Arousal	• Past negative experiences, including abuse • Negative messages from childhood regarding sex (eg, sex is sinful, dangerous, shameful) • Guilt regarding previous sexual experiences
Anhedonic Arousal	• Those etiologic factors linked to dysphoric arousal • Depression

Basson R. Sexuality and Sexual Disorders. *Clinical Updates in Women's Healthcare*. Washington DC: American College of Obstetricians and Gynecologists; 2(2): 2003.

With female sexual arousal disorder, it is important to evaluate which component(s) of arousal are missing or minimal. The following components need to be evaluated:

- Mental sexual arousal from:
  - Reading, viewing, or hearing erotica
  - Stimulating the partner
  - Receiving sexual stimulation to non-genital and genital areas
  - Deliberately having sexual fantasies or recalling sexual memories

- Direct awareness of genital congestion—Tingling, pulsing, throbbing in response to stimuli

- Indirect evidence of genital congestion—Direct massage of vulvar structures with the patient's fingers, partner's fingers, partner's body, oral stimulation, dildo, penile vulval contact- do these contacts cause progressively intense sexual sensations?

- With sexual stimulation, even if there is no or minimal arousal:

    - What are the patient's thoughts? (Is she distracted, feeling sexually substandard, worried the outcome will be negative, aware that the situation is not safe from STIs or pregnancy or will confirm again her infertility? Does she feel she is being used, not being considered?)
    - What are the patient's emotions? (Is there sadness, embarrassment, guilt, awkwardness, displeasure, e.g., from stimulating the partner? Are there feelings of attraction to the partner?)

These questions are necessary to clarify which subtype of arousal disorder is present to guide management.

Female Orgasmic Disorder

When evaluating female orgasmic disorder, the unsatisfactory aspects of the sexual experience should be documented:

- Is the orgasm simply absent?
- Is the orgasm very delayed?
- Is the orgasm intensity reduced?
- Are there also concerns with arousal?
- If there is a co-existent female sexual arousal disorder, evaluate the subtype.
- Assess a women's genitopelvic knowledge as well as assess type of stimulation
- Dispelling some of the sexual myths concerning coital and vaginal versus clitoral orgasms is essential since it is common for many women to require direct clitoral stimulation to reach orgasm.

ETIOLOGIES OF FEMALE ORGASMIC DISORDER	
Acquired (absent orgasms now, but satisfactory arousal continues)	**Lifelong** (absent orgasms always, but healthy arousal)
• Medication-associated female orgasmic disorder • Selective serotonin reuptake inhibitors [SSRIs] • Alcohol • Sedatives • Neurologic disease • multiple sclerosis	• Fear of losing control or being vulnerable • Previous deliberate curtailing of high arousal, e.g., for religious or moral reasons (waiting for marriage) • Distractions with high arousal • Self-monitoring • Fear of urination with orgasm

• nerve damage from pelvic fracture or complicated delivery • Testosterone lack • more typically, testosterone lack is associated with low arousal • Trust and control issues • perhaps new partner or stress to the relationship	

***Note*:** *Most women seeking help for lack of an orgasm with sexual stimulation also have low arousal. New definitions are being formulated to distinguish these entities.*

Basson R. Sexuality and Sexual Disorders. *Clinical Updates in Women's Healthcare*. Washington DC: American Congress of Obstetricians and Gynecologists; 2(2): 2003.

Dyspareunia

When assessing dyspareunia, it is important to ask patients if vaginal entry is possible at all (e.g., with finger, dildo, penis, speculum, tampon, etc); women often are hesitant to admit that intercourse has never been possible. It also is important to establish whether sexual arousal is being experienced as the attempted intercourse begins and progresses.

Young females & sexual dysfunction

Although pain associated with first time intercourse is common, the persistence of pain is something that should be evaluated. It is important to screen for dysfunction in young patients in order to discover problems early on if present, and also to educate the patients about the normal physiology of sex, so that they may more easily recognize dysfunction if it presents in the future.

Physicians should ask exactly when the pain is experienced:

- With partial entry of the penis/dildo/finger
- With attempted full entry of the penis/dildo/finger
- With deep thrusting
- With penile/dildo/finger movement
- If with a male partner, his ejaculation
- With the patient's subsequent urination
- For minutes or hours after intercourse attempts

ETIOLOGIES OF DYSPAREUNIA
▪ Lack of estrogen ▪ Infection ▪ Vulvar vestibulitis ▪ Interstitial cystitis ▪ Recurrent urethritis ▪ Recurrent posterior fourchette tears ▪ Vulvar dystrophies or other vulvar dermatologic disorders ▪ Congenital vulvar or vaginal anomalies ▪ Anatomic changes post-surgery, radiation or trauma, including childbirth ▪ Endometriosis ▪ Fixed retroversion of the uterus ▪ Genital female sexual arousal disorder ▪ Generalized female sexual arousal disorder ▪ Unduly prolonged intercourse

Basson R. Sexuality and Sexual Disorders. *Clinical Updates in Women's Healthcare*. Washington DC: American College of Obstetricians and Gynecologists; 2(2): 2003.

Vaginismus

Vaginismus is a syndrome of apparent over contraction of the muscles surrounding the lower third of the vagina when vaginal entry is attempted. Whether vaginal entry is full or partial, the entry attempt is painful and often associated with fear.

QUESTIONS FOR ASSESSING VAGINISMUS	ETIOLOGIES OF VAGINISMUS
What attempts at vaginal entry have been made and how complete have these been? What are the patient's emotions during these experiences? If fear is present, can she clarify exactly what she is fearful of? Does she have a similar fear of future vaginal entry? Have previously attempted internal examinations been successful?	The etiology of "idiopathic" reflex muscle constriction is uncertain. When it is acquired, the etiology may appear to stem from: o Psychologic or physical distress o A "protective response" to repeated painful gynecologic procedures o A protective response to painful penetration from any cause Studies do not support the concept that sexual abuse is more common in women with histories of vaginismus than women without such histories. [26]

Women with suspected vaginismus must be examined to rule out findings of vulvar vestibulitis, posterior fourchette tears, or any other physical cause of introital or deep dyspareunia.

Dealing with vaginismus can be immensely stressful. The physician should determine whether the woman wishes to address the problem when diagnosed or at a later time, taking into consideration whether there are other stressors currently in her life.

The physician also can determine if there are any symptoms suggesting that vaginismus is secondary to other pathology (e.g., vulvar vestibulitis syndrome). These symptoms include:

- Vulvodynia, sometimes limited to proximity to menses
- Vulvar burning with partner ejaculation
- Dysuria after attempting vaginal entry
- Vulvar discomfort for minutes or hours after attempting intercourse

There are other issues that may be present, including anatomic issues or erectile dysfunction in the partner or lack of sexual skills or information.

Vulvodynia

Vulvodynia is defined as vulvar discomfort, most often described as burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifiable, neurologic disorder. It is classified into generalized (involvement of the whole vulva) and localized (involvement of a portion of the vulva). Each of these classifications can be

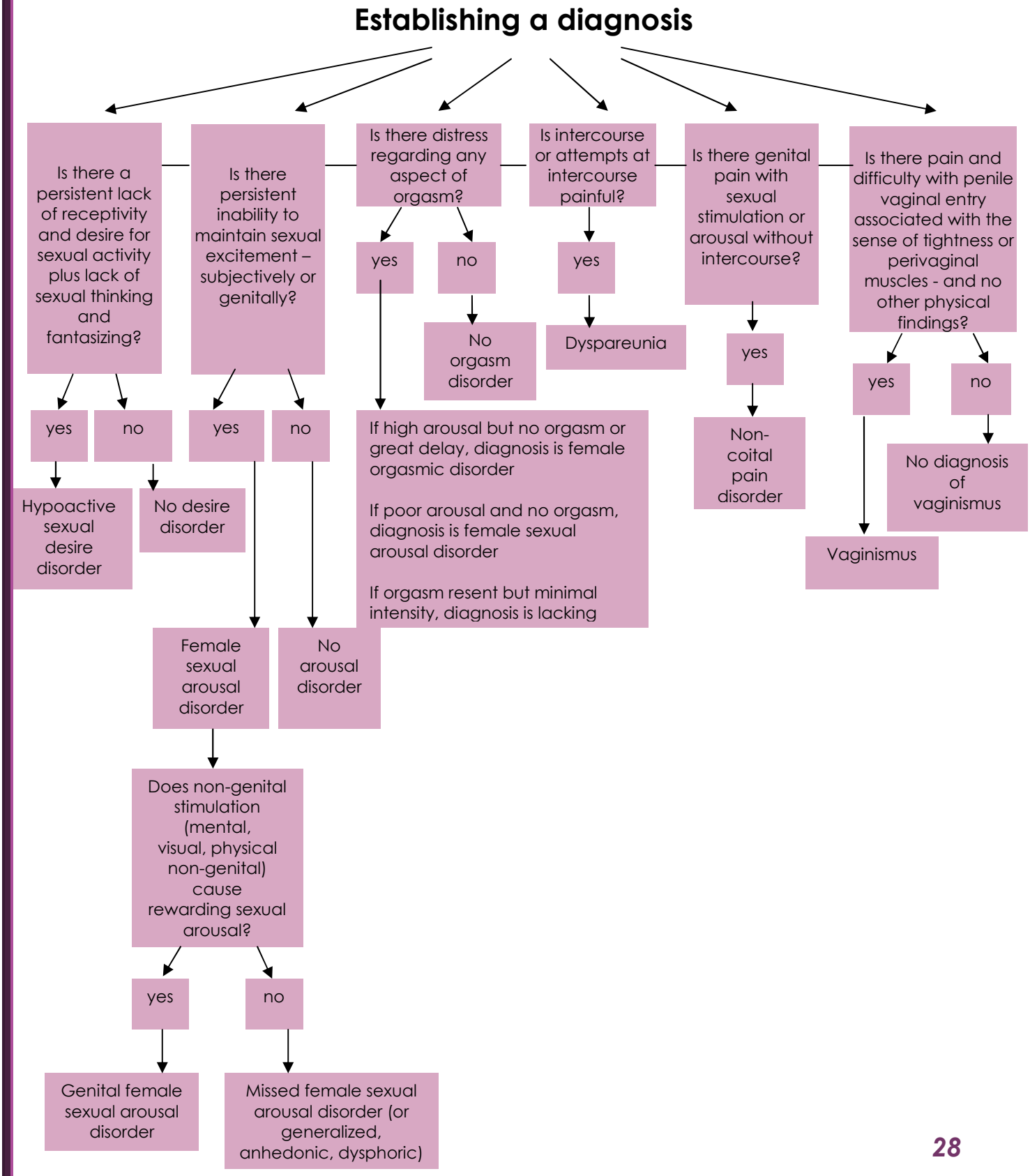
further classified into provoked (discomfort is triggered by physical contact, which may be sexual, nonsexual, or both.), unprovoked (discomfort occurs spontaneously without a specific physical trigger), or mixed. Examples of provoked vulvodynia include intromission, clothing pressure, tampon insertion, cotton tip applicator pressure, and fingertip pressure. *[8]*

Persistent Genital Arousal Syndrome

Persistent Genital Arousal Syndrome (PGAS, previously known as Persistent Sexual Arousal Syndrome) is a disorder in which women experience "the physiological responses characteristic of sexual arousal, including genital and breast vasocongestion and sensitivity, that persists for an extended period of time (hours to days) and do not subside completely on their own." These physiological arousal symptoms are unrelated to any subjective feeling of sexual excitement or desire and do not subside with typical orgasmic experience.

The etiology of PGAS is still widely unknown. It is important not to confuse PGAS with hypersexuality. Hypersexuality is the excessive desire with or without persistent genital arousal, while PGAS is physiological arousal in the absence of conscious desire. *[9]* It should be noted that women with PGAS will not qualify as having a sexual dysfunction with the FSFI screening tool (see "*Resources*" section). Despite this, studies of women with PGAS demonstrate that these women do not have relationships or sexual lives that are as satisfying when compared to normal controls. *[27]*

FIGURE 2: Algorithm for establishing a diagnosis of female sexual dysfunction *[5]*



TREATMENT STRATEGIES

Physicians treating males for sexual dysfunction have limited, but highly efficacious options for treating their patient's dysfunction. The treatment of female sexual dysfunction does not have a clear cut pharmacological remedy, and therefore requires a stepwise approach in its management. Jan Shifren has published a method for systematically treating FSD. [28] The five simple steps include:

STEP 1: Educating Patients on Sexual Health

Normalizing a patient's fears or concerns about sexual dysfunction and educating her about sexual health can help improve the patient's receptiveness to treatment and increase her overall knowledge of sexual health.

STEP 2: Assess the Patient's Goals

Sexual health issues are often multi-factorial, involving physical, psychological, and interpersonal factors. After the etiology (or etiologies) of the patient's sexual dysfunction is defined, it is important to assess what the patient is looking to accomplish with treatment. This has multiple benefits including:

- ✓ Setting realistic goals
- ✓ Clarifying any misconceptions about treatment
- ✓ Allowing for progress to be more accurately measured

STEP 3: Treat Associated Conditions

Some patients experiencing sexual dysfunction have other underlying medical issues such as depression, substance abuse, or drug side effects. Often treating these underlying conditions or adjusting medication and dosing may lead to improvements in sexual function.

STEP 4: Use a Team Approach

Despite the complexity of FSD, many times ob/gyns can offer treatment necessary to improve sexual function. Since FSD is often multi-factorial, other experts may sometimes be needed to address underlying issues such as psychological and interpersonal ones. It is important to communicate with the patient, as well as her other providers when necessary, in order to find a treatment strategy that works best for the individual. This may require referring the patient to a psychiatrist, counselor, or sex therapist. It might also be necessary to involve the patient's partner in the treatment, especially if relationship therapy is needed or the partner's sexual dysfunction is contributing to that of the patient. For more information, see the "*Referral*" section.

STEP 5: Make a Treatment Plan

Treatment plans should be tailored to the goals of the patient. The ultimate focus of the therapy should be on interventions that increase the patient's physical, psychological, and interpersonal well-being, since these are the principal predictors of sexual satisfaction. Pharmacologic and non-pharmacologic interventions are available. Individually tailored treatment plans should be created using either one or both of these.

Non-Pharmacological Therapies

- **Counseling (licensed clinicians with expertise in human sexuality)**
  - ✓ May help underlying psychological or relationship issues
- **Sex Therapy**
  - ✓ Highly trained counselors with expertise in human sexuality
  - ✓ Very helpful in educating patients about normal sexual response
  - ✓ May help couples negotiate sexual expectations
  - ✓ Effective and high degree of safety
- **Couples Therapy**
  - ✓ May aid couples in increasing communication and decrease couple conflict that underlies sexual dysfunction
- **Pelvic (Female Health) Physical Therapists**
  - ✓ Physical therapists with subspecialty training in pelvic anatomy and function
  - ✓ Especially helpful for patients with dyspareunia, vaginismus, and pelvic pain
- **Psychiatric Services**
  - ✓ Helpful for patients suffering from depression or anxiety, or victims of emotional, physical, or sexual abuse
  - ✓ Psychopharmacologists may be able to modify medications that lead to, or exacerbate, sexual dysfunction like SSRIs
- **Lifestyle Changes**
- **Counseling patients to reduce stress via exercise, yoga, or meditation can help reduce stress and fatigue that contribute to low libido**

- ✓ Time management is also helpful; make sex a priority within the relationship.
- ✓ Establishing a healthy diet with regular exercise, including pelvic exercises like Kegels, pelvic lifts improve overall health, including sexual health. Additionally, exercise can enhance positive body image.
- ✓ Quitting smoking and avoiding excessive alcohol consumption
- ✓ Establishing a "date night" or spending a night or weekend away from family responsibilities can positively affect sexual function
- ✓ Adding novelty to the current relationships can increase libido and sexual response. This can be accomplished by:

    - Bibliotherapy: reading books about sexuality
    - Incorporating sexual accessories into sexual play to provide variety and eliminate sexual boredom, such as visiting adult toy stores.
    - Expanding the typical sexual repertoire *[29]*

Lubricants

- ✓ Sexual activity does not always result in adequate lubrication, especially with prolonged intercourse and this may affect penetration. Synthetic lubricants are recommended as needed for any condition that result in dryness.

Devices

- ✓ Clitoral suction vacuum device
    - FDA-approved
    - Increase clitoral blood flow, which aids arousal and response [30]
    - Expensive
    - No data to support utility over handheld vibrators
    - Some small data in cancer patients and other special populations to increase clitoral engorgement

- ✓ Vibrators/Self Stimulators
    - Inexpensive
    - No prescription necessary
    - Good alternative to vacuum device

- ✓ Dilators

    - Useful in overcoming pelvic floor muscular responses that lead to vaginismus *[31]*
    - Useful for treatment of vaginal stenosis, especially combined with topical estrogen therapy in menopausal women
    - Compliance is shown to be helped with frequent visits and follow-up with a healthcare provider

- Surgical options

  - ✓ A vestibulectomy, removal of the painful tissue of the vestibule, has been helpful for some women with localized vulvodynia. For these women, vestibulectomy can help relieve pain and improve sexual comfort. It is not recommended for women with generalized vulvodynia.
  - ✓ Bariatric surgery has been shown to reduce the prevalence of FSD in obese women based on FSFI scores. In one study, 63% of participants were shown to have FSD based on FSFI scores. Of these women, FSD resolved in 68% within six months of surgery. The benefits were not associated with any particular method of surgery or amount of weight lost. *[32]*

Hormone Therapy

Androgens (not FDA-approved)

Endogenous levels of circulating androgens have not been clearly linked to sexual function in postmenopausal women. However, randomized clinical trials have shown that exogenous androgen therapy, both oral and non-oral formulas, do have positive effects on sexual function especially desire, arousal, and orgasmic response in postmenopausal women. *[14]* It has also been shown that exogenous testosterone has similar effects on the sexual function of premenopausal women. *[33]* Unfortunately, in many studies androgen levels are raised to supraphysiological levels. *[34]*

The North American Menopause Society (NAMS) recommends that postmenopausal women with decreased sexual desire and associated personal distress, who do not have any other identifiable cause of sexual dysfunction are candidates for testosterone therapy with concomitant estrogen therapy. Since there is little evidence for testosterone therapy alone, this cannot be recommended. NAMS also prefers transdermal patches (not available in the US for the treatment of hypoactive sexual desire disorder) or topical gels or creams to oral testosterone, due to the hepatic first pass effect with oral formulations. In all cases, the lowest dose should be given for the shortest time possible to reach desired therapeutic effects. *[30]*

Testosterone therapy should not be used in women with breast or uterine cancer, endometrial hyperplasia, and/or those with cardiovascular or liver disease. *[29, 30]* In women of reproductive age, it is less likely that low androgen levels are the cause of their sexual dysfunction and caution is due if pregnancy could occur, as this may lead to inadvertent exposure to a developing fetus. *[28]*

Just as with any drug, androgen therapy has a known side effect profile, which can resolve if the hormones are discontinued or the dosage is reduced. These side effects should be discussed with patients prior to initiating therapy. Side effects of androgen therapy include:

- Hirsutism and acne, which are usually mild

- Irreversible virilizing changes like voice deepening and clitoromegaly are rare
- Possible decreased serum HDL levels in postmenopausal women taking oral testosterone. This effect is not present in non-oral formulations.
- Most androgens aromatize to estrogens, which may put women at the same risks as estrogen therapy
- Long-term safety of androgen therapy is unknown since most studies lasted only 3-12 months
- Long term risk of breast cancer and cardiovascular implications remain to be elucidated
- Patients should be followed closely if they are consented and aware of risks.

The preparation that is most likely to achieve therapeutic levels is: *[28]*

- Topical 1% testosterone cream (0.5 grams daily) applied to the skin of the inner arms, wrist, inner thigh, or mons.
- Recently, other testosterone delivery systems have started to be used, and more evidence will emerge as these modalities become more common. One of these delivery methods is the use of 37.5-100mg testosterone pellets placed subcutaneously every 3-6 months for the treatment of desire disorders.

Despite concerns that have been raised regarding long-term testosterone use, many patients have found it to be helpful and choose to continue ongoing treatment. Ultimately, it should be the clinical discretion of the treating physician and the needs of the patient as to what the individualized therapy should entail.

Estrogen Therapy

The Women's Health Initiative, a set of clinical trials in over 27,000 postmenopausal women, found that systemic estrogen with or without progestin therapy did not improve sexual satisfaction and may have other health risks. However, hormone therapy can be used to counteract the symptoms of menopause if those symptoms are interfering with a patient's otherwise healthy sex life. Postmenopausal systemic estrogen or estrogen/progestin therapy in women who still have a uterus is a reasonable option for women with vasomotor symptoms resulting in sexual dysfunction. Menopausal women with dyspareunia from atrophic vaginal changes usually benefit from low dose vaginal/topical estrogen. *[28]*

Other Pharmacologic Therapy

Phosphodiesterase (PDE-5) Inhibitors

PDE-5 inhibitors, although successful in men, have generally not shown to be effective at treating sexual dysfunction in women. However, sildenifil has been shown to have positive effects on sexual arousal and orgasm in premenopausal women experiencing SSRI associated sexual dysfunction. *[28]*

Psychotropic Agents [28]

- Bupropion: One randomized trial of 75 premenopausal women with hypoactive sexual desire disorder and without underlying depression reported increased sexual pleasure, arousal and orgasm with buproprion (sustained release 300 mg/d) compared with placebo

- Buspirone: Trials of buspirone for treatment of SSRI-associated sexual dysfunction have yielded conflicting results.

OnabotulinumtoxinA (botulin toxin)

For treatment of vaginismus and vulvodynia, an injection of botulin toxin into the bulbospongiosus muscles has been shown to be inexpensive and effective and can be performed in an outpatient setting. *[31]*

CARE COORDINATION & REFERRAL

A detailed, sensitive and respectful assessment will help establish a dialogue with your patient, and assists with the transition from assessment to management and/or referral. Oftentimes, the information provided by an ob-gyn during an assessment can have therapeutic value. The decision to refer a patient depends on a numbers of factors, including:

- Expertise of the ob-gyn
- Complexity of the sexual dysfunction
- Presence or absence of partner sexual dysfunction
- Availability of a psychologist, psychiatrist, pelvic (female health) physical therapist or sex therapist
- Motivation of the patient (and partner) to undergo more detailed assessment before therapeutic interventions
- Insurance coverage/cost issues

Patients who are victims of intimate partner and domestic violence can be referred to the National Domestic Violence Hotline at 1-800-799-SAFE (7233) or www.ndvh.org and local shelters, authorities, and domestic violence specialists, and recommend patient support groups for sexual abuse survivors (e.g., Sex and Love Addicts Anonymous).

**Adapted from: Talking With Patients About Sexuality and Sexual Health, Association of Reproductive Health Professionals, Retrieved on June 20, 2010 at:*

www.arhp.org/Publications-and-Resources/Clinical-Fact-Sheets/SHF-Talking

If you decide to refer a patient, use appropriate language such as: "Your problem is very important and deserves some specialized treatment, and I know just the person who may help us with this." This language validates the patient's concern and reassures her that she is not being passed off to another healthcare provider, but will be coming back to you for follow-up. More detailed assessments and management may be available from:

- Sexual medicine physicians
  - ✓ extra training and expertise in sexual health issues
  - ✓ psychiatrists, family practitioners, gynecologists or urologists
- Psychologists
- Sex therapists and abuse counselors
- Physiotherapists (regarding hypertonic pelvic muscle-associated dyspareunia and vaginismus)
- Relationship counselors
- Support groups (e.g., for women with past histories of breast cancer, women with vulvar vestibulitis syndrome-associated chronic dyspareunia, and women with interstitial cystitis-associated dyspareunia, etc.)

CODING & REIMBURSEMENT

Below are the diagnosis codes that are indexed in ICD-9-CM for the following disorders along with their code notes. Code notes are bolded. Some of the disorders have more than one potential diagnosis code. The most appropriate diagnosis code will be selected based on the specific patient circumstance.

Hypoactive Sexual Desire Disorder - 302.71
(Hypoactive sexual desire disorder; excludes decreased sexual desire NOS (799.81))

Sexual Aversion Disorder - 302.79
(Hypoactive sexual desire disorder; with other specified psychosexual dysfunctions - sexual aversion disorder)

Genital and Sexual Arousal Disorder - 302.72
(Hypoactive sexual desire disorder; with inhibited sexual excitement - female sexual arousal disorder, frigidity, impotence, male erectile disorder)

Orgasmic Disorder - 302.73
(Female orgasmic disorder)

Dyspareunia - 625.0
(Dyspareunia; excludes: psychogenic dyspareunia (302.76), DEFINITION: Dyspareunia is pain during sexual intercourse.)

302.76 (Dyspareunia, psychogenic) - DEFINITION: Psychogenic dyspareunia occurs when a female feels pain during sexual activity without an identifiable physical etiology.

Vaginismus - 625.1
(Vaginismus) Colpospasm, Vulvismus; excludes: psychogenic vaginismus (306.51), DEFINITION**:** Vaginismus occurs when spasms (involuntary contractions) of the vaginal muscles prevent sexual intercourse.)

306.51 (Psychogenic vaginismus) Functional vaginismus, DEFINITION: Psychogenic vaginismus occurs when psychological factors cause a female to suffer painful contractions of the muscles in the vagina.)

There is no specific code for **non-coital sexual pain**.
ICD-9-CM code 625.8, (Other specified symptoms associated with female genital organs) or 307.89 (Pain disorders related to psychological factors; "Other" may potentially be reported for this disorder based upon specific patient circumstances.

The code notes for code 307.89 are as follows:
Code first to type or site of pain; excludes: pain disorder exclusively attributed to psychological factors (307.80), psychogenic pain (307.80)

Note: If code 307.89 is reported, you may report code 625.9 (female genital organs) as the site. The dyspareunia code (625.0) is generally the most appropriate code for pain experienced during sexual activity.

Use CPT codes based on visit length, with chart documentation for support.

*= contains resources for local referrals

American Academy of Clinical Sexologists, Inc.
www.esextherapy.com/index.htm

AACS is a private, independent graduate school which offers a Ph.D. in Clinical Sexology program designed for licensed medical and mental health professionals who wish to practice sex therapy, on a clinical basis, or as an addendum to their licensed clinical specialty.

American Association for Marriage and Family Therapy*
www.aamft.org

AAMFT represents marriage and family therapists. The site includes information for consumers on sexual problems and other family issues, a database of books and articles, and a therapist locator.

American Association of Sexuality Educators, Counselors, and Therapists*
www.aasect.org

AASECT is a professional association for sex educators, counselors, and sex therapists. The site allows users to locate members by state and includes links and other resources on sexuality for consumers and health professionals.

American Association on Health and Disability
www.aahd.us

AAHD works to contribute to national, state, and local efforts to prevent additional health complications in people with disabilities, and to identify effective intervention strategies to reduce the incidence of secondary conditions and the health disparities between people with disabilities and the general population.

American Cancer Society
www.acs.org

The American Cancer Society is the nationwide, community-based, voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer, through research, education, advocacy, and service.

American Congress of Obstetricians and Gynecologists*
www.acog.org

ACOG represents over 52,000 members and is the nation's leading group of professionals providing health care for women. Patient education pamphlets (including

pamphlets on sexuality issues) are available in full-text format on the patient page. Spanish-language pamphlets and a "find an ob-gyn" function are also available.

American Physical Therapy Association- Section on Women's Health*
www.womenshealthapta.org

The Section on Women's Health promotes and expands physical therapy's role in the field of women's health and wellness across the life span. Among other services, the Section develops educational resources, and practice and education standards for addressing women's health issues.

American Social Health Association
www.ashastd.org

The ASHA site has information on many types of STIs, referrals to support groups, and information on the STI Resource Center Hotline (1-800-227-8922).

American Society for Reproductive Medicine
www.asrm.org

ASRM is a multidisciplinary organization dedicated to the advancement of the art, science, and practice of reproductive medicines. ASRM is committed to facilitating and sponsoring educational activities for the public and CME activities for healthcare professionals.

American Urological Association*
www.auanet.org

The AUA's site has professional information on urologic diseases, and links to the UrologyHealth.org website (click "AUA Foundation" at the bottom of the page) for patient information on sexual function, infertility, and other urologic conditions.

Association of Reproductive Health Professionals
www.arhp.org

ARHP define reproductive health in broad terms and recognize that the best health care is delivered through a team of professionals partnering with an informed patient. ARHP brings together health care professionals across disciplines and specialties for evidence-based training and network building among committed colleagues. ARHP produces accredited, evidence-based programs for health care professionals across a broad range of topics.

Center for Cross-Cultural Health
www.crosshealth.com

Through a combination of cultural competency trainings, interpreter trainings, research projects, community coalition building, and other services, the CCHCH works with

communities and health care institutions to ensure full access to quality health care that is culturally and linguistically appropriate.

Cleveland Clinic- Center for Continuing Education
www.clevelandclinicmeded.com

This website offers both provider and patient education regarding FSD.

Female Sexual Dysfunction Online
www.femalesexualdysfunctiononline.org

This website has information for physicians and patients including a slide library, pamphlets and books, information on meetings and CME for physicians, and links to other websites dealing with sexual health.

Go Ask Alice!
www.goaskalice.org

Go Ask Alice! is a health Q&A web-based resource for the public on a range of health and well-being topics.

Guttmacher Institute
www.guttmacher.org

The Guttmacher Institute focuses on sexual and reproductive health research, policy analysis and public education. This site contains information on abortion, pregnancy and birth, contraception, sexual behavior, STIs and HIV, and resources on youth and sex.

International Society for Sexual Medicine (ISSM)
www.issm.info

Originally founded in 1982 for the purpose of promoting clinical and basic research in the area of male erectile function and dysfunction, the ISSM now studies the entire field of human sexuality.

International Society for the Study of Women's Sexual Health*
www.isswsh.org

ISSWSH is a multidisciplinary, academic, and scientific organization whose purposes are to provide opportunities for communication among scholars, researchers, and practitioners about women's sexual function and sexual experience; support the highest standards of ethics and professionalism in research, education, and clinical practice of women's sexuality; and provide the public with accurate information about women's sexuality and sexual health.

Kinsey Institute
www.kinseyinstitute.org

The Kinsey Institute promotes research and scholarship in the fields of human sexuality, gender, and reproduction. The web site includes information on research, conferences, the library and special collections, publications, and graduate education.

Mautner project: Lesbian health care
www.mautnerproject.org

The Mautner Project is committed to improving the health of women who partner with women, including lesbian, bisexual, and transgender individuals, through direct and support service, education, and advocacy.

Medical Center for Female Sexuality*
www.centerforfemalesexuality.com

The Medical Center for Female Sexuality is committed to helping women solve their sexual health challenges with compassionate and experienced staff trained specifically in female sexual health. This site offers in-depth patient information on a variety of sexual issues. It also provides referral and resource information for providers.

MedlinePlus – Sexual Health Issues
www.nlm.nih.gov/medlineplus/sexualhealthissues.html

From the National Library of Medicine, this consumer site includes information on topics related to sexual health, and also includes links to other MedlinePlus pages on female sexual dysfunction, STIs, and more.

National Domestic Violence Hotline
1-800-799-SAFE (7233) or www.ndvh.org

The Hotline serves as the only domestic violence hotline in the nation with access to more than 5,000 shelters and domestic violence programs across the United States, Puerto Rico and the U.S. Virgin Islands. Advocates receive approximately 21,000 calls each month. The Hotline is toll-free, confidential and anonymous. It operates 24 hours a day, 365 days a year, in more than 170 different languages through interpreter services, with a TTY line available for the Deaf, Deaf-Blind and Hard of Hearing.

National Vulvodynia Association
www.nva.org

The NVA is a nonprofit organization for individuals with chronic vulvar pain disorders. The website has an online resource center and information for professionals and patients. Members can request a patient guide, physician referrals, and other information.

Nemours Foundation – Sexual Health for Teens
www.kidshealth.org/teen/sexual_health

Nemours is one of the largest nonprofit organizations devoted to children's health. This site includes information and answers to questions for teenagers, both male and female, on a variety of sexual health issues such as puberty, menstruation, sex, STDs, and birth control.

Planned Parenthood Federation of America*
www.plannedparenthood.org

This website has information for teens on sex, reproductive health, birth control, abortion, sexual orientation, STIs, and a health center locator.

Rape, Abuse & Incest National Network (RAINN)
www.rainn.org

RAINN operates a 24-hour telephone hotline (1-800-656-HOPE) and an online hotline for victims of sexual assault. The secure web-based hotline provides a safe, secure, and anonymous place for victims to get help online. RAINN also works to promote education and prevention of sexual assault, compiles and shares links to legal resources, including the state mandatory regulations regarding children and the elderly.

Sex, Etc.
www.sexetc.org

Sex, Etc. is developed by the Network for Family Life Education at Rutgers, the State University of New Jersey. The site contains information written by teens on many aspects of sexuality and sex education.

Sexuality Information and Education Council of the United States
www.siecus.org

SIECUS promotes sexuality education, sexual health, and sexual rights. The site contains information and publications on sex education and sexual health, and information for parents.

Sexualityandu.ca
www.sexualityandu.ca/home_e.aspx

Administered by the Society of Obstetricians and Gynaecologists of Canada, this site has information for teens, parents/teachers, adults, and health professionals on sex, contraception, and STIs.

Society for Sex Therapy and Research*
www.sstarnet.org

SSTAR is a community of health professionals interested in human sexual concerns. The website contains information on meetings, a member newsletter, and a sex therapist directory.

Society for the Scientific Study of Sexuality
www.sexscience.org

This is an international organization dedicated to the advancement of knowledge about sexuality. The site includes information on publications, meetings, "What Sexual Scientists Know About" patient brochures, and links to other resources.

The National Center for Cultural Competence
nccc.georgetown.edu/index.html

The mission of the National Center for Cultural Competence is to increase the capacity of health and mental health programs to design, implement, and evaluate culturally and linguistically competent service delivery systems. Its resources include conference calls and various full-text publications, including *A Guide to Planning and Implementing Cultural Competence Organizational Self- Assessment.*

Women's Therapy Center
www.womentc.com

A specialty practice since 1995, offering multi-disciplinary intervention for vaginismus, dyspareunia, vulvodynia, vulvar vestibulitis, and female sexual dysfunction. Their website offers more in-depth information about these conditions. A unique vaginismus treatment program is available for patients who live far away. The Center's founders are the authors of *Private Pain – Understanding Vaginismus and Dyspareunia.*

Suggested Reading for Patients

100 Questions You'd Never Ask Your Parents (Volume 1) (Paperback)
~ Elisabeth Henderson (Author), Nancy Armstrong (Author) ISBN-10: 0615165184

Asperger's Syndrome And Sexuality: From Adolescence Through Adulthood (Paperback)
~ Isabelle Henault (Author) ISBN-10: 1843101890

For Women Only: A Revolutionary Guide to Reclaiming Your Sex Life
~Jennifer Berman (Author), Laura Berman (Author), Elisabeth Bumiller (Author) ISBN- 10: 0805069267

For Yourself: The Fulfillment of Female Sexuality (Paperback)
~ Lonnie Barbach (Author) ISBN-10: 0451202007

Headache in the Pelvis 5th Edition (Paperback)
~ David Wise (Author ISBN-10: 0972775544

Healing Sex: A Mind-Body Approach to Healing Sexual Trauma (Paperback)

~ Staci Haines (Author) ISBN-10: 1573442933

Our Bodies, Ourselves: A New Edition for a New Era (Paperback)
~ Boston Women's Health Book Collective (Author), Judy Norsigian (Author) ISBN-10: 0743256115

Passionate Marriage: Keeping Love and Intimacy Alive in Committed Relationships (Paperback)
~ David Schnarch (Author) ISBN-10: 0393334279

Private Pain: It's About Life, Not Just Sex ... Understanding Vaginismus & Dyspareunia (Paperback)
~ Ditza Katz (Author), Ross Lynn Tabisel (Author) ISBN-10: 0970029810

Real Sex for Real Women (Hardcover)
~Laura Berman (Author) ISBN-10: 0756639808

Sex in the Golden Years - A Guide to the Best Senior Sex Possible (Perfect Paperback)
~ Othniel J. Seiden (Author), MD & Jane L. Bilett Ph.D. (Author) ISBN-10: 0980194105

Sex, Sexuality and The Autism Spectrum (Paperback)
~ Wendy Lawson (Author), Glenys Jones ISBN-10: 1843102846

Sexually Shy: The Inhibited Woman's Guide to Good Sex (Paperback)
~ Bukod Books (Creator) ISBN-10: 0984057463

The Book of Love (Hardcover)
~ Laura Berman (Author) ISBN-10: 0756653207

The Courage to Heal 4e: A Guide for Women Survivors of Child Sexual Abuse 20th Anniversary Edition (Paperback)
~ Ellen Bass (Author), Laura Davis (Author) ISBN-10: 0061284335

The New Lesbian Sex Book, 3rd Edition (Paperback) ISBN-10: 1593500211

The Ultimate Guide to Sex and Disability: For All of Us Who Live with Disabilities, Chronic Pain, and Illness (Paperback)
~ Miriam Kaufman (Author), Cory Silverberg (Author), Fran Odette (Author) ISBN-10: 1573443042

Unwrapped: Real Questions Asked by Real Girls (About Sex) (Perfect Paperback)
~ Gina Guddat and the F.I.T. Decisions Team of Experts (Author) ISBN-10: 1577363884

Vaginas: An Owner's Manual (Paperback)
~ Dr. Carol Livoti Dr. (Author), Elizabeth Topp (Author) ISBN-10: 1568582951

What Your Mother Never Told You About Sex (Paperback)
~ Hilda Hutcherson (Author) ISBN-10: 0399528539

100 Questions and Answers about Female Sexual Wellness and Vitality: A Practical Guide for the Woman Seeking Sexual Fulfillment. (Paperback)
~ Michael Krychman (Author) ISBN-10: 076375448X

100 Questions and Answers about Breast Cancer Sensuality, Sexuality, and Intimacy (Paperback)
~ Michael Krychman (Author), Susan Kellogg (Author), Sandra Finestone (Author) ISBN-10: 0763779091

SEXUAL HEALTH SCREENERS

A variety of screening instruments have been developed to help clinicians quickly recognize female sexual problems and whether they are causing women distress. There are several validated screening tools that focus on hypoactive sexual desire disorder (HSDD), which is the most common sexual complaint of women of all ages.

Although not all screeners will be relevant—they vary in their usefulness depending upon clinical specialty and the patient population served—several have been validated in clinical trials. Below is a list of a few of these tools.

Decreased Sexual Desire Screener (DSDS)

Clayton AH, Goldfischer ER, Goldstein I, et al. Validation of the decreased sexual desire screener (DSDS): a brief diagnostic instrument targeted for generalized acquired female hypoactive sexual desire disorder (HSDD). J Sex Med. 2009 Mar;6(3):730-8.

Consists of five questions; self-administered.

Female Sexual Function Index (FSFI)

Rosen R, Brown C, Heiman J, et al. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. J Sex Marital Ther. 2000; 26(2):191-208.

Consists of 19 questions to assess key dimensions of sexual function in women; self-administered.

* See "*Appendix*" for FSFI Screening Tool and Answer Key.

Sexual Interest and Desire Inventory–Female (SIDI–F)

Clayton AH, Segraves RT, Leiblum S, et al. Reliability and validity of the Sexual Interest and Desire Inventory–Female (SIDI–F), a scale designed to measure severity of female hypoactive sexual desire disorder. J Sex Marital Ther. 2006; 32(2):115-35.

Consists of 13 items to assess the severity of HSDD; clinician-administered; more advanced screener.

Brief Hypoactive Sexual Desire Disorder Screener

Leiblum S, Symonds T, Moore J, et al. A methodology study to develop and validate a screener for hypoactive sexual desire disorder in postmenopausal women. J Sex Med. 2006; 3(3):455-64.

Consists of four questions; self-administered; targeted to postmenopausal women.

Brief Profile of Female Sexual Function (B–PFSF)

Rust J, Derogatis L, Rodenberg C, et al. Development and validation of a new screening tool for hypoactive sexual desire disorder: The Brief Profile of Female Sexual Function (B–PFSF). Gynecol Endocrinol. 2007; 23(11):638-44.

Consists of seven questions; self-administered; targeted to postmenopausal women

**Adapted from: Talking With Patients About Sexuality and Sexual Health. Association of Reproductive Health Professionals*

REFERENCES

[1] Basson R. Female sexual response: the role of drugs in the management of sexual dysfunction. Obstet Gynecol 2001;98:350-353.

[2] World Health Organization. ICD-10: International statistical classification of diseases and related health problems. Geneva: World Health Organization; 1992.

[3] American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Washington, DC: American Psychiatric Association; 1994: 493-522.

[4] Basson R, Berman J, Burnett A, Derogatis L, Ferguson D, Fourcroy J, Goldstein I, Graziottin A, Heiman J, Laan E. Report of the International Consensus Development Conference on Sexual Dysfunction: Definitions and Classifications. *J of Urol 2000;* 163(3): 888-893.

[5] Basson R. Sexuality and Sexual Disorders. *Clinical Updates in Women's Healthcare*. Washington DC: American Congress of Obstetricians and Gynecologists; 2(2): 2003.

[6] Basson R, Althof S, David S, Fugl-Meyer K, Goldstein I. Summary of the recommendations on sexual dysfunctions in women. J Sex Med 2004;1: 24–34. in Burri AV, Cherkas LM, Spector TD. *The Genetics and Epidemiology of Female Sexual Dysfunction: A review*. J Sex Med 2009; 6; 646-657.

[7] American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Proposed Revisions. Washington, DC: American Psychiatric Association; 2010. Available at www.dsm5.org. Accessed May 8, 2010.

[8] Haefner HK. Report of the International Society for the Study of Vulvovaginal Disease terminology and classification of vulvodynia. *J Low Genit Tract Dis* 2007 Jan;1 1(1): 48-9.

[9] Leiblum S, Nathan S. Persistent sexual arousal syndrome in women: a not uncommon but little recognized complain. *Sex Relationship The* 2002; 17: 191-198.

[10] Nazareth I, Boynton P, King M. Problems with sexual function in people attending London general practitioners: cross sectional study. BMJ 2003; 327: 423

[11] Geiss IM, Umek WH, Dungl A, Sam C, Riss P, Hanzal E.Prevalence of female sexual dysfunction in gynecologic and urogynecologic patients according to the international consensus classification. Urology 2003; (62)3: 514-518.

[12] Mercer CH, Fenton KA, Johnson AM, Wellings K, Macdowall W, McManus S, Nanchahal K, Erens B: Sexual function problems and help seeking behavior in Britain: national probability sample survey. *BMJ* 2003, 327:426-427.

[13] Edward O. Laumann; Anthony Paik; Raymond C. Rosen Sexual Dysfunction in the United States: Prevalence and Predictors *JAMA*. 1999;281(6):537-544.

[14] Aslan E, Fynes M. Female Sexual Dysfunction. Int Urogynecol J 2008; 19: 293-305.

[15] Shifren, J, Monz, B, Russo P, Segreti, A and Johannes, C, *Sexual Problems and Distress in United States Women*, Obstetrics and Gynecology 2008; 112(5).

[16] Witting K, Santtila P, Varjonen M, Jern P, Johansson A, von der Pahlen B, Sandnabba K. *Female Sexual Dysfunction, Sexual Distress, and Compatibility with Partner*. J Sex Med 2008; 5: 2587-2599.

[17] *The Top 10 Things You Need to Know About Female Sexuality*, Association fo Reproductive Health Professionals. Retrieved on June 20, 2010 at: www.arhp.org/Publications-and-Resources/Clinical-Fact-Sheets/SHF-Top-10

[18] Nusbaum MR, Helton MR, Ray N. The changing nature of women's sexual health concerns through the midlife years. Maturitas 2004; 49(4): 283-291.

[19] Shifren JL, Johannes CB, Monz BU, Russo PA, Bennett L, Rosen R. Help-seeking behavior of women with self-reported distressing sexual problems. J Womens Health 2009; 18(4): 461-468.

[20] Pauls RN, Kleeman SD, Segal JL, Silva WA, Goldenhar LM, Karram MM. Practice patterns of physician members of the American Urogynecologic Society regarding female sexual dysfunction: results of a national survey. *Int Urogynecol J* 2005; 16: 460-467.

[21] Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino Jr R. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. J Sex Marital Ther 2000; 26: 191-208.

[22] Kingsberg SA. Taking a sexual history. *Obstet Gynecol Clin N Am* 2006; 33: 535-547.

[23] Diamont AL, Schuster MA, McGuigan K, Lever J. Lesbians' Sexual History with Men: Implications for taking a sexual history. *Arch Intern Med* 1999; 159: 2730-36.

[24] Grulich A, de Visser R, Smith A, Rissel C, Richters J. Sex in Australia: Homosexual experience and recent homosexual encounters. *Aust NZ J Public Health* 2003; 27: 155-63.

[25] Annon JS. The PLISSIT model: a proposed conceptual scheme for the behavioral treatment of sexual problems. *J Sex Educ Ther*. 1976;2:1-15.

[26] Binik YM, Meana M, Berkley K, Khalifé S. The sexual pain disorders: is the pain sexual or is the sex painful? Annu Rev Sex Res 1999; 10: 210–35.

[27] Leiblum SR, and Seehuus M. FSFI scores of women with persistent genital arousal disorder compared with published scores of women with female sexual arousal disorder and healthy controls. *J Sex Med* 2009; 6: 469–473.

[28] Shifren JL. Sexual Dysfunction in Women: Management. UpToDate Online 18.1 Accessed 4/6/2010.

[29] Werlinger K, King TK, Clark MM, Pera V, Wincze JP. Perceived changes in sexual functioning and body image following weight loss in an obese female population: A pilot study. Journal of Sex & Marital Therapy 1997; 23(1):74-78.

[30] The role of testosterone therapy in postmenopausal women: position statement of The North American Menopause Society. Menopause 2005;12(5):496-51.

[31] Shafik A, El-Sibai O. Vaginismus: results of treatment with botulin toxin *Journal of Obstetrics & Gynaecology* 2000; 20(3): 300-302.

[32] Bond DS, Wing RR, Vithiananthan S, Sax HC, Roye GD, Pohl D, Giovanni J. Significant resolution of female sexual dysfunction after bariatric surgery. *Surgery for Obesity and Related Diseases* 2010; Available online 4 June 2010.

[33] Tuiten A, Van Honk J, Koppeschaar H, Bernaards C, Thijssen J, Verbaten R. Time course of effects of testosterone administration on sexual arousal in women. Arch Gen Psychiatry 2000; 57:149–53.

[34] Basson R, Schulz W, Binik Y, Brotto L, Eschenbach E, Laan E, Utian W, Wesselmann U, Lankveld Y, Wyatt L, Leiblum S, Althof S, Redmond G. Women's sexual desire and arousal disorders and sexual pain. In: Lue T, Basson R, Rosen R, Giuliano F, Khoury S, Montorsi F, eds. Sexual Medicine. Sexual Dysfunctions in Men and Women. Plymouth: Health Publications; 2004:853–974.

Female Sexual Function Index (FSFI) ©

Subject Identifier _____ Date _____

INSTRUCTIONS: These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

CHECK ONLY ONE BOX PER QUESTION.

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner's sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest?

   ☐ Almost always or always
   ☐ Most times (more than half the time)
   ☐ Sometimes (about half the time)
   ☐ A few times (less than half the time)
   ☐ Almost never or never

2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?

   ☐ Very high
   ☐ High
   ☐ Moderate
   ☐ Low
   ☐ Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Almost always or always
   - ☐ Most times (more than half the time)
   - ☐ Sometimes (about half the time)
   - ☐ A few times (less than half the time)
   - ☐ Almost never or never

4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Very high
   - ☐ High
   - ☐ Moderate
   - ☐ Low
   - ☐ Very low or none at all

5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Very high confidence
   - ☐ High confidence
   - ☐ Moderate confidence
   - ☐ Low confidence
   - ☐ Very low or no confidence

6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Almost always or always
   - ☐ Most times (more than half the time)
   - ☐ Sometimes (about half the time)
   - ☐ A few times (less than half the time)
   - ☐ Almost never or never

7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Almost always or always
   - ☐ Most times (more than half the time)
   - ☐ Sometimes (about half the time)
   - ☐ A few times (less than half the time)
   - ☐ Almost never or never

8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Extremely difficult or impossible
   - ☐ Very difficult
   - ☐ Difficult
   - ☐ Slightly difficult
   - ☐ Not difficult

9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?

   - ☐ No sexual activity
   - ☐ Almost always or always
   - ☐ Most times (more than half the time)
   - ☐ Sometimes (about half the time)
   - ☐ A few times (less than half the time)
   - ☐ Almost never or never

10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

    - ☐ No sexual activity
    - ☐ Extremely difficult or impossible
    - ☐ Very difficult
    - ☐ Difficult
    - ☐ Slightly difficult
    - ☐ Not difficult

11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?

- ☐ No sexual activity
- ☐ Almost always or always
- ☐ Most times (more than half the time)
- ☐ Sometimes (about half the time)
- ☐ A few times (less than half the time)
- ☐ Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?

- ☐ No sexual activity
- ☐ Extremely difficult or impossible
- ☐ Very difficult
- ☐ Difficult
- ☐ Slightly difficult
- ☐ Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

- ☐ No sexual activity
- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ About equally satisfied and dissatisfied
- ☐ Moderately dissatisfied
- ☐ Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

- ☐ No sexual activity
- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ About equally satisfied and dissatisfied
- ☐ Moderately dissatisfied
- ☐ Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ About equally satisfied and dissatisfied
- ☐ Moderately dissatisfied
- ☐ Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ About equally satisfied and dissatisfied
- ☐ Moderately dissatisfied
- ☐ Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain <u>during</u> vaginal penetration?

- ☐ Did not attempt intercourse
- ☐ Almost always or always
- ☐ Most times (more than half the time)
- ☐ Sometimes (about half the time)
- ☐ A few times (less than half the time)
- ☐ Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain <u>following</u> vaginal penetration?

- ☐ Did not attempt intercourse
- ☐ Almost always or always
- ☐ Most times (more than half the time)
- ☐ Sometimes (about half the time)
- ☐ A few times (less than half the time)
- ☐ Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

- ☐ Did not attempt intercourse
- ☐ Very high
- ☐ High
- ☐ Moderate
- ☐ Low
- ☐ Very low or none at all

Thank you for completing this questionnaire

Copyright ©2000 All Rights Reserved

FSFI SCORING APPENDIX

Question	Response Options
1. Over the past 4 weeks, how **often** did you feel sexual desire or interest?	5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?	5 = Very high 4 = High 3 = Moderate 2 = Low 1 = Very low or none at all
3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?	0 = No sexual activity 5 = Very high 4 = High 3 = Moderate 2 = Low 1 = Very low or none at all
5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?	0 = No sexual activity 5 = Very high confidence 4 = High confidence 3 = Moderate confidence 2 = Low confidence 1 = Very low or no confidence
6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never

7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult
9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult
11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

0 = No sexual activity
5 = Very satisfied
4 = Moderately satisfied
3 = About equally satisfied and dissatisfied
2 = Moderately dissatisfied
1 = Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

0 = No sexual activity
5 = Very satisfied
4 = Moderately satisfied
3 = About equally satisfied and dissatisfied
2 = Moderately dissatisfied
1 = Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

5 = Very satisfied
4 = Moderately satisfied
3 = About equally satisfied and dissatisfied
2 = Moderately dissatisfied
1 = Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

5 = Very satisfied
4 = Moderately satisfied
3 = About equally satisfied and dissatisfied
2 = Moderately dissatisfied
1 = Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?

0 = Did not attempt intercourse
1 = Almost always or always
2 = Most times (more than half the time)
3 = Sometimes (about half the time)
4 = A few times (less than half the time)
5 = Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?

0 = Did not attempt intercourse
1 = Almost always or always
2 = Most times (more than half the time)
3 = Sometimes (about half the time)
4 = A few times (less than half the time)
5 = Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

0 = Did not attempt intercourse
1 = Very high
2 = High
3 = Moderate
4 = Low
5 = Very low or none at all

FSFI DOMAIN SCORES AND FULL SCALE SCORE

The individual domain scores and full scale (overall) score of the FSFI can be derived from the computational formula outlined in the table below. For individual domain scores, add the scores of the individual items that comprise the domain and multiply the sum by the domain factor (see below). Add the six domain scores to obtain the full scale score. It should be noted that within the individual domains, a domain score of zero indicates that the subject reported having no sexual activity during the past month. Subject scores can be entered in the right-hand column.

Domain	Questions	Score Range	Factor	Minimum Score	Maximum Score	**Score**
Desire	1, 2	1 – 5	0.6	1.2	6.0	
Arousal	3, 4, 5, 6	0 – 5	0.3	0	6.0	
Lubrication	7, 8, 9, 10	0 – 5	0.3	0	6.0	
Orgasm	11, 12, 13	0 – 5	0.4	0	6.0	
Satisfaction	14, 15, 16	0 (or 1) – 5	0.4	0.8	6.0	
Pain	17, 18, 19	0 – 5	0.4	0	6.0	
			Full Scale Score Range	2.0	36.0	

THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS
WOMEN'S HEALTH CARE PHYSICIANS

PRACTICE BULLETIN

CLINICAL MANAGEMENT GUIDELINES FOR OBSTETRICIAN—GYNECOLOGISTS

NUMBER 119, APRIL 2011

Female Sexual Dysfunction

Female sexual dysfunction encompasses a number of conditions that are characterized by one of the following symptoms: loss of sexual desire, impaired arousal, inability to achieve orgasm, or sexual pain. A diagnosis of female sexual dysfunction is made when symptoms are sufficient to result in personal distress (1, 2). The adverse effect of female sexual dysfunction on the quality of life of affected women can extend into interpersonal relationships and the workplace. In North American culture, female sexual dysfunction is prevalent but often neglected in the health care setting because women are unlikely to discuss it with their health care providers unless asked (2). Talking about sexual function with patients may elicit anxiety in the physician and patient. Obstacles to discussing sexual health include a lack of adequate training and confidence in the topic, few perceived treatment options, inadequate clinical time to obtain a sexual history, patients' reluctance to initiate the conversation, and the underestimation of the prevalence of sexual dysfunction (3). The purpose of this document is to describe the basics of this disorder, including the physiology of the normal female sexual response; outline the criteria for diagnosis as listed in the Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR*, fourth edition, text revision* (DSM-IV-TR)*; highlight current management strategies based on available evidence; and target areas that require more study.*

Background

During the 1950s, Kinsey and colleagues published landmark studies of sexual practices in the United States that examined the sexual lives of females (4). Masters and Johnson subsequently pioneered research efforts that expanded our scientific knowledge of the sexual response (5). They identified four physiologic stages of the sexual response: 1) excitement, 2) plateau, 3) orgasm, and 4) resolution. These stages are basic biologic responses influenced by psychologic, environmental, and physiologic factors. Later, a three-phase model was developed, consisting of 1) desire, 2) arousal, and 3) orgasm (6). A more complex, nonlinear model of female sexual response also has been proposed that integrates emotional intimacy, sexual stimuli, and relationship satisfaction (2). Desire and arousal are difficult to distinguish as distinct entities, and desire does not always precede arousal. For many women, a sexual encounter may begin without any desire initially present. According to the *DSM-IV-TR,* sexual dysfunction generally is characterized as any sexual complaint or problem resulting from disorders of desire, arousal, orgasm, or sexual pain that causes marked distress or interpersonal difficulty (1). Because more than one female sexual dysfunction may exist in the same patient, it is important that the clinician determine which is the primary female sexual dysfunction and how comorbid female sexual dysfunctions evolved over time.

Normal Sexual Response

Sexual arousal in women results in increased genital blood flow, swelling of the labia and vaginal walls, release

Committee on Practice Bulletins—Gynecology. This Practice Bulletin was developed by the Committee on Practice Bulletins—Gynecology with the assistance of John Buster, MD; Sheryl Kingsberg, PhD; and Charles Kilpatrick, MD. The information is designed to aid practitioners in making decisions about appropriate obstetric and gynecologic care. These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

of lubricating secretions from the genital tract, and transudation from the subepithelial vasculature. Vulvar blood flow increases from active neurogenic dilation of sinusoidal blood spaces in the corporal tissue of the clitoris, vestibular bulbs, and spongiosal tissue surrounding the urethra (2, 7). Pelvic nerve stimulation results in clitoral smooth muscle relaxation and arterial smooth muscle dilation. With increasing arousal, clitoral artery inflow increases clitoral intracavernous pressure, which causes tumescence and protrusion of the clitoris (2, 7).

Central neuroendocrine mechanisms that regulate female sexual response are described today as a dynamic process, creating a balance between excitatory and inhibitory factors (2, 7, 8). Desire is believed to be triggered in the hypothalamus by the activation of the dopamine system (9–11). Research suggests that increased activity of the dopamine system occurs early in the sexual response and may propagate to and activate other areas of the brain, including the limbic system (11, 12). The noradrenergic system is believed to be involved in sexual arousal through the initiation of autonomic sensations of excitement with increased heart rate and increasing blood pressure (both systolic and diastolic) (13, 14). Orgasm is a transient peak sensation of intense pleasure and can be described as a reflex with rhythmic contractions of the perineal, bulbocavernosus, and pubococcygeus muscles, with a sudden release of endogenous opioids, serotonin, prolactin, and oxytocin (15, 16). Resolution has been associated with increased brain serotonergic activity and decreased dopamine release (11).

Types of Sexual Dysfunction

Female sexual dysfunction conditions can be categorized as sexual desire disorders, sexual arousal disorder, orgasmic disorder, or sexual pain disorders.

Sexual Desire Disorders

Hypoactive sexual desire disorder and sexual aversion disorder comprise the sexual desire disorders. According to the *DSM-IV-TR*, *hypoactive sexual desire disorder* is defined as a persistent or recurrent deficiency or absence of sexual desire or receptivity to sexual activity that causes marked distress or interpersonal difficulty (1). *Sexual aversion disorder* is defined as a persistent or recurrent aversive response to genital contact with a sexual partner that causes distress or interpersonal difficulty (1).

Hypoactive sexual desire disorder is the most common female sexual dysfunction, with an estimated prevalence rate ranging between 5.4% and 13.6% (Fig. 1) (17, 18). One study reported an 8.3% prevalence of hypoactive sexual desire disorder based on a representative sample of almost 2,000 U.S. women aged 30–70 years (19).

Hypoactive sexual desire disorder reaches a peak in women aged 40–60 years (Fig. 1) and in individuals that have undergone surgical menopause (17, 19). In this age group, the disorder can be linked to situational circum-

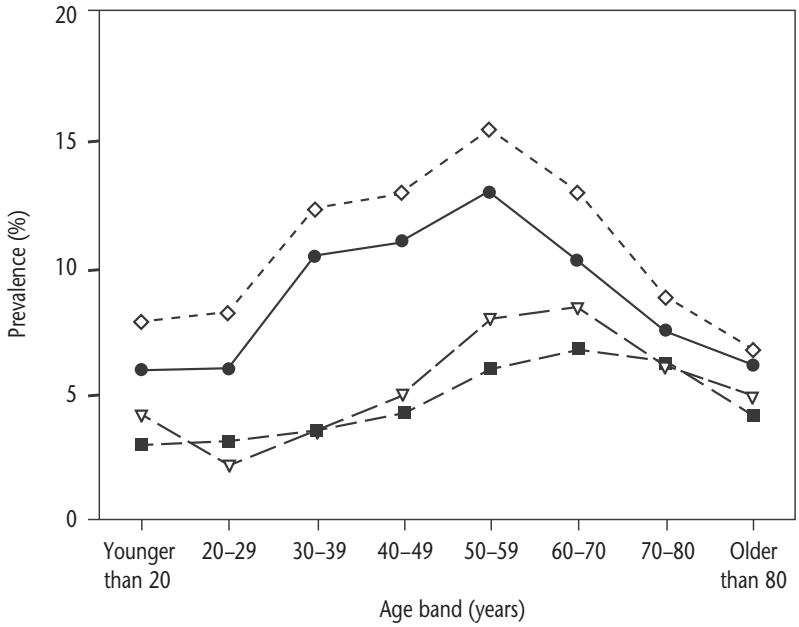


Figure 1. Prevalence of sexual problems associated with sexually related personal distress by 10-year age bands. *Filled circle*, desire; *open triangle*, arousal; *filled square*, orgasm; *open diamond*, any. (Shifren JL, Monz BU, Russo PA, Segreti A, Johannes CB. Sexual problems and distress in United States: prevalence and correlates. Obstet Gynecol 2008;112:970–8.)

stances, such as chronic disease, depression, or medication use, but more often is diagnosed as an isolated event (20–26). Atrophic vaginitis and pelvic floor surgery can lead to dyspareunia and sexual aversion and lost sexual desire (2). Women with endocrine problems and adrenal insufficiency also frequently experience hypoactive sexual desire disorder (27, 28).

In young women, hypoactive sexual desire disorder frequently is associated with situational circumstances, such as dysfunctional interpersonal relationships, chronic disease, depression, use of certain medications, gynecologic disorders, or other mitigating factors (20, 21). Use of antidepressants, particularly selective serotonin reuptake inhibitors (SSRIs), oral contraceptives, and corticosteroids can be associated with hypoactive sexual desire disorder (29–32).

The prevalence of sexual aversion disorder is not well established. Painful or traumatic life events may give rise to sexual aversion. Because many women with this disorder avoid sexual contact, the disorder may remain undiagnosed unless it surfaces as part of a dysfunctional relationship (33, 34). Treatment consists of psychotherapy and antidepressants for patients who have associated anxiety.

Female Sexual Arousal Disorder

Female sexual arousal disorder refers to an inability to complete sexual activity with adequate lubrication that causes marked distress or interpersonal difficulty (1). The results from a survey of a national research panel representative of U.S. women indicate that 5% of these women have significant difficulty with sexual arousal (17). Because female sexual arousal disorder frequently is linked to a gynecologic or chronic medical condition or the use of certain medications, it typically resolves when the inciting disorder is successfully treated or the medication is adjusted. Medications, particularly SSRIs, are commonly associated with female sexual arousal disorder (35, 36). Female sexual arousal disorder also may be associated with atrophic vaginitis after spontaneous menopause or oophorectomy, which causes pain with vaginal penetration and difficulties in lubrication that impair sexual arousal.

Female Orgasmic Disorder

The *DSM-IV-TR* defines *female orgasmic disorder* as a persistent or recurrent delay in or absence of orgasm after a normal excitement phase, which causes marked distress or interpersonal difficulty (1). Female orgasmic disorder has a reported prevalence of 3.4–5.8 % (17).

Primary orgasmic disorder is defined as never having the ability to achieve orgasm. Women with primary orgasmic disorder usually have normal levels of sexual desire but are unable to achieve orgasm. Primary orgasmic disorder often is associated with a history of trauma or abuse or can have genetic origins, but it may have no explanation (37). It usually does not resolve on its own (38). In primary orgasmic disorder associated with abuse, psychotherapy and couples counseling may be helpful. After counseling, masturbation is an effective way for the woman who has never achieved orgasm to experience her first climax (15). There is no effective therapy for unexplained primary orgasmic disorder in which the patient has never achieved orgasm even through masturbation.

Secondary orgasmic disorder generally is the result of another sexual dysfunction. Secondary orgasmic disorder frequently is linked with hypoactive sexual desire disorder, having the same situational and psychosocial causes. It can be associated with pelvic surgery and medications, such as antidepressants. In women with orgasmic dysfunction, SSRIs are a commonly recognized cause (30, 31). A number of psychosocial factors, including age, social class, personality, and relationship status have been commonly related to orgasmic ability. Religious and cultural beliefs have been found to be negatively correlated with orgasmic ability, a finding that is believed to be due to individuals' feelings of excessive guilt about participating in sexual activity (15).

Treatment of the primary dysfunction frequently leads to restoration of the ability to achieve orgasm (15). Women are taught to be comfortable with their bodies as well as their own sexuality by altering negative attitudes and decreasing anxiety. Adjunctive education on self-pleasuring techniques generally is helpful. Behavioral treatments include masturbation instruction, communication exercises, sensate focus exercises, and systematic desensitization (39).

Sexual Pain Disorders

Dyspareunia and vaginismus are two subcategories of sexual pain disorders. According to the *DSM-IV-TR*, *dyspareunia* is defined in as recurrent or persistent genital pain associated with sexual intercourse that is not caused exclusively by lack of lubrication or by vaginismus and causes marked distress or interpersonal difficulty (1). The *DSM-IV-TR* defines *vaginismus* as recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with sexual intercourse, causing marked distress or interpersonal difficulty (1).

Dyspareunia is a common sexual problem, particularly in postmenopausal women in which prevalence ranges from 8% to 22% (40, 41). Recent perspectives suggest that dyspareunia may be characterized as a pain

disorder that interferes with sexuality rather than as a sexual disorder characterized by pain. Therefore, dyspareunia is believed to be a specific pain disorder with interdependent psychologic and biologic contributions and context-dependent etiologies (38). Pain on vaginal entry typically is reflective of provoked vestibulodynia, inadequate lubrication, or vaginismus. Physical examination will reproduce the pain when the vulva or vagina is touched with a cotton swab or when a finger is inserted into the vagina. Palpation of the walls of the vagina, uterus, and urethral structures can help identify physiologic contributions. Identification of the initiating and maintaining factors is fundamental to the diagnostic process. Loss of desire and arousal disorders associated with dyspareunia may contribute to the worsening of pain over time because the lack of genital arousal paired with sexual activity often results in physical discomfort (2, 38). The differential diagnosis is broad (Table 1).

Vaginismus is a relatively uncommon problem with prevalence rates ranging from 1% to 6% (2). In some women, vaginismus occurs because pain is anticipated (38). For some women, vaginismus is limited to sexual activity, whereas in others it is related only to fear of pelvic examination. Some women enjoy sexual activity and achieve orgasm, but still have vaginismus; they cannot consummate intercourse because vaginal penetration is not possible (2, 33, 38). Vaginismus frequently is linked to hypoactive sexual desire disorder and sexual aversion. These disorders often have the same situational and psychosocial causes and resolve in response to treatment of those conditions. In other cases, vaginismus is linked to gynecologic disorders, chronic medical conditions, or the use of certain medications, and it resolves with treatment or medication adjustment (2, 33, 38, 40).

Table 1. Conditions Associated With Sexual Pain

Superficial	Deep
Provoked vestibulodynia	Endometriosis
	Pelvic congestion syndrome
Vulvodynia	Interstitial cystitis
Chronic vulvar dermatoses	Uterine retroversion
Vulvitis or vulvovaginitis	Uterine leiomyomas
Condylomas	Adenomyosis
Dermatologic disease (infectious or noninfectious)	Pelvic inflammatory disease
	Pelvic adhesive disease
	Ovarian remnant syndrome
	Irritable bowel syndrome
	History of sexual abuse

Modified from Boardman LA, Stockdale CK. Sexual pain. Clin Obstet Gynecol 2009;52:682–90.

The most effective treatment is a combination of cognitive and behavioral psychotherapy, typically referred to as systematic desensitization. Women are taught deep muscle relaxation techniques, which they then use during exercises in which they are instructed to very gradually insert objects (usually dilators) of increasing diameter into the vagina. The goal is to desensitize a woman to her fear that vaginal penetration will be painful and to enable her to gain a sense of control over a sexual encounter or a pelvic examination, so that vaginal muscle contractions no longer occur as an automatic defense to vaginal penetration. If treatment is not progressing, referral for pelvic floor physical therapy often is helpful (2, 33, 38).

Clinical Considerations and Recommendations

▶ *What is the initial approach to a patient who presents with a possible sexual dysfunction?*

A physician who is comfortable with the topic, knows and has seen the patient before, is caring and compassionate, and seems concerned about sexual wellness is one with whom patients will feel comfortable discussing sexual concerns (42). The initial approach begins with obtaining a sexual history during the review of symptoms. A very brief set of questions can suffice or the patient can complete a screening questionnaire (4, 43). The Brief Sexual Symptom checklist for women was developed by the International Consultation in Sexual Medicine as a primary screening tool and may be helpful (see Box 1). A questionnaire provides an opportunity to let the patient know that discussing sexual health is important and appropriate. Taking a thorough sexual history includes recording the patient's medical, surgical, social, and psychiatric history (2, 43–45). Information about the use of prescription and over-the-counter medications should be elicited and a complete gynecologic evaluation performed, targeting areas that were uncovered in the sexual function history. After initial evaluation, treatment can be initiated or, depending on the comfort level and training of the physician, a referral can be made to a trained specialist, such as a marriage counselor or sex therapist.

▶ *Which medications are associated with female sexual dysfunction?*

Numerous medications, both prescription and over-the-counter, have been associated with sexual dysfunction. Psychotropic medications, antihypertensives, histamine

Box 1. Brief Sexual Symptom Checklist for Women

Please answer the following questions about your overall sexual function:

1. Are you satisfied with your sexual function?

__ Yes __No

If no, please continue.

2. How long have you been dissatisfied with your sexual function?

3a. The problem(s) with your sexual function is: (mark one or more)

__1 Problem with little or no interest in sex

__2 Problem with decreased genital sensation (feeling)

__3 Problem with decreased vaginal lubrication (dryness)

__4 Problem reaching orgasm

__4 [5] Problem with pain during sex

__5 [6] Other:

3b. Which problem is most bothersome (circle)

1 2 3 4 5 [6]

[The problems were misnumbered in the source publication.—Ed.]

4. Would you like to talk about it with your doctor?

__Yes __No

Reprinted from Hatzichristou D, Rosen RC, Derogatis LR, Low WY, Meuleman EJ, Sadovsky R, et al. Recommendations for the clinical evaluation of men and women with sexual dysfunction. J Sex Med 2010;7:337–48. Review.

blockers, and hormonal medications also have been implicated.

The most common medications linked to sexual dysfunction are the SSRIs. The most frequently reported problems are orgasmic dysfunction, decreased sexual desire, and decreased arousal (36). Compounding this side effect is the fact that depressed women tend to have sexual dysfunction before treatment begins (46). Decreasing the dosage of a medication sometimes may help alleviate some of these problems. Switching to another antidepressant may alleviate symptoms, but other antidepressant classes also have been associated with sexual dysfunction. Although a structured treatment interruption may be helpful in some patients, it is not an option in some other patients because of underlying psychiatric concerns. Consultation with a health care provider with expertise in psychiatric medications who can assist in distinguishing baseline female sexual dysfunction from dysfunction resulting from treatment of depression may be helpful. A medication adjustment with long-term follow-up may be important for improved sexual functioning.

▶ *What is the effect of hysterectomy on sexual function? What is the effect of supracervical hysterectomy on postoperative sexual function compared with hysterectomy with removal of the cervix?*

The main indications for hysterectomy in the United States are uterine leiomyomas, menstrual disorders, uterine prolapse, and endometriosis—all of which can lead to a decreased quality of life and sexual dysfunction (47). Aside from the risks inherent in the surgery itself, anxiety about sexual function after surgery is high (48, 49).

Postoperative dyspareunia, resulting from shortening vaginal length at the time of abdominal hysterectomy; postoperative scarring of the vagina, resulting from vaginal dryness; and the possibility that orgasm would not be as strong or pleasurable without a uterus have been proposed as reasons for decreased sexual function postoperatively (50–52). However, there are many prospective studies that document improved dyspareunia rates after hysterectomy, regardless of operative route (53–57).

In general, prospective studies constructed to address the effect of hysterectomy on postoperative sexual function have failed to show a difference in total versus subtotal hysterectomy (57–60). One study of sexual satisfaction reported similar rates preoperatively and 1 year postoperatively by women, irrespective of type of hysterectomy performed (59). A second study comparing supracervical hysterectomy and total abdominal hysterectomy reported similar findings in the frequency of intercourse, frequency of orgasm, and rating of sexual relationship with a partner measured preoperatively and postoperatively for women in both groups (58). In a third study, there were no differences between the supracervical hysterectomy and the total abdominal hysterectomy groups in sexual functioning and measurement of health-related quality of life, including sexual desire, orgasm frequency and quality, and body image, measured 2 years after surgery (60).

▶ *What is the role of estrogen therapy on sexual function?*

The results of recently conducted hormonal supplementation studies have prompted clinicians to re-evaluate universal estrogen use in postmenopausal women, in oral or topical form (61). Estrogen affects sexual perfor-

mance through maintenance of genital tissues and secretions, pelvic muscle tone, and elasticity. The addition of topical estrogen to the vagina can aid lubrication by reducing intercellular space resistance and can improve fluid flow through the epithelium (62). Vaginal estrogen for the treatment of postmenopausal atrophy results in improved dyspareunia, less vaginal dryness, improved vaginal mucosal maturation indices, and reduced vaginal pH (63). Genital estrogen effects are best understood by the consequences of their absence. Estradiol secretion is variable during perimenopausal years and decreases to very low levels after menopause. Estrogen withdrawal increases tissue fragility, rates of vaginal and urinary infections, irritation, dryness, urogenital pain, and susceptibility to vaginal tissue trauma (7, 16, 64). Decreasing estrogen levels induce vulvovaginal atrophy leading to sexual pain and trauma during intercourse.

Oral forms of estrogen may not alleviate vulvovaginal atrophy and topical estrogen may be required (65). For vulvovaginal atrophy leading to sexual dysfunction, topical estrogen formulations are the most effective (65, 66). Tablets, gels, creams, and vaginal rings appear to be equally effective, and selection of an estrogen formulation should incorporate patient's preference (67). Systemic absorption of vaginal estrogen is limited, but still a concern because serum levels of estrogen in a treated patient are higher than in the nontreated patient. The lowest effective dose should be used for the least amount of time to alleviate symptoms (23, 68). The duration of treatment has not been determined, but some experts advocate daily treatment for a period of a few weeks, tapering down after this period based on symptoms (69).

Nonestrogen lubricants also may be useful for those women who cannot or choose not to take estrogen. These water-based or silicone-based lubricants and moisturizers do not address underlying causes of sexual dysfunction, but may be helpful in reducing or alleviating dyspareunia.

▶ *In women with orgasmic disorders, what is the evidence for the efficiency of vasoactive medications (ie, sildenafil)?*

Sildenafil citrate is believed to increase pelvic blood flow to the clitoris and vagina similar to that in men who are being treated for erectile dysfunction. In randomized clinical trials of women being treated for sexual arousal disorder, the results have been contradictory (32, 70–72). Clinical trials of sildenafil were conducted to address the lack of vasocongestion. Vaginal engorgement in the presence of sexual stimuli was demonstrated with the use of sildenafil, but subjective experience of arousal was not reliably achieved. One study of 98 women treated for depression with an SSRI compared sildenafil with placebo to improve orgasmic dysfunction and noted an improvement in Clinical Global Impression Sexual function scores in the sildenafil group (73). However, additional research is needed before a recommendation can be made for the use of sildenafil for the treatment of female sexual dysfunction.

▶ *What is the evidence for the safety and efficacy of devices to treat arousal disorders?*

One battery-powered device intended for clitoral therapy has received approval from the U.S. Food and Drug Administration (FDA). This device is applied directly over the clitoris to create a vacuum to increase blood flow and engorgement (74). Several small pilot studies have evaluated its efficacy in improving orgasm, vaginal lubrication, genital sensation, and sexual satisfaction (75). This device may be best suited for women with arousal and orgasm difficulties, and no adverse outcomes from use of the device have been noted.

▶ *What formulations and what routes of administration are preferred for androgen therapy in the treatment of hypoactive sexual desire disorder?*

Androgen levels continue to decrease in reproductive-aged women until menopause, at which point no further decrease is observed (76, 77). Numerous studies have demonstrated that sexual desire and sexual activity increase with androgen supplementation, but there also are as many that are equivocal in this regard. There are little long-term prospective data on the use of androgen therapy for female sexual dysfunction. Testosterone, the most commonly used androgen replacement treatment, does not have FDA approval for the treatment of hypoactive sexual desire disorder (78). Transdermal testosterone has been shown to be effective for the short-term treatment of hypoactive sexual desire disorder in women, with little evidence to support long-term use (longer than 6 months) (78–87). There is no proven clinical utility to monitoring androgen levels before or during treatment (88, 89).

Transdermal testosterone delivered by a matrix patch is the most extensively studied of the systems. However, matrix patches are not approved by the FDA and, therefore, are not available in the United States for the treatment of hypoactive sexual desire disorder (90). There are numerous randomized blinded clinical trials of the use of this matrix patch by nearly 3,000 postmenopausal women (in whom menopause occurred naturally or was surgically induced) with hypoactive sexual

desire disorder (78–86). All trials have demonstrated dose-related, significant increases in sexual desire with testosterone patches versus placebo when the dose was maintained at 300 micrograms per day or greater. All trials used a matrix patch that delivered testosterone at various doses (150 micrograms per day, 300 micrograms per day, or 450 micrograms per day), depending on the experimental design. The dosages investigated approximated the lower and higher limits of normal production of testosterone in premenopausal women. At 300 micrograms per day, consistent increases in sexual desire with few adverse effects were seen, but at 150 micrograms per day, the improvements were borderline. Side effects in these first 24-week trials were minimal and not different between groups except for patch site irritation and hirsutism, which was minor.

There are fewer studies of testosterone use in premenopausal women for the treatment of hypoactive sexual desire disorder. In a randomized controlled trial of 31 women (aged 31–45 years) using testosterone cream, those women showed statistically significant increases on validated self-reported sexual function scales at 12 weeks (91). In a larger trial of 261 women (aged 35–46 years), the use of testosterone spray, in three different doses, was shown to statistically increase sexually satisfying events with the higher two doses compared with placebo at 16 weeks (92).

Methyltestosterone, micronized testosterone, and dehydroepiandrosterone are available either off label or as customized formulations. However, there are limited, prospective, randomized high-quality clinical trial data on this treatment (93, 94). Consensus reports from the Endocrine Society and the North American Menopause Society have been cautionary (88, 89).

▶ *What are the risks of androgen therapy, and how should patients be monitored?*

The main risks associated with androgen replacement therapy in women are hirsutism, acne, virilization, and cardiovascular (CV) complications. In addition, a possible association with breast cancer has been reported.

Hirsutism

In studies in which women were administered testosterone for arousal disorders or vasocongestion difficulties, hirsutism, or unwanted hair growth, affected 3–20% of those treated (86, 93, 95, 96). In a large prospective trial of transdermal testosterone (placebo versus 150 micrograms versus 300 micrograms) for hypoactive sexual desire disorder, hair growth increased with increasing testosterone doses, although free testosterone levels had little correlation with the degree of hirsutism, and the group that experienced increased hair growth was not more likely to discontinue therapy (86).

Acne

Acne has been noted in less than 10% of patients who are treated with testosterone. In trials that compared testosterone plus estrogen with estrogen alone, there was no difference noted in acne prevalence (78, 81).

Virilization

Virilization is uncommon and is mainly seen in supraphysiologic doses (97), with few women developing clitoromegaly, deepening of the voice, increase in muscle mass, and temporal balding in the dosages used for hypoactive sexual desire disorder treatment (78, 81). When virilization is noted in patients receiving smaller doses, the condition usually is reported as mild (86).

Cardiovascular Risk

There are little prospective long-term data regarding adverse CV effects in women receiving testosterone for hypoactive sexual desire disorder (78). However, methyltestosterone combined with esterified estrogens has been associated with significant decreases in high-density lipoprotein (HDL) cholesterol and increased total cholesterol-to-HDL ratio but a significant decrease in triglycerides (98). There are little prospective long-term data regarding adverse CV effects in women receiving testosterone for hypoactive sexual desire disorder (78). In female-to-male transsexuals taking supraphysiologic doses of testosterone (160 mg/d of oral testosterone undecanoate), the risk of adverse CV effects (myocardial infarction, hypertension, and CV death) were no more than expected in the general male population (99).

Monitoring, consisting of serum lipid measurements and liver function tests in those women who are to begin androgen replacement seems reasonable. More long-term data in women receiving testosterone are needed to answer these questions.

Breast Cancer

Breast cancer has been reported in a trial of the treatment of hypoactive sexual desire disorder, but it is unclear whether this was due to chance or if there is a causal relationship (86). The Women's Health Initiative observational trial reported a nonsignificant increase in the number of invasive breast cancer cases in those women taking testosterone and estrogen versus those in the control group (adjusted hazard ratio, 1.42; 95% confidence interval, 0.95–2.11) (100).

Summary of Recommendations and Conclusions

The following conclusion is based on good and consistent scientific evidence (Level A):

- Transdermal testosterone has been shown to be effective for the short-term treatment of hypoactive sexual desire disorder, with little evidence to support long-term use (longer than 6 months).

The following conclusions are based on limited or inconsistent scientific evidence (Level B):

- Prospective studies constructed to address the effect of hysterectomy on postoperative sexual function have failed to show a difference in total versus subtotal hysterectomy.
- Vaginal estrogen for the treatment of postmenopausal atrophy results in improved dyspareunia, less vaginal dryness, improved vaginal mucosal maturation indices, and reduced vaginal pH.
- The main risks associated with androgen replacement therapy in women are hirsutism, acne, virilization, and CV complications. In addition, a possible association with breast cancer has been reported.

The following conclusions are based primarily on consensus and expert opinion (Level C):

- Female sexual dysfunction conditions can be categorized as sexual desire disorders, sexual arousal disorder, orgasmic disorder, and sexual pain disorders. Hypoactive sexual desire disorder is the most prevalent female sexual dysfunction.
- Obtaining a thorough sexual history includes recording the patient's medical, surgical, social, and psychiatric history.
- The most common medications linked to sexual dysfunction are the SSRIs. The most frequently reported problems are orgasmic dysfunction, decreased sexual desire, and decreased arousal.
- There is no proven clinical utility to monitoring androgen levels before or during the treatment for hypoactive sexual desire disorder.
- After initial evaluation, treatment can be initiated or, depending on the comfort level and training of the physician, a referral can be made to a trained specialist, such as a marriage counselor or sex therapist.

Resources

Resources listed are for information purposes only. Referral to these resources and web sites does not imply the endorsement of the American College of Obstetricians and Gynecologists. Further, the American College of Obstetricians and Gynecologists does not endorse any commercial products that may be advertised or available from these organizations or on these web sites. These lists are not meant to be comprehensive. The exclusion of a resource or web site does not reflect the quality of that source or site. Please note that web sites and URLs are subject to change without notice.

American Association of Sexuality Educators, Counselors and Therapists
http://www.aasect.org

The American Congress of Obstetricians and Gynecologists
Web Treats: Sex and Sexuality
http://www.acog.org/departments/dept_notice.cfm?recno=20&bulletin=3344

American Society for Reproductive Medicine
http://www.asrm.org

Kinsey Institute
http://www.indiana.edu/~kinsey

International Society for the Study of Women's Sexual Health
http://www.isswsh.org

North American Menopause Society
http://www.menopause.org

Society for the Scientific Study of Sexuality (SSSS)
http://www.sexscience.org

American Physical Therapy Association
http://www.apta.org

References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Text rev. Washington, DC: APA; 2000. (Level III)
2. Basson R. Sexuality and sexual disorders. Clin Update Womens Health Care 2003;II(2):1–94. (Level III)
3. Kingsberg SA. Taking a sexual history. Obstet Gynecol Clin North Am 2006;33:535–47. (Level III)
4. Kinsey AC. Sexual behavior in the human female. Philadelphia (PA): Saunders; 1953. (Level III)
5. Masters WH, Johnson VE. Human sexual response. Boston (MA): Little, Brown and Company; 1966. (Level III)
6. Kaplan HS. Disorders of sexual desire and other new concepts and techniques in sex therapy. New York (NY): Simon and Schuster; 1979. (Level III)

7. Davis SR, Guay AT, Shifren JL, Mazer NA. Endocrine aspects of female sexual dysfunction. J Sex Med 2004; 1:82–6. (Level III)
8. Archer JS, Love-Geffen TE, Herbst-Damm KL, Swinney DA, Chang JR. Effect of estradiol versus estradiol and testosterone on brain-activation patterns in postmenopausal women. Menopause 2006;13:528–37. (Level III)
9. Gizewski ER, Krause E, Karama S, Baars A, Senf W, Forsting M. There are differences in cerebral activation between females in distinct menstrual phases during viewing of erotic stimuli: a fMRI study. Exp Brain Res 2006;174:101–8. (Level II-3)
10. Bartels A, Zeki S. The neural correlates of maternal and romantic love. Neuroimage 2004;21:1155–66. (Level III)
11. Lorrain DS, Riolo JV, Matuszewich L, Hull EM. Lateral hypothalamic serotonin inhibits nucleus accumbens dopamine: implications for sexual satiety. J Neurosci 1999;19:7648–52. (Level III)
12. Abraham GE. Ovarian and adrenal contribution to peripheral androgens during the menstrual cycle. J Clin Endocrinol Metab 1974;39:340–6. (Level III)
13. Jeong GW, Park K, Youn G, Kang HK, Kim HJ, Seo JJ, et al. Assessment of cerebrocortical regions associated with sexual arousal in premenopausal and menopausal women by using BOLD-based functional MRI. J Sex Med 2005;2:645–51. (Level II-3)
14. Exton MS, Bindert A, Kruger T, Scheller F, Hartmann U, Schedlowski M. Cardiovascular and endocrine alterations after masturbation-induced orgasm in women. Psychosom Med 1999;61:280–9. (Level III)
15. Meston CM, Levin RJ, Sipski ML, Hull EM, Heiman JR. Women's orgasm. Annu Rev Sex Res 2004;15:173–257. (Level III)
16. Shifren JL, Schiff I. Role of hormone therapy in the management of menopause. Obstet Gynecol 2010;115:839–55. (Level III)
17. Shifren JL, Monz BU, Russo PA, Segreti A, Johannes CB. Sexual problems and distress in United States women: prevalence and correlates. Obstet Gynecol 2008;112:970–8. (Level II-3)
18. Segraves R, Woodard T. Female hypoactive sexual desire disorder: History and current status. J Sex Med 2006;3:408–18. (Level III)
19. West SL, D'Aloisio AA, Agans RP, Kalsbeek WD, Borisov NN, Thorp JM. Prevalence of low sexual desire and hypoactive sexual desire disorder in a nationally representative sample of US women. Arch Intern Med 2008;168:1441–9. (Level II-3)
20. Orentreich N, Brind JL, Rizer RL, Vogelman JH. Age changes and sex differences in serum dehydroepiandrosterone sulfate concentrations throughout adulthood. J Clin Endocrinol Metab 1984;59:551–5. (Level II-3)
21. Rotter JI, Wong FL, Lifrak ET, Parker LN. A genetic component to the variation of dehydroepiandrosterone sulfate. Metabolism 1985;34:731–6. (Level III)
22. Crawford S, Santoro N, Laughlin GA, Sowers MF, McConnell D, Sutton-Tyrrell K, et al. Circulating dehydroepiandrosterone sulfate concentrations during the menopausal transition. J Clin Endocrinol Metab 2009;94: 2945–51. (Level II-2)
23. Labrie F, Belanger A, Cusan L, Gomez JL, Candas B. Marked decline in serum concentrations of adrenal C19 sex steroid precursors and conjugated androgen metabolites during aging. J Clin Endocrinol Metab 1997;82: 2396–402. (Level III)
24. Hornsby PJ. Biosynthesis of DHEAS by the human adrenal cortex and its age-related decline. Ann N Y Acad Sci 1995;774:29–46. (Level III)
25. Dennerstein L, Randolph J, Taffe J, Dudley E, Burger H. Hormones, mood, sexuality, and the menopausal transition. Fertil Steril 2002;77 (suppl 4):S42–8. (Level II-2)
26. Dennerstein L, Koochaki P, Barton I, Graziottin A. Hypoactive sexual desire disorder in menopausal women: a survey of Western European women. J Sex Med 2006; 3:212–22. (Level II-3)
27. Johannsson G, Burman P, Wiren L, Engstrom BE, Nilsson AG, Ottosson M, et al. Low dose dehydroepiandrosterone affects behavior in hypopituitary androgen-deficient women: a placebo-controlled trial. J Clin Endocrinol Metab 2002;87:2046–52. (Level I)
28. Zang H, Davis SR. Androgen replacement therapy in androgen-deficient women with hypopituitarism. Drugs 2008;68:2085–93. (Level III)
29. Davis AR, Castano PM. Oral contraceptives and libido in women. Annu Rev Sex Res 2004;15:297–320. (Level III)
30. Stimmel GL, Gutierrez MA. Sexual dysfunction and psychotropic medications. CNS Spectr 2006;11:24–30. (Level III)
31. Montejo-Gonzalez AL, Llorca G, Izquierdo JA, Ledesma A, Bousono M, Calcedo A, et al. SSRI-induced sexual dysfunction: fluoxetine, paroxetine, sertraline, and fluvoxamine in a prospective, multicenter, and descriptive clinical study of 344 patients. J Sex Marital Ther 1997; 23:176–94. (Level II-3)
32. Caruso S, Intelisano G, Lupo L, Agnello C. Premenopausal women affected by sexual arousal disorder treated with sildenafil: a double-blind, cross-over, placebo-controlled study. BJOG 2001;108:623–8. (Level II-3)
33. Basson R. Female sexual response: the role of drugs in the management of sexual dysfunction [published erratum appears in Obstet Gynecol 2001;98:522]. Obstet Gynecol 2001;98:350–3. (Level III)
34. Kingsberg SA, Janata JW. Female sexual disorders: assessment, diagnosis, and treatment. Urol Clin North Am 2007;34:497–506, v–vi. (Level III)
35. Graziottin A. Iatrogenic and post-traumatic female sexual disorder. In: Porst H, Buvat J, editors. Standard practice in sexual medicine. Malden (MA): Blackwell; 2006. p. 351–61. (Level III)
36. Kennedy SH, Rizvi S. Sexual dysfunction, depression, and the impact of antidepressants. J Clin Psychopharmacol 2009;29:157–64. (Level III)
37. Dunn KM, Cherkas LF, Spector TD. Genetic influences on variation in female orgasmic function: a twin study. Biol Lett 2005;1:260–3. (Level II-3)

38. Binik YM, Reissing E, Pukall C, Flory N, Payne KA, Khalife S. The female sexual pain disorders: genital pain or sexual dysfunction? Arch Sex Behav 2002;31:425–9. (Level III)

39. McCabe MP. Anorgasmia in women. J Fam Psychother 2009;20:177–97. (Level III)

40. Steege JF, Zolnoun DA. Evaluation and treatment of dyspareunia. Obstet Gynecol. 2009;113:1124–36. (Level III)

41. Latthe P, Mignini L, Gray R, Hills R, Khan K. Factors predisposing women to chronic pelvic pain: systematic review. BMJ 2006;332:749–55. (Systematic Review)

42. Risen CB. A guide to taking a sexual history. Psychiatr Clin North Am 1995;18:39–53. (Level III)

43. Hatzichristou D, Rosen RC, Derogatis LR, Low WY, Meuleman EJ, Sadovsky R, et al. Recommendations for the clinical evaluation of men and women with sexual dysfunction. J Sex Med 2010;7:337–48. (Level III)

44. Tomlinson J. ABC of sexual health: taking a sexual history. BMJ 1998;317:1573–6. (Level III)

45. Kingsberg S. Just ask! Talking to patients about sexual function. Sex Reprod Menopause 2004;2:199–203. (Level III)

46. Hensley PL, Nurnberg HG. SSRI sexual dysfunction: a female perspective. J Sex Marital Ther 2002;28(suppl 1): 143–53. (Level III)

47. Falcone T, Walters MD. Hysterectomy for benign disease. Obstet Gynecol 2008;111:753–67. (Level III)

48. Lalinec-Michaud M, Engelsmann F. Anxiety, fears and depression related to hysterectomy. Can J Psychiatry 1985; 30:44–7. (Level III)

49. Dennerstein L, Wood C, Burrows GD. Sexual response following hysterectomy and oophorectomy. Obstet Gynecol 1977;49:92–6. (Level III)

50. Jewett JG. Vaginal length and incidence of dyspareunia following total abdominal hysterectomy. Am J Obstet Gynecol 1952;63:400–7. (Level III)

51. Kilkku P, Gronroos M, Hirvonen T, Rauramo L. Supravaginal uterine amputation vs. hysterectomy. Effects on libido and orgasm. Acta Obstet Gynecol Scand 1983;62 147–52. (Level II-3)

52. Oldenhave A, Jaszmann LJ, Haspels AA, Everaerd WT. Impact of climacteric on well-being. A survey based on 5213 women 39 to 60 years old. Am J Obstet Gynecol 1993;168:772–80. (Level II-3)

53. Kilkku P. Supravaginal uterine amputation vs. hysterectomy. Effects on coital frequency and dyspareunia. Acta Obstet Gynecol Scand 1983;62:141–5. (Level II-3)

54. Virtanen H, Makinen J, Tenho T, Kiilholma P, Pitkanen Y, Hirvonen T. Effects of abdominal hysterectomy on urinary and sexual symptoms. Br J Urol 1993;72:868–72. (Level III)

55. Helstrom L, Lundberg PO, Sorbom D, Backstrom T. Sexuality after hysterectomy: a factor analysis of women's sexual lives before and after subtotal hysterectomy. Obstet Gynecol 1993;81:357–62. (Level II-3)

56. Rhodes JC, Kjerulff KH, Langenberg PW, Guzinski GM. Hysterectomy and sexual functioning. JAMA 1999;282: 1934–41. (Level II-2)

57. Zobbe V, Gimbel H, Andersen BM, Filtenborg T, Jakobsen K, Sorensen HC, et al. Sexuality after total vs. subtotal hysterectomy. Acta Obstet Gynecol Scand 2004; 83:191–6.(Level I)

58. Thakar R, Ayers S, Clarkson P, Stanton S, Manyonda I. Outcomes after total versus subtotal abdominal hysterectomy. N Engl J Med 2002;347:1318–25.(Level I)

59. Gimbel H, Zobbe V, Andersen BM, Filtenborg T, Gluud C, Tabor A. Randomised controlled trial of total compared with subtotal hysterectomy with one-year follow up results. BJOG 2003;110:1088–98. (Level I)

60. Kuppermann M, Summitt RL Jr, Varner RE, McNeeley SG, Goodman-Gruen D, Learman LA, et al. Sexual functioning after total compared with supracervical hysterectomy: a randomized trial. Total or Supracervical Hysterectomy Research Group. Obstet Gynecol 2005;105:1309–18. (Level I)

61. Rossouw JE, Anderson GL, Prentice RL, LaCroix AZ, Kooperberg C, Stefanick ML, et al. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative randomized controlled trial. Writing Group for the Women's Health Initiative Investigators. JAMA 2002; 288:321–33. (Level 1)

62. Gorodeski GI. Aging and estrogen effects on transcervical-transvaginal epithelial permeability. J Clin Endocrinol Metab 2005;90:345–51. (Level III)

63. Ayton RA, Darling GM, Murkies AL, Farrell EA, Weisberg E, Selinus I, et al. A comparative study of safety and efficacy of continuous low dose oestradiol released from a vaginal ring compared with conjugated equine oestrogen vaginal cream in the treatment of postmenopausal urogenital atrophy. Br J Obstet Gynaecol 1996; 103:351–8. (Level I)

64. Berman JR, Berman L, Goldstein I. Female sexual dysfunction: incidence, pathophysiology, evaluation, and treatment options. Urology 1999;54:385–91. (Level III)

65. Mac Bride MB, Rhodes DJ, Shuster LT. Vulvovaginal atrophy. Mayo Clin Proc 2010;85:87–94. (Level III)

66. Lara LA, Useche B, Ferriani RA, Reis RM, de Sa MF, de Freitas MM, et al. The effects of hypoestrogenism on the vaginal wall: interference with the normal sexual response. J Sex Med 2009;6:30–9. (Level III)

67. Suckling JA, Kennedy R, Lethaby A, Roberts H. Local oestrogen for vaginal atrophy in postmenopausal women. Cochrane Database of Systematic Reviews 2006, Issue 4. Art. No.: CD001500. DOI: 10.1002/14651858.CD001500. pub2. (Meta-analysis)

68. Notelovitz M, Funk S, Nanavati N, Mazzeo M. Estradiol absorption from vaginal tablets in postmenopausal women. Obstet Gynecol 2002;99:556–62. (Level I)

69. Bachmann GA. Influence of menopause on sexuality. Int J Fertil Menopausal Stud 1995;40(suppl 1):16–22. (Level III)

70. Berman JR, Berman LA, Toler SM, Gill J, Haughie S. Safety and efficacy of sildenafil citrate for the treatment of female sexual arousal disorder: a double-blind, placebo controlled study. Sildenafil Study Group. J Urol 2003;170:2333–8. (Level I)

71. Basson R, McInnes R, Smith MD, Hodgson G, Koppiker N. Efficacy and safety of sildenafil citrate in women with sexual dysfunction associated with female sexual arousal disorder. J Womens Health Gend Based Med 2002; 11:367–77.(Level I)

72. Basson R, Brotto LA. Sexual psychophysiology and effects of sildenafil citrate in oestrogenised women with acquired genital arousal disorder and impaired orgasm: a randomised controlled trial. BJOG 2003;110:1014–24. (Level I)

73. Nurnberg HG, Hensley PL, Heiman JR, Croft HA, Debattista C, Paine S. Sildenafil treatment of women with antidepressant-associated sexual dysfunction: a randomized controlled trial. JAMA 2008;300:395–404. (Level I)

74. Wilson SK, Delk JR 2nd, Billups KL. Treating symptoms of female sexual arousal disorder with the Eros-Clitoral Therapy Device. J Gend Specif Med 2001;4:54–8. (Level III)

75. Billups KL. The role of mechanical devices in treating female sexual dysfunction and enhancing the female sexual response. World J Urol 2002;20:137–41. (Level III)

76. Burger HG, Papalia MA. A clinical update on female androgen insufficiency--testosterone testing and treatment in women presenting with low sexual desire. Sex Health 2006;3:73–8. (Level III)

77. Davison SL, Bell R, Donath S, Montalto JG, Davis SR. Androgen levels in adult females: changes with age, menopause, and oophorectomy. J Clin Endocrinol Metab 2005;90:3847–53. (Level II-3)

78. Braunstein GD, Sundwall DA, Katz M, Shifren JL, Buster JE, Simon JA, et al. Safety and efficacy of a testosterone patch for the treatment of hypoactive sexual desire disorder in surgically menopausal women: a randomized, placebo-controlled trial. Arch Intern Med 2005;165: 1582–9. (Level I)

79. Braunstein GD. Safety of testosterone treatment in postmenopausal women. Fertil Steril 2007;88:1–17. (Level III)

80. Braunstein GD. Management of female sexual dysfunction in postmenopausal women by testosterone administration: safety issues and controversies. J Sex Med 2007; 4:859–66. (Level III)

81. Buster JE, Kingsberg SA, Aguirre O, Brown C, Breaux JG, Buch A, et al. Testosterone patch for low sexual desire in surgically menopausal women: a randomized trial. Obstet Gynecol 2005;105:944–52. (Level I)

82. Simon J, Braunstein G, Nachtigall L, Utian W, Katz M, Miller S, et al. Testosterone patch increases sexual activity and desire in surgically menopausal women with hypoactive sexual desire disorder. J Clin Endocrinol Metab 2005;90:5226–33. (Level I)

83. Davis SR, van der Mooren MJ, van Lunsen RH, Lopes P, Ribot C, Rees M, et al. Efficacy and safety of a testosterone patch for the treatment of hypoactive sexual desire disorder in surgically menopausal women: a randomized, placebo-controlled trial [published erratum appears in Menopause 2006;13:850]. Menopause 2006;13:387–96. (Level I)

84. Shifren JL, Davis SR, Moreau M, Waldbaum A, Bouchard C, DeRogatis L, et al. Testosterone patch for the treatment of hypoactive sexual desire disorder in naturally menopausal women: results from the INTIMATE NM1 Study [published erratum appears in Menopause 2007;14:157]. Menopause 2006;13:770–9.(Level I)

85. Davis SR, McCloud P, Strauss BJ, Burger H. Testosterone enhances estradiol's effects on postmenopausal bone density and sexuality. Maturitas 2008;61:17–26. (Level I)

86. Davis SR, Moreau M, Kroll R, Bouchard C, Panay N, Gass M, et al. Testosterone for low libido in postmenopausal women not taking estrogen. APHRODITE Study Team. N Engl J Med 2008;359:2005–17. (Level I)

87. Nachtigall L, Casson P, Lucas J, Schofield V, Melson C, Simon JA. Safety and tolerability of testosterone patch therapy for up to 4 years in surgically menopausal women receiving oral or transdermal oestrogen. Gynecol Endocrinol 2011;27:39–48. (Level I)

88. The role of testosterone therapy in postmenopausal women: position statement of The North American Menopause Society. North American Menopause Society. Menopause 2005;12:496–511; quiz 649. (Level III)

89. Wierman ME, Basson R, Davis SR, Khosla S, Miller KK, Rosner W, et al. Androgen therapy in women: an Endocrine Society Clinical Practice guideline. J Clin Endocrinol Metab 2006;91:3697–710. (Level III)

90. Seibel MM. Men, women, and testosterone: why did the FDA fail Intrinsa? Sex Reprod Menopause 2005;3:1–2. (Level III)

91. Goldstat R, Briganti E, Tran J, Wolfe R, Davis SR. Transdermal testosterone therapy improves well-being, mood, and sexual function in premenopausal women. Menopause 2003;10:390–8. (Level II-3)

92. Davis S, Papalia MA, Norman RJ, O'Neill S, Redelman M, Williamson M, et al. Safety and efficacy of a testosterone metered-dose transdermal spray for treating decreased sexual satisfaction in premenopausal women: a randomized trial. Ann Intern Med 2008;148:569–77. (Level I)

93. Lobo RA, Rosen RC, Yang HM, Block B, Van Der Hoop RG. Comparative effects of oral esterified estrogens with and without methyltestosterone on endocrine profiles and dimensions of sexual function in postmenopausal women with hypoactive sexual desire. Fertil Steril 2003;79: 1341–52. (Level I)

94. Labrie F, Archer D, Bouchard C, Fortier M, Cusan L, Gomez JL, et al. High internal consistency and efficacy of intravaginal DHEA for vaginal atrophy. Gynecol Endocrinol 2010;26:524–32. (Level I)

95. Sherwin BB. Use of combined estrogen-androgen preparations in the postmenopause: evidence from clinical studies. Int J Fertil Womens Med 1998;43:98–103. (Level III)

96. Barrett-Connor E, Timmons C, Young R, Wiita B. Interim safety analysis of a two-year study comparing oral

estrogen-androgen and conjugated estrogens in surgically menopausal women. Estratest Working Group. J Womens Health 1996;5:593–602. (Level III)

97. Urman B, Pride SM, Yuen BH. Elevated serum testosterone, hirsutism, and virilism associated with combined androgen-estrogen hormone replacement therapy. Obstet Gynecol 1991;77:595–8. (Level III)

98. Chiuve SE, Martin LA, Campos H, Sacks FM. Effect of the combination of methyltestosterone and esterified estrogens compared with esterified estrogens alone on apolipoprotein CIII and other apolipoproteins in very low density, low density, and high density lipoproteins in surgically postmenopausal women. J Clin Endocrinol Metab 2004;89:2207–13. (Level I)

99. van Kesteren PJ, Asscheman H, Megens JA, Gooren LJ. Mortality and morbidity in transsexual subjects treated with cross-sex hormones. Clin Endocrinol 1997;47: 337–42. (Level II-3)

100. Ness RB, Albano JD, McTiernan A, Cauley JA. Influence of estrogen plus testosterone supplementation on breast cancer. Arch Intern Med 2009;169:41–6. (Level II-2)

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1985–July 2010. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles. When reliable research was not available, expert opinions from obstetrician–gynecologists were used.

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I Evidence obtained from at least one properly designed randomized controlled trial.

II-1 Evidence obtained from well-designed controlled trials without randomization.

II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A—Recommendations are based on good and consistent scientific evidence.

Level B—Recommendations are based on limited or inconsistent scientific evidence.

Level C—Recommendations are based primarily on consensus and expert opinion.

Copyright April 2011 by the American College of Obstetricians and Gynecologists. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, posted on the Internet, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

Requests for authorization to make photocopies should be directed to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400.

The American College of Obstetricians and Gynecologists
409 12th Street, SW, PO Box 96920, Washington, DC 20090-6920

Female sexual dysfunction. Practice Bulletin No. 119. American College of Obstetricians and Gynecologists. Obstet Gynecol 2011; 117:996–1007.