



No Simple Answer: The Question of Female Libido



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The discussion of female libido is a complex one due to the numerous factors that can influence it. Libido is sexual desire, an energy derived from primitive impulses. Sexual desire has biological underpinnings; however, psychosocial and context-related factors may mute biological influences.

Libido is subdivided into spontaneous and responsive elements (Table 1 and 2). Global loss of spontaneous desire is associated with androgen deficiency.

Sexual disinterest is associated with a loss of positive spontaneous desire; however, there may be:

- low grade anger,
- a lack of emotional intimacy, or
- poor sexual outcome, such as:
 - dyspareunia, or
 - erectile dysfunction.

Sexuality gradually declines over the decades and coincides with a significant decrease in total and free testosterone beginning in the early reproductive years.

Barbara's case

Barbara, a 53-year-old gravida 3, para 3 (G3P3), presents with complaints of reduced sexual desire and difficulty achieving orgasm.

Her last menstrual period was 18 months ago. Her hot flashes are manageable and she uses lubricants for her vaginal dryness. There is no dyspareunia.

History

Barbara has been married for 22 years, with no major relationship problems. She works full-time and she and her spouse are busy after work taking their children to various activities. There is very little time spent together alone. Spontaneous and responsive desire is present, though it is reduced.

Barbara is on no medications.

Options

Options were discussed with Barbara once in the past, along with an explanation of the normal decrease in sexual desire with increasing age. In addition, it was suggested that an effort be made to spend more quality time with her partner without the distraction of their children.

Androgen therapy was also discussed as an option; however, when Barbara was informed that estrogen replacement was necessary and that long-term data on the safety of androgens was lacking, she lost her interest in this therapeutic option.

Table 1

Libido: Spontaneous and responsive

Spontaneous desire

- Sexual thoughts
- Sexual dreams
- Sexual daydreams or fantasies
- Seeking erotic things (*i.e.*, books, films)

Responsive desire

Sexual desire triggered by:

- Caressing
- Erotic literature
- Erotic film
- Erotic memory
- Sensual talk
- Being found attractive

Table 2

Requirements for sexual desire

Spontaneous

- Absence of depression
- A finite amount of androgen
- Absence of major distraction

Responsive

- Triggers
- Rewarding outcome
- Emotional intimacy
- Absence of major distractions

Table 3

Medical causes of reduced libido

- Depression
- Medications:
 - Most antidepressants
 - Phenothiazine (increases prolactin)
 - Central acting β -blockers
 - Combined contraceptives
- Thyroid disease
- Prolactinoma

Hypoactive sexual desire disorder (HSDD) is low sexual desire that causes a woman distress without another identifiable cause (Table 3). The lifetime prevalence of HSDD is 11% according to the *Diagnostic Interview Schedule for the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III)*. HSDD is higher in women with surgical menopause compared to natural menopause.

Androgen physiology in women

A finite amount of androgen is required for normal female sexual desire and orgasm. The premenopausal ovary directly produces approximately one-third of androgens, the remainder are from peripheral conversion of precursors.

Sexuality gradually declines over the decades and coincides with a significant decrease in total and free testosterone beginning in the early reproductive years. A woman in her forties has half the circulating androgens of a woman in her 20s; however, mean androgen levels do not vary significantly between the years before and after menopause (ages 45 to 55 years).

The post-menopausal ovary continues to produce testosterone. Reduced estrogen levels decrease sex hormone binding globulin, increasing bioavailable androgen. As the ovary is responsible for approximately 50% of circulating androgens, bilateral oophorectomy, even after menopause, significantly reduces androgen levels.

Clinical evidence

Endogenous testosterone

Two large, rigorously controlled studies did not find a link between low sexual function and androgen levels; and low androgen levels were not associated with declines in sexual function during the menopausal transition. As no clear association can be made between sexual function and testosterone concentrations, it is not possible to establish total or free testosterone values that indicate a clinical deficiency state.

Exogenous testosterone

Retrospective control trials on exogenous testosterone therapy in post-menopausal women showed improved sexual desire, sexual responsiveness and frequency of sexual activity. Nine out of 10 studies used testosterone and estrogen, with progesterone in women with a uterus; therefore, the efficacy and safety of testosterone therapy without estrogen, in post-menopausal women is not established.

Clinical approach

Female androgen deficiency syndrome (FADS) can be insidious (decreasing androgens with age), or acute (bilateral oophorectomy, or ovarian destruction by chemo or radiation therapy). Acute and, to a lesser degree insidious, FADS leads to:

- global impairment of sexual function:
 - decreased or absent sexual desire/fantasy,
 - decreased or absent orgasm,
- loss of well-being/depression,
- loss of energy and
- diminished muscle tone.

Table 4

Clinical indications for androgen replacement in women

- Premature ovarian failure
- Symptomatic androgen deficiency due to iatrogenic menopause. Causes possibly due to:
 - Surgery
 - Chemotherapy
 - Irradiation
- Symptomatic androgen deficiency following natural menopause

As no relationship between endogenous androgen levels and sexual function has been established, androgen measurements do not evaluate an individual's needs. If a woman presents with reduced libido with no medical cause, positive responses to questions about spontaneous desire makes FADS unlikely.

Treating FADS

The decision to treat FADS is based on informed consent (*i.e.*, a lifestyle decision, not a medical necessity [Table 4]). Ensure there are no contraindications to androgen therapy (Table 5). Counselling includes the explanation that androgens are male hormones and if levels supersede the physiologic range, the following side-effects can occur:

- hirsutism,
- acne,
- deepening voice,
- temporal balding,
- cliteromegaly.

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Table 5

Contraindications to androgen therapy

- Severe acne
- Hirsutism
- Androgenic alopecia
- Pregnancy or lactation
- Known or suspected androgen-dependent neoplasia
- Breast or uterine cancer
- Cardiovascular disease
- Liver disease

Table 6

Available androgen therapy

Testosterone enanthate, 100 mg intramuscularly, q.4.weeks

- Indicated for "female frigidity"
- Intramuscular testosterone can result in superphysiologic levels immediately after administration


Testosterone undecanoate

- Indicated for male replacement at 120 mg q.d. (3 x 40 mg caps)
- Studies in women (off-label) use 40 mg q.d.

So, monitoring for androgen levels and negative changes in the lipid profile are recommended. It should be explained that long-term safety and efficacy data are limited. A woman needs to be informed if the product is to be used in an off-label fashion and documentation of the discussion is imperative (Table 6).

Estrogen replacement (with progesterone if a uterus is present) should be optimal prior to the addition of androgens. If there is no response to androgen therapy after three months, the medication should be discontinued.

Summary

Testosterone therapy candidates must be distressed by their decreased sexual desire and have no other identifiable cause. Androgen therapy is effective in the treatment of FADS; however, the long-term safety and efficacy is not established. 

As no relationship between endogenous androgen levels and sexual function has been established, androgen measurements do not evaluate an individual's needs.

Suggested reading

1. The Role of Testosterone Therapy in Postmenopausal Women: Position Statement of The North American Menopause Society. *Menopause* 2005; 12(5):497-511.
2. Alexander JL, Dennerstein L, Burger H, et al: Testosterone and Libido in Surgically and Naturally Menopausal Women. *Women's Health* 2006; 2(3):459-77.
3. Arlt W: Androgen Therapy in Women. *Eur J Endocrinol* 2006; 154(1):1-11.