

## Women's Sexual Desire—Disordered or Misunderstood?

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*A new model of women's sexual response moves the focus from spontaneous drive with its markers of sexual thoughts, fantasies, and conscious urge to be sexual to an inherently responsive cycle. The model reflects intimacy-based sexual motivation, processing of sexual stimuli to arousal, cognitive, and affective appraisal of that arousal. Sexual desire to continue the physical experience is accessed later. Providing that the outcome is emotionally and physically satisfying, emotional intimacy with the partner is increased. Any spontaneous sexual drive augments this intimacy-based cycle. Analysis of one or many breaks in the cycle has therapeutic implications.*

The many affective, cognitive, societal, and dyadic aspects of sexual motivation are well documented (Ellis, 1933; Everaerd, 1995; Freud, 1922; Hardy, 1964; Hatfield & Rapson, 1987; Mead, 1949; Moll, 1933; Pfaus, 1999; Singer & Toates, 1987). However, the emphasis has been on a further aspect, an innate, presumably biological, sexual urging. The markers of this aspect are sexual thoughts, sexual fantasies, and sexual neediness or hunger to experience the build up and release of sexual tension for both the physiological enjoyment of that process and the avoidance of negative feelings associated with its deprivation. This force—sexual desire—begins the traditional model of the human sexual response cycle of Masters and Johnson (1966), Kaplan (1979), and Lief (1977). This model has been accepted by both the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (1994) and by the laity, including those women in non clinical samples, one-third of whom self-diagnose as sexually dysfunctional because of their rare tendency to experience these markers of innate sexual desire.

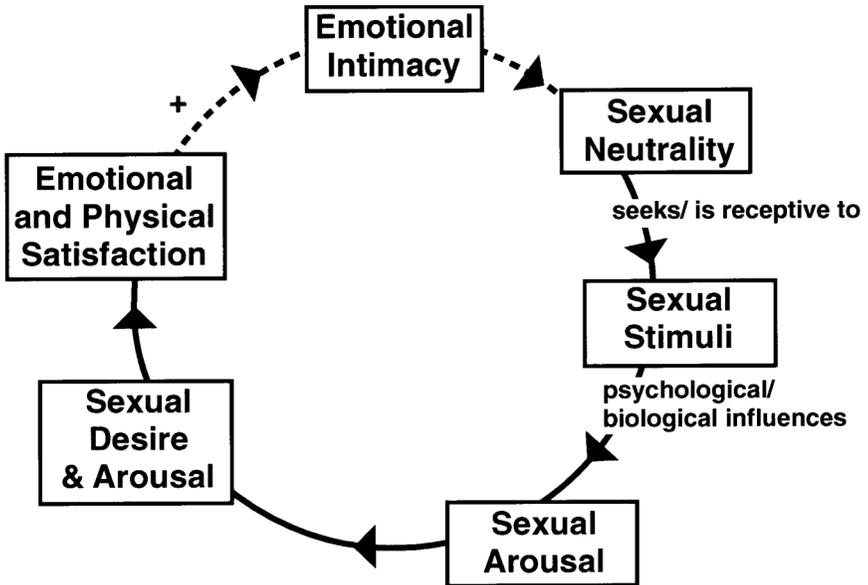
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Perhaps we should question the relevance or accuracy of these markers for women. Quantifying fantasies is problematic, because women may deliberately use fantasies to nurture their sexual desire to more easily attain orgasm (Lunde, Larson, Fog, & Garde, 1991). It could be argued that women with higher innate drive would not need to deliberately employ fantasy. Of premenopausal women over the age of 40 recruited from the community, almost 50% experienced spontaneous sexual thoughts once a month, less, or never. Comparative figures for peri- and postmenopausal groups with similar infrequency of sexual thoughts were 56% and 77%, respectively; in all, 144 women were assessed (Cawood & Bancroft, 1966). Frequency of autoerotic activities such as fantasy is more variable in women than in men when large nonclinical samples are surveyed (Laumann, Gagnon, Michael, & Michaels, 1994).

Disorder, in the medical sense, implies absence or malfunction of component parts. A model of women's sexual motivation is needed that encompasses the major component parts, innate (strictly sexual) desire included. Women give many reasons for being sexual. In addition to satisfying sexual hunger, these include enhanced emotional closeness and commitment, heightened sense of attraction and attractiveness, and the sharing of physical pleasures for the sake of sharing. So the woman may initiate or be receptive to a sexual experience beginning from a state of sexual neutrality, with the power or "motor" being the nurturing of intimacy with her partner. Whatever allows progression from feeling sexually neutral but motivated to "change," constitutes an effective stimulus. The traditional model does not include intimacy or stimuli nor does it show that the motivational force for women is very fragile and influenced, in turn, by the sexual experience itself. Thus, the components of the cycle that may foster a desire disorder include the level of emotional intimacy with the partner, the types of stimuli and their context, environmental triggers, and a large number of psychological and poorly understood biological factors allowing or disallowing arousal. Finally, the outcome of the experience may or may not be emotionally and physically positive, thereby "closing the loop". This alternative sexual response cycle, depicted in Figure 1, has been previously discussed (Basson, 2001), and may, along with models described later in this article, have relevance to the sexual response of both women and men.

Another aspect of cyclicity is the continuous feedback to the mind during the sexual experience. Sensory information, external and internal (the genital component of which may be poorly recognized by women, as shown by Laan, Everaerd, van der Velde, & Geer, 1995), is processed along with subjective appraisal of how exciting the stimulus is; the affect so produced and cognitive appraisal. This processing determines the woman's "arousability" (Bancroft, 1989).

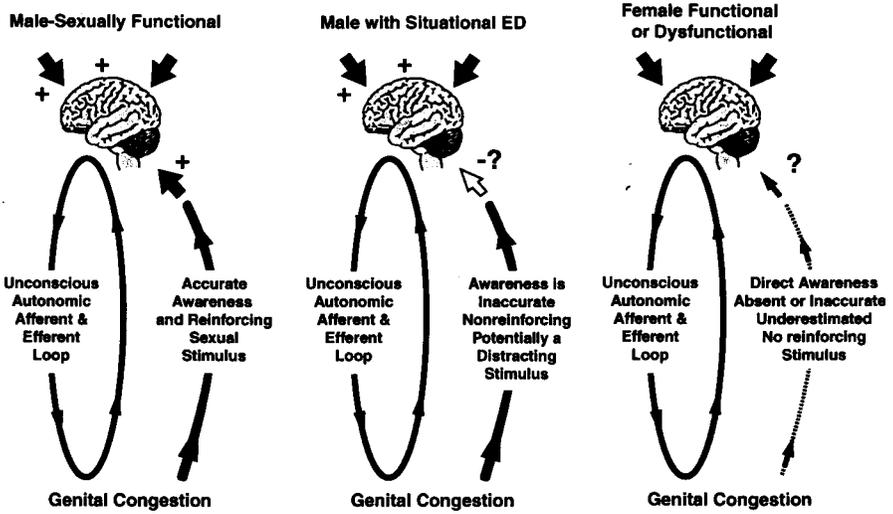


**FIGURE 1.** Alternative human sex response cycle beginning with sexual neutrality. The willingness to experience arousal and subsequent desire stems from a wish to increase emotional intimacy.

### CONFIRMATORY FEEDBACK FROM THE GENITALIA

As sexual stimuli are processed to allow mental sexual arousal and excitement, there is a simultaneous reduction of tonic inhibitory output, probably serotonergic (McKenna, 1999), from the limbic areas into the spinal cord and excitatory input, probably oxytocinergic (McKenna, 1999), then increases, producing the genital changes of the sex response. In sexually healthy men, the genital engorgement is assessed accurately and enjoyed; it confirms and compounds further sexual excitations. Men with chronic situational erectile dysfunction typically underrate penile engorgement; even if penile firmness is substantial, their reinforcing stimulus is missing. Furthermore, the perceived lack of adequate engorgement is itself a distraction, as shown in Figure 2.

In women, an accurate awareness of genital engorgement usually is lacking, so this direct confirmatory stimulus is absent. Indirect confirmation is possible through increasingly intense sexual pleasure derived from repeated, direct genital stimulation. However, the woman or partner may not be aware that her erectile tissue is not only in the shaft and body of the clitoris but extends deeply in the vulva under the labia and the superficial perineal muscles, and, variably, around the urethra.



**FIGURE 2.** Simultaneous sex response cycles. One is based on the need to enhance emotional intimacy and one is based on the need to satisfy sexual hunger. Sexual hunger facilitates sexual arousal by urging the woman to find stimuli and facilitates her mind's processing of the stimuli on to arousal.

## FEEDBACK FROM THE EMOTIONS

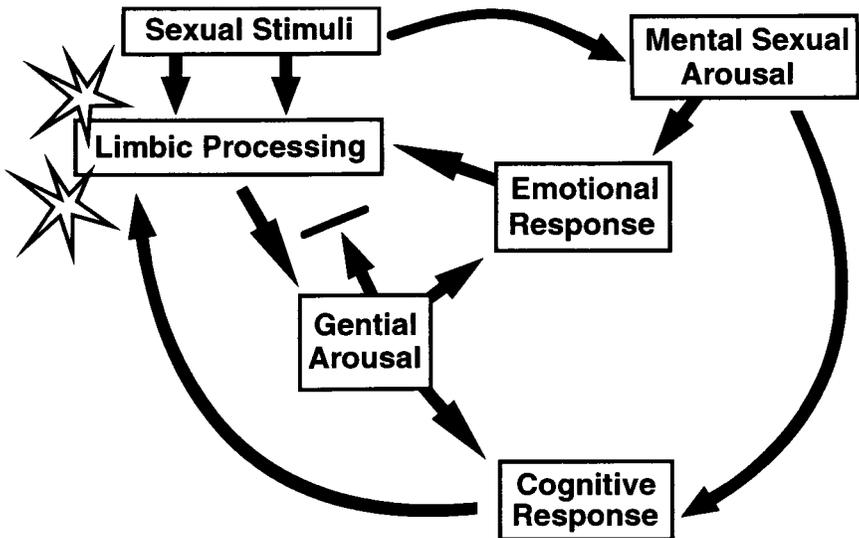
Another confirmatory or negative feedback to the limbic system comes from the emotional response. If the physiological changes of the bodily response are accompanied by negative emotions such as guilt, embarrassment, naïveté, shame, or self-consciousness, the feedback will be negative and will preclude the experience of subjective sexual excitement and the excitatory input to the spinal cord. So the woman who does not find genital stimulation subjectively exciting and emotionally positive will likely say that she feels "nothing." Thus, while clinicians consider promoting medication for more effective vasocongestion, they must also distinguish the subgroup of women who find the sexual experience mentally exciting but do not have a useful physical genital response from those who do not enjoy the congestive physical genital response that is nevertheless occurring.

Much attention has been paid to the role of anxiety in female sexual dysfunction (FSD). In laboratory studies, anxiety-provoking stimuli that precede erotic stimuli increase rather than decrease the subsequent objective vaginal blood flow (Palace & Gorzalka, 1992). Similarly, genital blood flow (but not subjective arousal) increases under "demand" situations for both women with and women without FSD (Laan, Everaerd, van Aanhoud, & Rebel, 1993). In this latter type of experiment, women are informed that their vaginal response is being monitored and that they should be as aroused as possible while watching an erotic video. Nonsexual anxiety can lead to an

increase in genital blood flow, although less than from erotic stimuli (Beggs, Calhoun, & Wolchik, 1987). Thus, the paradox is that genital blood flow increases rather than decreases with “anxiety.” However, laboratory-based “anxiety” is not necessarily comparable to the various types of anxiety in sexual contexts—the fears of accessing negative emotions, feeling sexually substandard, or being proven infertile or the dread of expected physical pain with intercourse.

### FEEDBACK FROM COGNITION

Cognitive assessment includes the woman's sexual self-concept (some, including Anderson and Cyranowski [1995], have referred to this as the woman's sexual schema). Whereas positive self-view will result in a woman's processing sexual stimuli into arousal and a willingness to engage in further activities, which promotes more arousal, negative self-view more likely will result in hesitancy, conservatism, and perhaps embarrassment. These feedback loops continue throughout the sexual experience, fine tuning not only the autonomic nervous response but also the affect, cognition, and mental excitement experienced see Figure 3. Higher levels of mental sexual excitement are capable of overcoming negative cognitive input.



**FIGURE 3.** Affective, cognitive, and genital feedback loops in the woman. These continue throughout the sexual experience, fine tuning not only the autonomic nervous response but the affect, cognition, and mental excitement experienced.

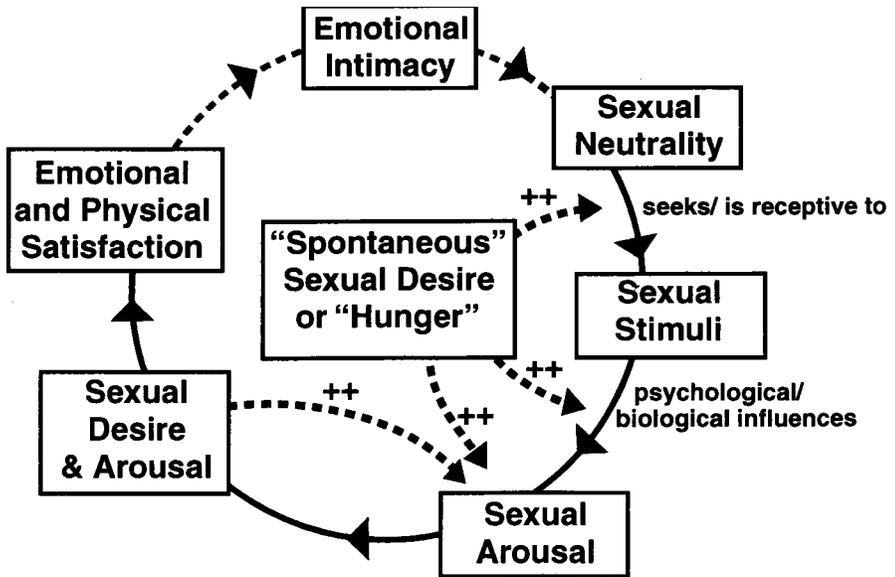
## SPONTANEOUS DESIRE

We may ask how the occasional, or for some women, frequent, spontaneous sexual hunger influences or replaces this intimacy-based cycle. Possible the two merge, as shown in Figure 4.

Innate, to some extent biological, urging prompts the seeking of sexual stimuli and facilitates arousal from those stimuli. Sometimes it appears to lead directly to a sense of spontaneous arousal, as in the traditional models of Masters and Johnson (1966) and Kaplan (1979).

ARE THESE ALTERNATIVE CYCLES REPRESENTATIVE  
OF WOMEN'S SEXUAL EXPERIENCE?

My experience over five years of sharing this cycle with women is that they sometimes, or very often, begin sexual experiences from a state of sexual neutrality. Women with and without FSD state that the cycles reflect their own experience. Of interest is that some male partners without male sexual dysfunction are intrigued that women can become sexual initially for reasons that are not strictly sexual. Other partners initially dismiss the concept as nonvalid, but express guarded acceptance of the concept with further reflecting on their own past heterosexual relationships. However, many state



**FIGURE 4.** Conscious feedback from genitalia: accurate and reinforcing in the sexually healthy man; inaccurate, nonreinforcing, and potentially distracting in the man with situational ED; often inaccurate, underestimated, or absent in the sexually functional and dysfunctional woman.

that it may only apply to women. Men who have experienced sexual dysfunction themselves relate to the concepts more frequently and more immediately, particularly the affective, cognitive, and genital feedback cycles.

### DO THE CYCLES EXPLAIN THE HIGH PREVALENCE OF APPARENT LOW SEXUAL DESIRE IN WOMEN?

There are many different sites of potential breakage. The “motor” behind the cycle is fragile. Emotional intimacy is precious but precarious, and damage to one site is followed by breaks at other sites. A common example seen in clinical practice is chronic low sexual desire as a consequence of past or present dyspareunia. The woman often avoids the logical solution of having sexual experiences other than intercourse and continues to have repeatedly negative outcomes from penetrative sex. As a result, her emotional intimacy is never strengthened by the negative experience. Rather, it is progressively reduced. She may feel resentful, used, or even abused. She avoids rather than seeks out useful sexual stimuli. Her psychological processing of any stimuli that she does seek out is influenced greatly by the expectation of a negative outcome and by the sense of inferiority and inadequacy. She focuses little on nonintercourse pleasuring and often to just to get the experience “over” convincing herself that she is doing it “for his sake.” Each component of the cycle is weakened or to revisit the concept underlying the word “disorder,” faulty, that is the emotional intimacy is weakened, the sexual stimuli are minimal or absent, the ability of stimuli to register arousal due to the negative psychological processing in the woman’s mind is defective, or the outcome is negative.

So the number of potential sites for breakage in the cycles may help explain the high prevalence of impaired desire, as may the fact that damage to one site will have a cascading effect on the rest of the cycle. Lack of a confirmatory sexual stimulus (see Figure 2) for women, compared to men, also may in part explain the frequency of low desire.

### IS THE COMMON COINCIDENCE OF FSAD AND HSDD EXPLAINED?

If one accepts that arousal often precedes desire, the coexistence of arousal and desire disorders is not unexpected. Inherent in these concepts is an expanded understanding of women’s sexual arousal, which has many components, including mental excitement, vulvar engorgement manifests as increased pleasure to genital stimulation, and for some a perceived throbbing or fullness. Additionally, there may be increased pleasure from nongenital stimulation, especially breast stimulation, and somatic changes of increased

muscle tension and temperature and breathing changes. Upward tenting of the vagina, manifested as a pleasurable pelvic “emptiness,” may be experienced. Increased vaginal elasticity and lubrication commonly is perceived only indirectly. When these components of arousal are not experienced, a truly sexual desire is not accessed. The woman remains for a limited period sexually motivated (for reasons of intimacy), but ultimately, with each disappointing experience motivation will lessen.

### DOES THIS CONCEPT OF BLENDED CYCLES HELP US ADDRESS CHANGES AT MENOPAUSE?

Premenopausally, the proportion of a woman’s desire that is triggered rather than spontaneous is influenced by her response to any drop in androgens, which may take place in her early 40s and continues postmenopausally. There is no linear relationship between levels of free testosterone or testosterone precursors and a woman’s sexual desire. However, it is often the woman who, in the past, had a strong sense of her own sexual need who notes loss of sexual desire, especially if she has experienced premature or sudden menopause, as with surgery. When desire is predominantly responsive, that is accessed via arousal, women may not notice any change from a drop in ovarian testosterone. However, if the drop negatively affects mental and physical sexual responsiveness, a diagnosis of androgen deficiency syndrome is then considered. Of note, a lowering of sex hormone binding globulin may cause a rise in free testosterone through the natural peri- and postmenopause.

### WHAT ARE THE THERAPEUTIC IMPLICATIONS OF THESE ALTERNATIVE CYCLES?

Rather than feeling overwhelmed, women are encouraged by the many areas in their cycle that may be addressed. The logic of a woman’s situation may appear highly therapeutic to her. She can relate to her complicated sexual cycle and accept that perhaps much of the “dysfunction” is not strictly to do with her. For example, it may become clear to the woman with chronic dyspareunia that she and her partner need help beyond pain management. The changes in a woman’s sexual response to a partner with chronic erectile dysfunction may become clearer to her. In this last example, perhaps a woman’s stimuli become hurried—the man perhaps urging too quick a progression to intercourse before his erection is lost. Her psychological processing could be affected by feeling of insecurity, unattractiveness, and by the knowledge of almost-certain negative outcome. Thus, many formerly effective stimuli may no longer arouse her. Such experiences can distance partners rather than bring them closer.

## MANDATORY BLEND OF MIND AND BODY

These models attempt to contradict the concept of sexual dysfunction polarized into either a physical or psychological cause and to replace it with an understanding that the function of mind and body are mandatorily blended so that physical and psychological etiological factors intertwine and compound rather than summate. We know very little about the biological underpinnings of women's desire. Broadly speaking, whereas testosterone, dopamine, and centrally acting noradrenaline are positive influences, prolactin, gamma amino buteric acid, and serotonin acting via most 5 hydroxytryptamine receptors type 2 and 3 are negative. To date, there has been little focus on the effects of such psychological factors as chronic or acute stress on the production of these various neurotransmitters and hormones. We have plenty of evidence, outside of sex, of the marked effects of stress on hormone production, immune function, and cell aging. We know how acutely a stressor will suppress gonadotropin-releasing hormone pulses, reducing gonadotropin output, and generate hypothalamic amenorrhea. Clearly, this is not an isolated phenomenon; its recognition is highlighted by an obvious marker, amenorrhea. We know that posttraumatic stress disorder (PTSD) is accompanied by diminished basal levels of hypothalamic pituitary adrenal (HPA) activity (Yehuda, Teicher, Trestman, Levengood, & Siever, 1996). Similarly, HPA hyporesponsiveness accompanies fibromyalgia (Crofford, Pillemer, & Kalogeras, 1994), chronic fatigue syndrome (Poteliakhoff, 1981), and chronic atopic dermatitis (Buske-Krischbaum, Jobst, & Psych, 1997). Furthermore, magnetic resonance imaging has shown that stress-related disorders such as recurrent depressive illness and PTSD are associated with atrophy of neurones in the hippocampus (McEwen & Magarinos, 1997). Much more information is needed of the effects of "stress" (being representative of psychological issues in general) perimenopausally and postmenopausally, with reference to the subsequent hormone output including HPA activity, the function of the limbic system, and the tertiary influences upon sexuality.

### ARE PREVIOUS MODELS AND CONCEPTS INCORPORATED IN THESE CYCLES?

I would suggest that Helen Singer Kaplan's "spontaneous desire triggered by biological events, including thoughts" and her "desire triggered by external events" are the two types of desire shown in Figure 4. The tripartite desire theorized by Levine (1988) is incorporated; I suggest that his spontaneous or "biological" drive is variably present. Levine's "willingness/motivation" causes the woman to seek out and/or be receptive to sexual stimuli, and her "wish" or cognitive appreciation of what is expected is one of the numerous factors that influences the processing of the sexual stimuli. Factors influencing whether sexual stimuli generate arousal are termed "arousability" by Whalen (1966)

and Bancroft (1989). The tight association of desire and arousal discussed by Laan et al. (1995) and Whalen (1966) is clearly incorporated. Spector, Carey, & Steinberg (1996) spoke of dyadic desire for sexual experience with a partner for the sake of increasing intimacy and for the physical experience itself. Similarly, the appetitive motivation of Singer and Toates (1987) offered a model in which the seeking of sexual stimuli was in order to experience pleasure rather than to avoid suffering, that is, deprivation of sexual expression. However, I would emphasize that the suffering may be related to the deprivation of emotional intimacy.

## CONCLUSION

A woman's sexual desire in longer-term relationships may be predominantly an emotional/intimacy-based entity, its biological underpinnings simply allowing sexual repercussions, both physical and subjective. These, in their turn, have powerful emotional meanings, thereby enhancing (or for a woman with desire problems, potentially diminishing) the effectiveness of sexual stimuli needed to trigger her inherently responsible desire. Other feedback loops, both cognitive and somatic, further modulate the processing of the stimuli on a moment-to-moment basis. Apparent spontaneous hunger for sexual expression can influence various sites of this cycle. However, it would appear that the cycle can be experienced repeatedly in a positive, healthy manner without the influence of conscious spontaneous hunger. The cycle, especially the power behind it, is highly vulnerable, partially accounting for the high frequency of women's "sexual desire disorder." This rather different appreciation of women's sexual desire appears to ring true for women both with and without desire problems; it also offers a number of therapeutic possibilities for those women labeled with desire disorder.

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