# Anorgasmia

Anorgasmia is when an orgasm is absent, delayed, infrequent or lacks intensity despite being aroused. This disorder causes distress and affects your sexual relationships. Several medical, physical and psychological factors play a role in causing it.

# Overview

## What is anorgasmia?

Anorgasmia is when a person has difficulty or can't orgasm even if they're enjoying sex and it feels good to them. It also describes orgasms that aren't as strong or don't happen as frequently as you'd like. It's a form of sexual dysfunction that affects all genders. It can take a toll on your mental health, causing distress and anxiety, and can even interfere your relationships. Anorgasmia is also called orgasmic dysfunction.

occur after being aroused. It may feel like a release and involve bodily movements beyond your control. They can vary in duration and intensity. Some people need more sexual stimulation to have an orgasm, while others need less.

With anorgasmia, you can still have a desire for sex and feel pleasure. However, you may feel anguish or emotional distress because you can’t have an orgasm. Your healthcare provider can help determine the cause of anorgasmia and recommend treatment.

## Anorgasmia in women or people assigned female at birth (AFAB)

Anorgasmia in women or people assigned

- **Primary (or lifelong)**: You've never had an orgasm.
- **Secondary (or acquired)**: You were once able to have an orgasm but can't now. This is common with menopause.
- **Situational**: You can only reach orgasm in specific situations like with masturbation (self-stimulation).
- **General**: You don't reach orgasm in any situation, even when you feel aroused or excited.

Problems with orgasm increase as you age, but it can affect people of any age. Up to 15% of women or people AFAB report never having an orgasm.

Healthcare providers often classify anorgasmia in men or people assigned male at birth (AMAB) as a type of sexual dysfunction called delayed ejaculation or inhibited ejaculation. This causes problems with sexual performance and pleasure, often leading to anxiety and avoiding sex. Anorgasmia in men has two types:

- **Primary**: You've never had an orgasm or ejaculated for as long as you can remember.
- **Secondary**: You only orgasm or ejaculate under certain conditions.

Ejaculation is a complex process that involves hormones, nerves and organs, as well as your mental state. A disruption in any part of this process can interfere with your ability to orgasm.

# Who does it affect?

Anorgasmia can affect anyone. It’s most common after menopause in women or people

# Symptoms and Causes

## What are the symptoms of anorgasmia?

The main symptom of anorgasmia is not reaching sexual climax (orgasm). Other symptoms are delayed climaxing (it takes a long time to orgasm) or not feeling fulfillment from sexual climax.

# What causes anorgasmia?

Many factors can make reaching orgasm difficult. These factors can be physical, mental, emotional or medical (related to a disease or condition). In many cases, a combination of

## Medical and physical causes

- Age (especially women or people AFAB in menopause).
- Medical conditions like multiple sclerosis (MS).
- Medications, especially selective serotonin reuptake inhibitors (SSRIs).
- Surgeries on your genitals and organs near or connected to your reproductive system.
- Complications from cancer or radiation therapy.
- Pelvic floor dysfunction or pelvic trauma.
- Reliance on masturbation (you find that more satisfying).

- Congenital disorders (conditions you're born with) of the vagina or penis.

## Psychological causes

- Depression, stress or anxiety.
- Previous sexual abuse or assault.
- Cultural or religious factors.
- Being shy or unable to express yourself through sex.
- Lack of confidence.
- Relationship, trust or intimacy issues with your partner.

# Can low testosterone cause

Low testosterone may affect the ability to orgasm in men or people assigned male at birth (AMAB). It often has connections with erectile dysfunction, delayed ejaculation or similar problems. Other hormones, such as prolactin, can also affect sexual function in people who have a penis.

# Do SSRIs cause anorgasmia?

Yes, many SSRIs (selective serotonin reuptake inhibitors), often used to treat depression or anxiety, can affect sexual function. If you're taking this kind of medication, talk to your healthcare provider about your symptoms and discuss alternative medications. Some SSRIs are less likely to cause anorgasmia, and there are other types of antidepressants that may help also.

## Medications that may impact orgasm

In addition to SSRIs, other medications may affect your ability to orgasm. Some examples of

- Tricyclic antidepressants (TCAs).
- Monoamine oxidase inhibitors (MAOIs).
- Antipsychotic medications.
- Anti-mania medications.

Medications used to treat high blood pressure can also cause erectile dysfunction. Some antihistamines and decongestants can also cause erectile dysfunction or problems with ejaculation.

# Diagnosis and Tests

## How is anorgasmia diagnosed?

discussion about your sexual history. This discussion could shed light on reasons or underlying causes for sexual dysfunction. They may also perform an exam or tests like ultrasound or blood tests to check for underlying hormonal or medical conditions that could be part of the problem. Your provider may suggest a penile sensitivity test if that's a suspected factor.

Once an underlying cause is determined, many options are available to treat anorgasmia. Your provider may also refer you to a specialist (such as a gynecologist or urologist) who can help develop a treatment plan that addresses orgasmic disorders.

# How is anorgasmia treated?

It depends on the underlying cause. There's no one method that fits all cases, and treatment may involve a combination of approaches. Some treatments for anorgasmia include:

- Changing medications.
- Treating any underlying health issues.
- Learning self-stimulation (masturbation) techniques.
- Counseling or psychotherapy to address relationship issues, mental health conditions or past sexual trauma.
- Sex therapy to address sexual needs or underlying factors preventing climax.

- Introducing new stimuli to the relationship such as new techniques, sex toys and devices or erotic media.

## How long does it take to cure anorgasmia?

It depends on the cause. In the case of sex therapy or couples counseling, it may take several months to reach a point where orgasm feels possible. If medications are the likely cause, you have to allow time for the medication to leave your system (which could take weeks). The good news is that most people can orgasm again with proper treatment.

Find a Primary Care Provider

Schedule an Appointment

# Prevention

## Is anorgasmia preventable?

Anorgasmia can’t be prevented, but dealing with the cause of the orgasmic dysfunction can help you cope with the problem. Some of these general recommendations may help:

- Follow your healthcare provider’s treatment plan for any medical conditions.
- Communicate openly and honestly with your

- Get treatment for emotional or psychological issues.
- Get regular exercise and eat a healthy diet.

It’s common for people with this to feel embarrassed, shy or ashamed. If you feel this way, tell your healthcare provider. They can help you understand that this isn’t a rare problem or a cause for shame. They can also help you find resources or specialist experts with specific training and experience in treating sexual dysfunction and related issues.

# Outlook / Prognosis

## What's the outlook if I have

Anorgasmia can be upsetting and frustrating. It can impact intimacy with your partner and affect your self-esteem. It’s also extremely unlikely that you can solve this problem without proper medical care or guidance. Your healthcare provider can help you with anorgasmia so you can enjoy a fulfilling sex life.

# Living With

## When should I see my healthcare provider?

Talk to your healthcare provider if you have any concerns about your ability to orgasm. They can help you figure out why having an orgasm is

medical history, including your relationship with your partner. Don’t be afraid or embarrassed to seek treatment. It’s the best way to get to the root of the problem and enjoy pleasurable sex.

**A note from Cleveland Clinic**

Being unable to orgasm can be frustrating and upsetting. You’re not alone — many people seek treatment for orgasmic dysfunction. It’s nothing to be ashamed about. Your healthcare provider can help determine why you’re struggling and discuss potential solutions. This may mean talking to a counselor or sex therapist, or changing medications. With the right treatment, you can enjoy sex — and all the physical and emotional benefits — without worrying about reaching orgasm.

Medically Reviewed

**Last reviewed on 01/23/2023.**

Learn more about our editorial process.

## References

Appointments 216.444.6601

APPOINTMENTS & LOCATIONS

REQUEST AN APPOINTMENT

*Sexual Medicine*, 2024, **12**, qfae023
https://doi.org/10.1093/sexmed/qfae023
**Ejaculatory and Orgasmic Disorders**

# Assessment of the effect of cannabis use before partnered sex on women with and without orgasm difficulty

**Suzanne Mulvehill, MBA, BSW, PhD[1,2,*] and Jordan Tishler, MD[3,4,5]**

[1]International Institute of Clinical Sexology, Miami Shores, FL 33138, United States
[2]Female Orgasm Research Institute, Pompano Beach, FL 33062, United States
[3]Harvard Medical School, Boston, MA 02115, United States
[4]Department of Medicine, Division of General Medicine, MassGeneral Brigham Hospital, Boston, MA 02115, United States
[5]Association of Cannabinoid Specialists, Boston, MA 02445, United States

*Corresponding author. Email: info@femaleorgasmresearch.org

## Abstract

**Background:** Up to 41% of women face challenges achieving orgasm, a statistic unchanged for 50 years.
**Aim:** To evaluate the effect of cannabis use before partnered sex on women with and without difficulty achieving orgasm.
**Methods:** This observational study evaluated responses from female study participants relating to their demographics, sexual activities, mental well-being, cannabis usage, and orgasm-related questions from the Female Sexual Function Index (FSFI).
**Outcomes:** Outcomes included orgasm frequency, difficulty, and satisfaction related to cannabis use or lack of use before partnered sex, largely based on the FSFI orgasm subscale.
**Results:** Of the 1037 survey responses, 410 were valid and complete. Twenty-three surveys (5.6% returned) were excluded due to failure to meet the study's criteria. Of the valid surveys, most women (52%, n = 202) reported difficulty achieving orgasm during sexual activity with a partner. These women were primarily between 25 and 34 years of age (45%, n = 91); 75% identified their race as White (n = 152/202); 52% (n = 105) identified as LGBTQI+ (lesbian, gay, bisexual, transgender, queer/questioning, intersex, or other); and 82% (n = 165) were married or in a relationship. Among participants who experienced challenges in achieving orgasm, 72.8% (n = 147, $P < .001$) reported that cannabis use before partnered sex increased orgasm frequency, 67% stated that it improved orgasm satisfaction (n = 136, $P < .001$), and 71% indicated that cannabis use made orgasm easier (n = 143, $P < .001$). The frequency of cannabis use before partnered sex correlated with increased orgasm frequency for women who experienced difficulties achieving orgasm (n = 202, $P < .001$). The reasons for cannabis use before partnered sex resulted in a more positive orgasm response (n = 202, $P = .22$).
**Clinical Implications:** Cannabis may be a treatment for women with difficulty achieving orgasm during partnered sex.
**Strengths and Limitations:** The researchers examined the challenge of achieving orgasm and considered the covariates reported in the literature, including the FSFI orgasm subscale. The findings may not be generalizable to women who rarely or never use cannabis before sex, women who have never experienced an orgasm, or women who do not have female genitalia. Additionally, the specific type of cannabis used, its chemical composition, the quantity used, and whether or not the partner used cannabis were not assessed in this study.
**Conclusion:** Cannabis-related treatment appears to provide benefit to women who have female orgasm difficulties or dysfunction.

**Keywords:** female orgasmic dysfunction; female orgasmic disorder; orgasmic dysfunction; female orgasm difficulty; female sexual dysfunction; cannabis and sex; cannabis and female orgasm.

## Introduction

For nearly half a century, researchers have suggested the potential benefits of cannabis in treating female orgasmic dysfunction (FOD) and other sexual maladies.[1–4] Anecdotes and general sexuality research[4–7] suggest that cannabis could treat FOD. This formal investigation focuses on the influence of cannabis on FOD, including medical and recreational usage, regardless of chemical type, dosage, usage timing, and legal status.

FOD is a significant public health concern,[8,9] affecting up to 41% of women worldwide.[10] *ICD-11* classifies the condition as "orgasmic dysfunction." A paucity of treatments exists.[11,12]

Many studies suggest that cannabis can have positive effects on female orgasm,[1,2,5–7] such as enhancing intensity,[1,7,13–16] increasing frequency,[2,4,6,15,17] easing difficulty,[7,13] and improving quality.[2,6,13,15,17,18] Other studies reported possible cannabis inhibition on women's orgasms.[2,14,19] The dosage of cannabis appears to be important, as it exhibits a dose-dependent relationship to enhanced orgasm response.[2,5,20,21] When appropriately dosed, tetrahydrocannabinol (THC), the primary component of cannabis, can reduce anxiety,[22] potentially leading to improved orgasm and satisfaction during sexual encounters.[23] THC reduces activity in the amygdala and hippocampus, parts of the brain that store and react to trauma.[24] THC also inhibits neural activity in the prefrontal cortex,[25] central to high-level cognitive function, reflecting categories, rules, and cognitive control.[26] Does cannabis use before sex increase orgasm frequency, ease, or satisfaction in women who report orgasm difficulty?

## Methods

In addressing factors related to FOD during partnered sex, we used the term *difficulty* instead of *dysfunction* to reduce negative connotations and allow participants to express their experiences more freely. Quantitative research based on a within-study design was used in this study to establish a

**Received:** November 8, 2023. **Revised:** February 20, 2024. **Accepted:** March 12, 2024

cause-and-effect relationship and to test the hypothesis that cannabis helps women orgasm who have FOD. The study's survey questions on FOD aligned with the *ICD-11* as "etiological considerations associated with relationship factors" when defining orgasmic dysfunction.[27]

## Participants

We invited sexually active women who used cannabis to complete an anonymous uncompensated 41-question survey via Qualtrics software (Supplement 1) distributed from March 24 until November 18, 2022. *Sexually active* was defined as having sex with a partner within the last 30 days, which may have included a range of sexual activities. As outlined in the approved institutional review board application, participants acknowledged informed consent before beginning the survey. News of the opportunity to participate in the study was posted and promoted through social media and postcards. Relevant ID is an assignment to each participant enabled in the survey to flag duplicate surveys.

Participant eligibility was limited to those who were at least 18 years of age who had used cannabis and were involved in partnered sex within the last 30 days. Exclusions included pregnant women, those breastfeeding, and those who had used other recreational substances during the past month. Participants with other sexual issues were not excluded and had an opportunity to elaborate on such issues in the survey. Other exclusions from the analysis included incomplete surveys, surveys that indicated no use of cannabis before sex, and those that failed to indicate if the respondent had female genitalia.

## Measures

The FSFI[28] orgasm subscale evaluates orgasm frequency, ease, and satisfaction within the last 30 days, with each question having a slider scale of 5 choices. Orgasm frequency ranged from *almost always to always* to *almost never or never*, orgasm difficulty from *extremely difficult to impossible* to *not difficult*, and orgasm satisfaction from *very satisfied* to *very dissatisfied*. The same 3 questions and slider scale ranges were asked twice: *with cannabis* before partnered sex, followed by *without cannabis* before partnered sex.

The study evaluated demographic factors, relationship satisfaction, cannabis use behaviors, mental health diagnosis, prescription medication, sexual abuse history, and sexual behavior. Statistical tests provided analytic depth and breadth. Table 1 presents the demographic and clinical characteristics of the participants.

## Analysis

Data analysis occurred between November 20, 2022, and March 27, 2023. The researchers received 1037 survey responses. Forty percent (n = 417) failed to meet the inclusion criteria, and 210 were excluded for being incomplete, leaving 410 completed surveys. In addition, 23 surveys indicated that participants never used cannabis before sex or did not clearly state their gender. Thus, 94% (N = 387) of completed surveys constituted the primary source of data analyzed.

The grouped responses in reporting *yes* or *no* to the question related to orgasm difficulty during partnered sex determined FOD. Upon evaluation, we moved the responses of 17 women to the category that best reflected their orgasm response without cannabis before partnered sex. For example, we moved a woman's *no* response to orgasm difficulty to the *yes* category if a respondent stated that she *almost never or never* orgasmed without cannabis before partnered sex. As a result of this objective dichotomization, 52% (n = 202) of the participants were characterized as having FOD.

The study examined 202 women with FOD and all women with and without FOD (N = 387). The study first examined the participants with FOD, and if a statistically significant relationship existed with the use of cannabis before partnered sex, the analysis then turned to all study participants. The only exception to this methodology was for primary intake method, sexual abuse history, and mental health diagnosis. The measurement of these factors was for all women in the study despite the lack of statistical significance found among women with FOD.

The statistical test used in each analysis was based on 2 factors—the level of measurement and the number of treatments—with 3 statistical tests used overall: McNemar, 1-factor analysis of variance (ANOVA), and 1-sample *t*-test. The McNemar test is a nonparametric statistical test for a before-and-after design where a person is one's own control; each has a control and a treatment response. The McNemar test evaluated the paired responses to the FSFI orgasm subscale regarding orgasm frequency, ease, and satisfaction with and without cannabis use before sex.

For orgasm frequency, responses indicating *almost always or always*, *most times*, *sometimes*, and a *few times* were combined to represent *yes* to orgasm, while *almost never or never* represented *no* to orgasm. Among women with FOD (n = 202), responses fell into 4 categories: orgasm with and without cannabis (n = 121), orgasm with cannabis and no orgasm without cannabis (n = 58), no orgasm with cannabis and orgasm without cannabis (n = 7), and no orgasm with or without cannabis (n = 16).

For orgasm difficulty, *extremely difficult or impossible*, *very difficult*, *difficult*, and *slightly difficult* were combined to represent the *difficult* category, while *not difficult* represented the *not difficult* category. Among women with FOD (n = 202), responses fell into 4 categories: difficult with or without cannabis (n = 123), difficult with cannabis and not difficult without cannabis (n = 1), not difficult with cannabis and difficult without cannabis (n = 70), and not difficult with or without cannabis (n = 8). Table 2 represents these data.

For orgasm satisfaction, *very satisfied*, *moderately satisfied*, and *about equally satisfied and dissatisfied* were combined to represent the *satisfied* category, while *moderately dissatisfied* and *very dissatisfied* were combined to represent the *dissatisfied* category. Among women with FOD (n = 202), responses fell into 4 categories: satisfied with or without cannabis (n = 157), satisfied with cannabis and dissatisfied without cannabis (n = 34), dissatisfied with cannabis and satisfied without cannabis (n = 3), and dissatisfied with or without cannabis (n = 8).

A 1-sample *t*-test or 1-factor ANOVA was used when the measurements were independent with different subjects in each of the groups. The FSFI orgasm subscale, demographics, sexual behavior, mental health, and cannabis use behavior were analyzed.

For orgasm frequency, 2 represented *almost always or always* and 6 *almost never or never*. Orgasm frequency responses were grouped by scores 2 to 5 as *yes orgasm* and 6 as *no orgasm* with and without cannabis before sex. The *no cannabis* orgasm frequency score was subtracted from

**Table 1.** Demographics, sexual behavior, mental health, sexual abuse history, cannabis use behavior, and cannabis effect on orgasm.

| Characteristic | Women, No. (%) | | *P* value: cannabis effect on orgasm based on variable | |
|---|---|---|---|---|
| | With orgasm difficulty | With + without orgasm difficulty | With orgasm difficulty | With + without orgasm difficulty |
| No. | 202 | 387 | | |
| **Demographics** | | | | |
| Age, y | | | .683 | —[a] |
| 18-24 | 43 (21.3) | 76 (19.6) | | |
| 25-34 | 91 (45) | 181 (46.8) | | |
| 35-44 | 42 (21) | 83 (21.4) | | |
| 45-54 | 17 (8) | 28 (7.2) | | |
| 55-64 | 3 (1) | 11 (2.8) | | |
| ≥65 | 6 (3) | 8 (2.1) | | |
| Education | | | .704 | — |
| Less than high school diploma or GED | 4 (2) | 6 (1.6) | | |
| High school diploma or GED | 15 (7) | 22 (5.7) | | |
| Some college | 38 (19) | 74 (19.1) | | |
| Associate degree | 16 (8) | 34 (8.8) | | |
| Bachelor degree | 76 (30) | 149 (38.5) | | |
| Graduate degree | 53 (26) | 102 26.4) | | |
| Ethnicity | | | .437 | — |
| Asian | 6 (3) | 15 (3.9) | | |
| Black/African American | 10 (5) | 22 (5.7) | | |
| Hispanic | 19 (9) | 40 (10.3) | | |
| Multiracial | 6 (3) | 15 (3.9) | | |
| Native American | 3 (1) | 4 (0.8) | | |
| Pacific Islander | 1 (0) | 1 (0.3) | | |
| White/Caucasian | 152 (75) | 279 (72.1) | | |
| Other | 5 (2) | 11 (2.8) | | |
| Income, $ | | | .235 | — |
| <20 000 | 39 (19.3) | 62 (16) | | |
| 20 000-34 999 | 24 (11.9) | 54 (14) | | |
| 35 000-49 999 | 30 14.9) | 54 (16) | | |
| 50 000-74 999 | 49 24.3) | 94 24.3) | | |
| 75 000-99 999 | 27 13.4) | 55 14.2) | | |
| ≥100 000 | 33 16.3) | 68 17.6) | | |
| Relationship status | | | .141 | — |
| Single | 24 (11.9) | 45 (11.6) | | |
| Married | 67 (33.2) | 127 (32.8) | | |
| In a relationship | 98 (48.5) | 193 (49.9) | | |
| Divorced | 13 (5.4) | 6 (1.6) | | |
| Other | 0 | 16 (4.1) | | |
| Religion | | | .889 | — |
| Buddhist | 0 (0) | 2 (.50) | | |
| Christian (Catholic, Protestant, any denomination) | 25 (12.4) | 53 (13.7) | | |
| Hindu | 1 (.50) | 1 (.30) | | |
| Jewish | 11 (5.4) | 15 (3.9) | | |
| Muslim | 0 (0) | 2 (.50) | | |
| Sikh | 1 (.50) | 1 (.30) | | |
| I do not practice a religion | 152 (75.2) | 296 (76.5) | | |
| Other | 12 (5.9) | 17 (4.4) | | |
| Sexual orientation: LGBTQI+ | | | .898 | — |
| Yes | 105 (52) | 192 (49.6) | | |
| No | 93 (46) | 188 (48.6) | | |
| **Sexual behavior and relationship satisfaction** | | | | |
| Masturbation frequency | | | .620 | — |
| ≥1/d | 16 (7.9) | 31 (8.0) | | |
| 2-3/wk | 77 (38.1) | 136 (35.1) | | |
| 4-5/wk | 16 (7.9) | 33 (8.5) | | |
| Few times per month | 62 (45.5) | 117 (30.2) | | |
| Once every few months | 19 (9.4) | 45 (11.6) | | |
| I do not masturbate | 12 (.50) | 25 (6.5) | | |
| Sexual issues besides orgasm difficulty | | | — | — |
| Yes | 47 (23.3) | 75 (19.4) | | |
| No | 155 (76.7) | 312 (80.6) | | |

(*Continued*)

**Table 1.** Continued

| Characteristic | Women, No. (%) | | *P* value: cannabis effect on orgasm based on variable | |
|---|---|---|---|---|
| | With orgasm difficulty | With + without orgasm difficulty | With orgasm difficulty | With + without orgasm difficulty |
| Partnered sex frequency | | | .541 | .617 |
| ≥1/d | 11 (5.4) | 23 (5.9) | | |
| 2-3/wk | 83 (41.1) | 162 (41.9) | | |
| 4-5/wk | 21 (10.4) | 52 (13.4) | | |
| Few times per month | 79 (39.1) | 139 (35.9) | | |
| Once every few months | 8 (4.0) | 11 (2.8) | | |
| Relationship satisfaction | | | .606 | — |
| Very satisfied | 100 (49.6) | 221 (57.1) | | |
| Moderately satisfied | 59 (29.2) | 103 (26.6) | | |
| About equally satisfied and dissatisfied | 22 (10.9) | 32 (8.3) | | |
| Somewhat dissatisfied | 15 (7.4) | 19 (4.9) | | |
| Very dissatisfied | 3 (1.5) | 4 (1.0) | | |
| I am not in a partnered relationship | 3 (1.5) | 8 (2.1) | | |
| Sexual relationship status | | | .629 | — |
| In a sexual relationship with 1 person <10 y | 121 (59.9) | 226 (58.4) | | |
| In a sexual relationship with 1 person >10 y | 43 (21.3) | 87 (22.5) | | |
| Engaging in sex with >1 person | 34 (16.8) | 66 (17.1) | | |
| Not in a sexual relationship with 1 person | 4 (2.0) | 8 (2.1) | | |
| **Mental health, prescription drug use, sexual abuse history** | | | | |
| Mental health diagnosis | | | .164 | .004* |
| Yes | 129 (63.9) | 231 (59.7) | | |
| No | 73 (36.1) | 156 (40.3) | | |
| Mental health diagnosis type: ≥1 per person | | | — | — |
| ADHD | 16 (7.9) | 31 (8.0) | | |
| Anxiety disorder | 95 (47) | 172 (44.4) | | |
| Bipolar disorder | 12 (5.9) | 18 (4.7) | | |
| Depressive disorder | 86 (42.6) | 147 (38.0) | | |
| Obsessive compulsive disorder | 5 (2.5) | 8 (2.1) | | |
| PTSD | 40 (19.8) | 64 (16.5) | | |
| Other | 13 (6.4) | 24 (6.2) | | |
| Prescription drug use | | | .232 | .114 |
| Yes | 123 (60.9) | 215 (55.6) | | |
| No | 79 (39.1) | 172 (44.4) | | |
| Sexual abuse history | | | .206 | .003* |
| Yes | 74 (36.6) | 125 (32.3) | | |
| No | 128 (63.4) | 262 (67.7) | | |
| **Cannabis use behavior** | | | | |
| Cannabis use frequency before sex | | | <.001* | <.001* |
| Never | 0 (0) | 0 (0) | | |
| Rarely | 20 (9.9) | 36 (7.4) | | |
| Some of the time | 59 (29.2) | 122 (31.5) | | |
| About half the time | 36 (17.8) | 70 (18.1) | | |
| Most of the time | 64 (31.7) | 116 (30.0) | | |
| Every time | 23 (11.4) | 43 (11.1) | | |
| Length of time using cannabis before sex, y | | | | |
| <1 | 40 ((19.8) | 65 (16.8) | .797 | — |
| 1-3 | 71 (35.1) | 144 (37.2) | | |
| >3-5 | 30 (14.9) | 55 (14.2) | | |
| >5 | 60 (29.7) | 122 (31.5) | | |
| I do not use cannabis before partnered sex | 1 (.50) | 1 (.30) | | |
| Primary intake method | | | .524 | <.0001* |
| Smoking | 100 (49.5) | 183 (47.3) | | |
| Vaping oil | 33 (16.3) | 66 (17.1) | | |
| Vaporizing cannabis flower (weed) | 12 (5.9) | 26 (6.7) | | |
| Edibles | 48 23.8) | 95 (24.5) | | |
| Tincture | 5 (2.5) | 9 (2.3) | | |
| Topicals | 1 (.50) | 1 (.30) | | |
| Other | 3 (1.5) | 7 (1.8) | | |

(*Continued*)

**Table 1.** Continued

| Characteristic | Women, No. (%) | | *P* value: cannabis effect on orgasm based on variable | |
|---|---|---|---|---|
| | With orgasm difficulty | With + without orgasm difficulty | With orgasm difficulty | With + without orgasm difficulty |
| Primary reason for use | | | .022* | <.001* |
| Relaxation | 127 (62.9) | 233 (60.2) | | |
| Sleep | 11 (5.4) | 33 (8.4) | | |
| Sex | 21 (10.4) | 37 (9.6) | | |
| Other medical problem | 9 (4.5) | 19 (4.9) | | |
| Prescription | 20 (9.9) | 38 (9.8) | | |
| Pain | 14 (6.9) | 27 (7.0) | | |

Abbreviations: ADHD, attention-deficit/hyperactivity disorder; LGBTQI+, lesbian, gay, bisexual, transgender, queer/questioning, intersex, or other; PTSD, posttraumatic stress disorder. [a]Dashes indicate that the larger group was not analyzed when the *P* value was not significant for women with orgasm difficulty, except for mental health, prescription drug use, sexual abuse history, and primary intake method *Statistically significant.

**Table 2.** Paired FSFI orgasm subscale questions with and without cannabis before sex.

| Measure: how calculated | Cannabis used | No cannabis used | | $\chi^2$ (*P* value)[b] |
|---|---|---|---|---|
| Orgasm frequency: paired orgasm frequency response with and without cannabis before sex | | Orgasm | No orgasm | |
| | Orgasm | 121 (59.9) | 58 (28.7) | 38.5 (<.0001)* |
| | No orgasm | 7 (3.5) | 16 (7.0) | |
| Orgasm ease/difficulty: paired orgasm difficulty response with and without cannabis before sex | | Difficult | Not difficult | |
| | Difficult | 123 (60.9) | 1 (0.5) | 69.01 (<.0001)* |
| | Not difficult | 70 (34.7) | 8 (4.0) | |
| Orgasm satisfaction: paired orgasm satisfaction response with and without cannabis before sex | | Satisfied | Dissatisfied | |
| | Satisfied | 157 (77.7) | 34 (16.8) | 27.68 (<.0001)* |
| | Dissatisfied | 3 (1.4) | 8 (4.0) | |

Abbreviation: FSFI, Female Sexual Function Index. [a]Data are presented as No. (%). [b]Results per McNemar test: women with female orgasmic dysfunction (n = 202; *df* = 1). *Statistically significant.

the *with cannabis* score for each participant and totaled. A 1-sample *t*-test was performed.

For orgasm difficulty, 2 represented *extremely difficult or impossible* and 6 *not difficult*. Orgasm difficulty responses were grouped by scores 2 to 5 as *difficult* and 6 as *not difficult*. The orgasm difficulty score without cannabis was subtracted from the score with cannabis. One-factor ANOVA was performed.

For orgasm satisfaction, 2 represented *very satisfied*, 4 *about equally satisfied/dissatisfied*, and 6 *very dissatisfied*. Orgasm satisfaction responses were grouped by scores 2 and 3 representing *satisfied*, 4 *about equally satisfied/dissatisfied*, and 5 and 6 *dissatisfied*. The orgasm satisfaction score without cannabis was subtracted from the score with cannabis. One-factor ANOVA was performed.

Demographic data, sexual behavior, mental health, sexual abuse history, and cannabis use behavior were tested with 1-factor ANOVA. The exception was race, which was computed with a 1-sample t-test. A score from 2 to 6 was given to each participant's orgasm frequency response with and without cannabis before sex, with 2 representing *almost always or always* and 6 *almost never*. The *no cannabis* score was subtracted from the *with cannabis* score for each participant and computed per the variable.

# Results

## Orgasm subscale of the FSFI

Of women with FOD (n = 202), 28.7% (n = 58) experienced orgasm with cannabis and no orgasm without cannabis ($\chi^2 = 38.5$, $P < .0001$, McNemar); 34.7% (n = 70) reported that it was not difficult to orgasm with cannabis and difficult to orgasm without cannabis ($\chi^2 = 69.01$, $P < .001$, McNemar); and 16.8% (n = 34) indicated that they were satisfied with cannabis and dissatisfied without cannabis ($\chi^2 = 27.68$, $P < .0001$, McNemar). Table 2 presents the data.

## Orgasm frequency

Orgasm frequency increased 39.8% for women with FOD (n = 202), with 88.8% (n = 179) experiencing orgasm almost always, most times, sometimes, or a few times when using cannabis as compared with 63.3% (n = 128) without cannabis. Women with FOD who almost never or never orgasm decreased 68.9%, with 36.6% (n = 74) almost never or never experiencing orgasm without cannabis as compared with 11.4% (n = 23) with cannabis, Mean difference −1.50 with $t(201) = 14.68$ $P < .0001$ (1-sample t-test). Figure 1 presents the data. Comparative data revealing differences in women's orgasm frequency with and without FOD and with and without cannabis are presented in Figure 2.

## Orgasm difficulty

Orgasm difficulty decreased 35.4%, with 61.4% of women with FOD (124/202) reporting that orgasm was slightly difficult, difficult, very difficult, or extremely difficult or impossible with cannabis as compared with 95.1% (n = 192) without cannabis. Women who indicated that it was extremely difficult or impossible decreased 67.4%, with 22.8% (n = 46) finding it extremely difficult or impossible with cannabis vs 7.4% (n = 15) without cannabis, $F(1, 200) = 36.37$, $P < .0001$ (1-factor ANOVA). Figure 3 presents the data.

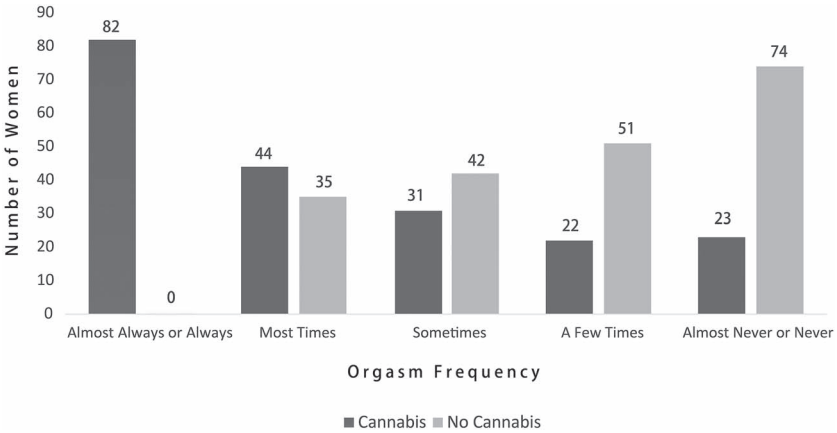



**Figure 1.** Measures for orgasm frequency during partnered sex for women with orgasm difficulty were fielded from March 23 to November 18, 2022, of women aged at least 18 years who reported orgasm frequency within the last 30 days with and without cannabis use before partnered sex. Orgasm frequency responses after cannabis and no cannabis were given a score from 2 (almost always) to 6 (almost never) for each participant. The difference of each score with cannabis and without cannabis was computed. If there is no cannabis effect, the mean of the scores should be zero. A negative score indicates a negative cannabis effect. The hypothesis that the mean of the differences was zero was tested per the 1-sample *t*-test. The mean difference was –1.50; $t(201) = -14.68$, $P < .0001$.

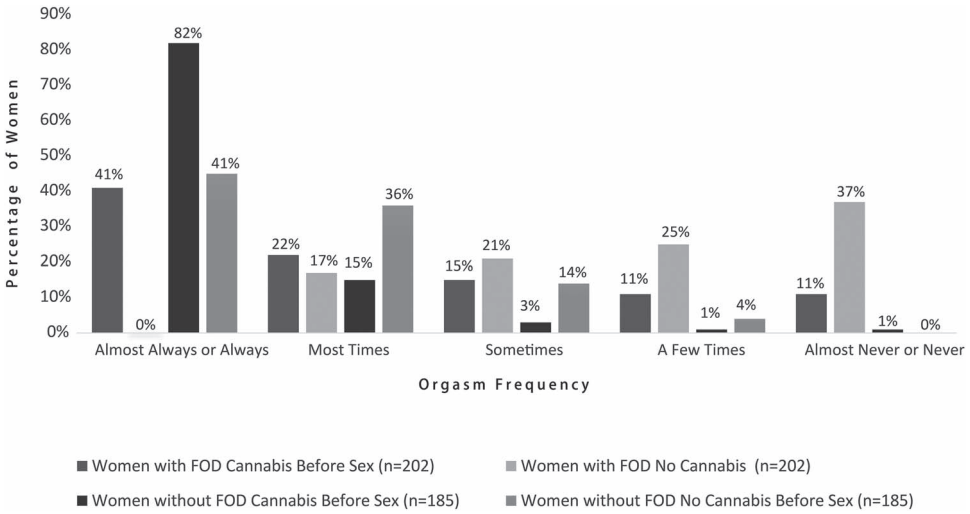



**Figure 2.** Measures for orgasm frequency during partnered sex for women with and without orgasm difficulty were fielded from March 23 to November 18, 2022, of women aged at least 18 years who reported orgasm frequency within the last 30 days with and without cannabis use before partnered sex. Respondents were asked, "Over the past month, when you USED cannabis BEFORE partnered sex, how often did you reach orgasm (climax)?" and "Over the past month, when you DID NOT USE cannabis BEFORE partnered sex, how often did you reach orgasm (climax)?" Possible responses included *almost always or always*, *most times (more than 1/2 of the time)*, *sometimes (about 1/2 of the time)*, *a few times*, and *almost never or never*. Comparative data are presented.

## Orgasm satisfaction

Orgasm satisfaction increased 97.7%, with 86.1% of women with FOD (174/202) reporting that they were very satisfied, moderately satisfied, or about equally satisfied and dissatisfied with cannabis as compared with 43.6% (n = 88) without cannabis. Women who reported that they were moderately or very dissatisfied decreased 75.4%, with 56.4% (n = 114) being moderately or very dissatisfied without cannabis vs 20.8% (n = 28) with cannabis, $F(2, 199) = 61.88$, $P < .0001$ (1-factor ANOVA). Figure 4 presents the data.

## Frequency of cannabis use and length of time using cannabis before sex

The frequency of cannabis use before sex increased orgasm frequency in women with FOD, $F(4, 197) = 5.13$, $P < .001$ (1-factor ANOVA). The largest group of women with FOD used cannabis most of the time (31.7%, 64/202). Those who responded *almost always or always* orgasmed 47% of the time. Table 1 presents the data.

The duration of a woman's history of using cannabis before sex was not statistically significant for women with FOD, $F(3, 197) = 0.34$, $P = .797$ (1-factor ANOVA). However, this result is relevant because women reported improved orgasm experiences regardless of how many months or years before sex they had used cannabis. The largest group of women (35%, 71/202) used cannabis before sex for 1 to 3 years.

## Reasons for cannabis use and intake method

Cannabis reason for use was statistically significant in creating a more positive orgasm characterization for all respondents, $F(5, 381) = 5.81$, $P < .001$ (1-factor ANOVA) and particularly for women with FOD, $F(5, 196) = 2.71$, $P = .022$ (1-factor

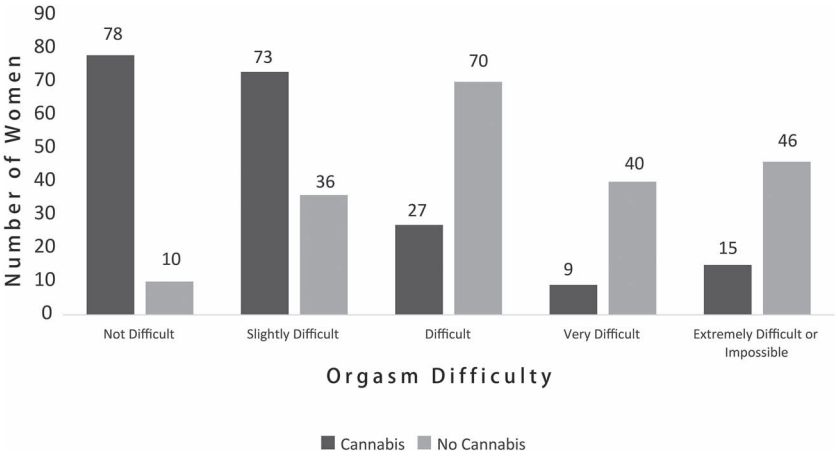



**Figure 3.** Measures for orgasm difficulty during partnered sex for women with orgasm difficulty were fielded from March 24 to November 18, 2022, of women who reported orgasm difficulty with and without cannabis use before partnered sex. Orgasm difficulty responses were given a score from 2 to 6, with *slightly difficult*, *difficult*, *very difficult*, and *extremely difficult* given a score of 2 to 5 and grouped as *difficult* and *not difficult* given a score of 6. A 1-factor analysis of variance was done to test the hypothesis of no differences among the means between the 2 categories tested. The result was $F(1, 200) = 36.37$, $P < .0001$.

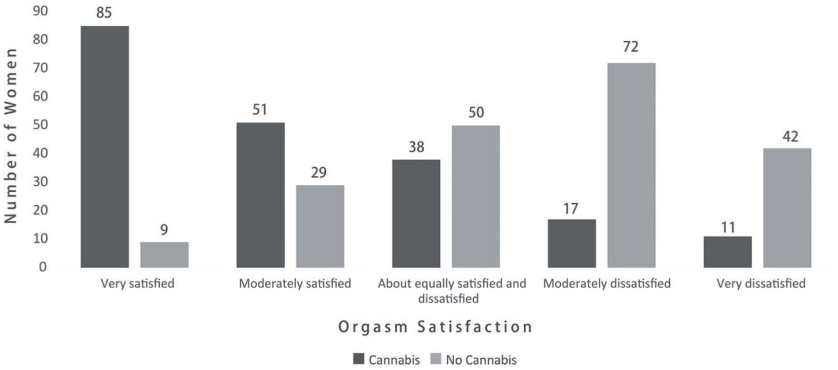



**Figure 4.** Orgasm satisfaction for women with orgasm difficulty with and without cannabis use before partnered sex. Measures for orgasm satisfaction during partnered sex for women with orgasm difficulty were fielded from March 24 to November 18, 2022, of women aged at least 18 years who reported orgasm satisfaction with and without cannabis use before partnered sex. Orgasm satisfaction responses were given a score from 2 to 6. Scores of 2 (very satisfied) and 3 (moderately satisfied) were combined into 1 category (satisfied; group 1); a score of 4 (about equally satisfied and dissatisfied) stayed the same (group 2); and scores of 5 (moderately dissatisfied) and 6 (very dissatisfied) were combined into 1 category (dissatisfied; group 3). The means are as follows: group 1, –2.0 (n = 136, SD = 1.2); group 2, 0.5 (n = 38, SD = 0.8); group 3, 0.1 (n = 28, SD = 0.7). A 1-factor analysis of variance was done to test the hypothesis of no differences among the means. The result was $F(2, 199) = 61.88$, $P < .0001$.

ANOVA). Survey participants selected from 5 categories when describing their orgasm experience: pain, relaxation, sleep, sex, and other medical problems, including the use of prescription medications. Of the women with FOD, 63% (127/202) reported using cannabis for relaxation.

Smoking was the foremost method of cannabis intake by all study participants (47.2%, 183/387). Among all women, this method of cannabis ingestion was significantly related to a more positive orgasm response, $F(4, 382) = 7.58$, $P < .0001$ (1-factor ANOVA). However, the same could not be said for women with FOD, $F(4, 197) = 0.80$, $P = .524$ (1-factor ANOVA).

## FOD and other sexual issues

The majority of women who reported FOD (n = 202) during partnered sex claimed the ability to orgasm in some situations but not others (71%, n = 144), and 77% (n = 155) had no other sexual difficulties. Of the 23% who identified other sexual difficulties, pain during sex was the number 1 sexual complaint. Of women without FOD (n = 185), 85% (n = 157) cited no other sexual challenges. Of the remaining 15% (n = 28) who reported other sexual challenges, the majority (57%, n = 16) experienced low sexual desire.

## Demographics, relationship status, and sexual behavior

When consumed before partnered sex, cannabis had no statistically significant relationship with age, race, income, education, religion, sexual orientation, sexual relationship status, relationship status, relationship satisfaction, sexual orientation, partnered sex frequency, or masturbation frequency. Among women with FOD (n = 202), women aged 25 to 34 years (45%), in a relationship (not married; 48.5%, 98/202), holding a bachelor degree (38%, 76/202), and earning between $50 000 and $75 999 (24%, 49/202) constituted the largest group.

The majority of women with FOD noted their sexual orientation as LGBTQI+ (lesbian, gay, bisexual, transgender, queer/questioning, intersex, or other (52%, n = 105) and their race as White (75%, n = 152), expressed being very satisfied in their partnered relationship (49.5%, n = 100) with 1 person

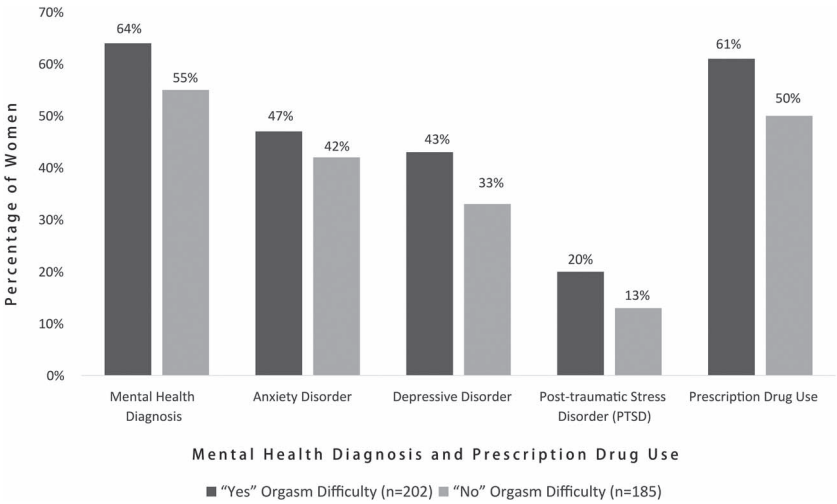



**Figure 5.** Measures for mental health diagnosis, diagnosis type, and prescription drug use for women who responded yes or no to orgasm difficulty were fielded from March 23 to November 18, 2022, of women aged at least 18 years who reported using cannabis before partnered sex. Respondents were asked, "Do you have a mental health diagnosis?" and if yes, respondents were asked the following question: "Please check your mental health diagnosis with the following options: anxiety disorder, depressive disorder, bipolar disorder, posttraumatic stress disorder, or other." Respondents were also asked, "Are you on any prescription medication?" (yes or no). Comparative raw data are presented.

<10 years (60%, n = 121), and indicated not practicing a religion (75%, n = 152).

## Mental health and prescription medication

Statistically significant differences were found among all women who had a mental health diagnosis (231/387) regarding a more positive orgasm response when using cannabis before sex, N = 387, $F(1, 385) = 8.60$, $P = .004$ (1-factor ANOVA). Of the women with FOD (n = 202), 64% (n = 129) had a mental health diagnosis, and 61% (n = 123) took prescription medication. On average, women with FOD had 24% more mental health issues, 52.6% more cases of posttraumatic stress disorder (PTSD), 29% more depressive disorders, 13% more anxiety disorders, and 22% more prescription drug use than women without FOD. Figure 5 presents the data.

## Sexual abuse history

A statistically high percentage (32.3%, 125/387) of women who had a history of sexual abuse, with or without FOD, reported experiencing a more positive orgasm response to cannabis before sexual activity, $F(1, 385) = 8.84$, $P = .003$ (1-factor ANOVA). Among women with FOD (n = 202), those with a history of sexual abuse (38.6%, n = 74) represented 32.9% more sexual abuse history than women without FOD (27.6%, 51/185). Figure 6 presents the data.

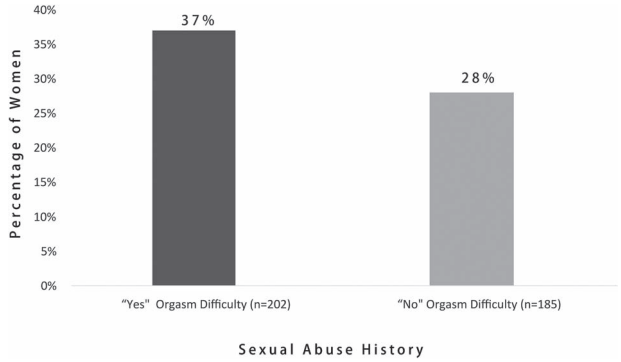



**Figure 6.** Measures for sexual abuse history for women who responded yes or no to orgasm difficulty were fielded from March 23 to November 18, 2022, of women aged at least 18 years who reported using cannabis before partnered sex. Respondents were asked, "Do you have a history of sexual abuse?" (yes or no). Comparative data are presented.

# Discussion

The results corroborate 50 years of anecdotal and learned speculation about cannabis helping women with FOD. The research found that cannabis use increased orgasm frequency, eased orgasm difficulty, and improved orgasm satisfaction. At the same time, the results opened new areas of discussion.

## Improved orgasm response for women with a mental health diagnosis

Women in this study with 1 or more mental health diagnoses who use cannabis before partnered sex have a more positive orgasm response regardless of whether they have FOD. These results are consistent with research finding that women with FOD experience high rates of mental health diagnoses,[8,29–32] prescription drug use,[33–35] or PTSD.[36–39] Women with anxiety disorders represented 44% (172/387) of women in this study. They were 3.5 times more likely to have FOD than nonanxious women.[40]

## Cannabis use resulted in more orgasms for sexual abuse survivors

Sexual abuse survivors' number 1 sexual complaint is orgasm difficulty,[41] coupled with high rates of PTSD.[42,43] This study revealed that 33% more women with sexual abuse histories reported FOD than women without FOD. THC in cannabis reduces activity in the hippocampus and amygdala,[22,24] the parts of the brain that store and react to traumatic memories.[44,45] This activity may play a role in extinguishing traumatic memories[24] and result in a more positive orgasm response.

### Cannabis and FOD treatment theories

Several theories explore why cannabis may be an effective treatment for FOD.[46] Dishabituation theory[46] proposes that cannabis lessens the routine of habits,[47] such as cognitive distraction, a known FOD cause,[48–53] and proposes that dishabituation may positively affect FOD.[46] Neuroplasticity theory proposes that some women learn to orgasm while using cannabis,[46] as seen in comments in this study and anecdotally.[13,54] Cannabis and endocannabinoids, the cannabinoids created by the human body, are increasingly recognized for their roles in neural development processes, including brain cell growth and neuroplasticity.[55]

Multimodal treatment theory proposes that women who use cannabis for any reason may lessen their FOD,[46] as noted by Kasman et al, who found that for each step up of cannabis use, female sexual dysfunction declined by 21%.[5] Amygdala reduction theory proposes that reduced amygdala activity can positively affect FOD.[46] Hypervigilance, anxiety, and PTSD are responses of the amygdala[45] and commonly impair sexual response.[38,56]

### Limitations

This study may not be generalizable to women who rarely use or do not use cannabis before sex, women who have never had an orgasm, or women who do not have female genitalia. The cultivar of cannabis was not a focus of this study, nor was the chemotype or amount of cannabis used. The partner's use or nonuse was also not evaluated in the study.

### Cannabis use before sex did not help all women

Cannabis use before sex did not help all women orgasm. Among survey respondents, 4% reported never having had an orgasm, even though they used cannabis before partnered sex.

## Conclusions

This study's findings support 50 years of speculation and research suggesting cannabis as a treatment for FOD. Key results of improved orgasm frequency, ease, and satisfaction for women reporting FOD during partnered sex show the potential of cannabis becoming a recognized treatment.

Cannabis use before partnered sex appears valuable to women who use it to treat FOD. Indeed, women with FOD experienced improvement during partnered sex regardless of the time frame of cannabis use.

Future research should focus investigations on the potential of cannabis as a treatment option for women who have been diagnosed with mental health diagnoses or have a sexual abuse history. Previous studies have indicated that women with these conditions experienced more positive orgasmic responses and greater satisfaction when using cannabis before sex. It is also essential to explore the use of cannabis as a treatment for primary anorgasmia, as well as for women who used to be able to orgasm but are now unable to do so. This study, with anecdotal reports and less focused studies, suggests that cannabis may improve orgasmic functioning in these women as well.[13,54] To further evaluate the effectiveness of cannabis in treating female sexual dysfunction and determine the appropriate dosage, it is recommended to conduct randomized controlled studies.

## Supplementary material

Supplementary material is available at *Sexual Medicine* online.

## Funding

None declared.

## Conflicts of interest

None declared.

## References

1. Dawley HH, Baxter AS, Winstead DK, Gay JR. An attitude survey of the effects of marijuana on sexual enjoyment. *J Clin Psychol*. 1979;**35**(1):212–217. https://doi.org/10.1002/1097-4679(197901)35:1<212::aid-jclp2270350135>3.0.co;2-k
2. Koff WC. Marijuana and sexual activity. *J Sex Res*. 1974;**10**(3):194–204. https://doi.org/10.1080/00224497409550850
3. Sun AJ, Eisenberg ML. Association between marijuana use and sexual frequency in the United States: a population-based study. *J Sex Med*. 2017;**14**(11):1342–1347. https://doi.org/10.1016/j.jsxm.2017.09.005
4. Moser A, Ballard SM, Jensen J, Averett P. The influence of cannabis on sexual functioning and satisfaction. *J Cannabis Res*. 2023;**5**(1):2. https://doi.org/10.1186/s42238-022-00169-2
5. Kasman AM, Bhambhvani HP, Wilson-King G, Eisenberg ML. Assessment of the association of cannabis on female sexual function with the Female Sexual Function Index. *Sex Med*. 2020;**8**(4):699–708. https://doi.org/10.1016/j.esxm.2020.06.009
6. Lynn BK, López JD, Miller C, Thompson J, Campian EC. The relationship between marijuana use prior to sex and sexual function in women. *Sex Med*. 2019;**7**(2):192–197. https://doi.org/10.1016/j.esxm.2019.01.003
7. Wiebe E, Just A. How cannabis alters sexual experience: a survey of men and women. *J Sex Med*. 2019;**16**(11):1758–1762. https://doi.org/10.1016/j.jsxm.2019.07.023
8. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States. *JAMA*. 1999;**281**(6):537–544. https://doi.org/10.1001/jama.281.6.537
9. Kontula O, Miettinen A. Determinants of female sexual orgasms. *Socioaffect Neurosci Psychol*. 2016;**6**(1):31624. https://doi.org/10.3402/snp.v6.31624
10. Laumann E, Nicolosi A, Glasser D, et al. Sexual problems among women and men aged 40–80 y: prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *Int J Impot Res* 2005;**17**:39–57. https://doi.org/10.1038/sj.ijir.3901250
11. Marchand E. Psychological and behavioral treatment of female orgasmic disorder. *Sex Med Rev*. 2021;**9**(2):194–211. https://doi.org/10.1016/j.sxmr.2020.07.007
12. Heiman JR, Meston CM. Empirically validated treatment for sexual dysfunction. *Annu Rev Sex Res*. 1997;**8**:148–194.
13. Lewis B. *The Sexual Power of Marijuana*. PH Wyden; 1970.
14. Palamar JJ, Acosta P, Ompad DC, Friedman SR. A qualitative investigation comparing psychosocial and physical sexual experiences related to alcohol and marijuana use among adults. *Arch Sex Behav*. 2016;**47**(3):757–770. https://doi.org/10.1007/s10508-016-0782-7
15. Goode E. Sex and marijuana. *Sexual Behavior*. 1972;**2**:45–51.
16. Bloomquist ER. Marijuana: social benefit or social detriment? *Calif Med*. 1967;**106**(5):346–353.
17. Weller RA, Halikas JA. Marijuana use and sexual behavior. *J Sex Res*. 1984;**20**(2):186–193. https://doi.org/10.1080/00224498409551216
18. Tart CT. *On Being Stoned: A Psychological Study of Marijuana Intoxication*. Science and Behavior Books; 1971.
19. Johnson SD, Phelps DL, Cottler LB. The association of sexual dysfunction and substance use among a community epidemiological sample. *Arch Sex Behav*. 2004;**33**(1):55–63. https://doi.org/10.1023/b:aseb.0000007462.97961.5a
20. Gorzalka BB, Hill MN, Chang SCH. Male-female differences in the effects of cannabinoids on sexual behavior and gonadal

hormone function. *Horm Behav*. 2010;**58**(1):91–99. https://doi.org/10.1016/j.yhbeh.2009.08.009
21. Lynn B, Gee A, Zhang L, Pfaus JG. Effects of cannabinoids on female sexual function. *Sex Med Rev*. 2020;**8**(1):18–27. https://doi.org/10.1016/j.sxmr.2019.07.004
22. Cuttler C, Spradlin A, McLaughlin RJ. A naturalistic examination of the perceived effects of cannabis on negative affect. *J Affect Disord*. 2018;**235**:198–205. https://doi.org/10.1016/j.jad.2018.04.054
23. Kosiba JD, Maisto SA, Ditre JW. Patient-reported use of medical cannabis for pain, anxiety, and depression symptoms: systematic review and meta-analysis. *Soc Sci Med*. 2019;**233**:181–192. https://doi.org/10.1016/j.socscimed.2019.06.005
24. Raymundi AM, da Silva TR, Sohn JMB, Bertoglio LJ, Stern CA. Effects of Δ9-tetrahydrocannabinol on aversive memories and anxiety: a review from human studies. *BMC Psychiatry*. 2020;**20**(1):420. https://doi.org/10.1186/s12888-020-02813-8
25. Egerton A, Allison C, Brett RR, Pratt JA. Cannabinoids and prefrontal cortical function: insights from preclinical studies. *Neurosci Biobehav Rev*. 2006;**30**(5):680–695. https://doi.org/10.1016/j.neubiorev.2005.12.002
26. Miller EK, Freedman DJ, Wallis JD. The prefrontal cortex: categories, concepts and cognition. *Philos Trans R Soc Lond B*. 2002;**357**(1424):1123–1136. https://doi.org/10.1098/rstb.2002.1099
27. *International Classification of Diseases*. 11th rev. World Health Organization; 2019/2021. https://icd.who.int/browse
28. Rosen C, Brown J, Heiman S, *et al*. 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. https://doi.org/10.1080/009262300278597
29. Basson R, Gilks T. Women's sexual dysfunction associated with psychiatric disorders and their treatment. *Womens Health*. 2018;**14**:174550651876266. https://doi.org/10.1177/1745506518762664
30. Leeners B, Hengartner MP, Rössler W, Ajdacic-Gross V, Angst J. The role of psychopathological and personality covariates in orgasmic difficulties: a prospective longitudinal evaluation in a cohort of women from age 30 to 50. *J Sex Med*. 2014;**11**(12):2928–2937. https://doi.org/10.1111/jsm.12709
31. Lutfey KE, Link CL, Rosen RC, Wiegel M, McKinlay JB. Prevalence and correlates of sexual activity and function in women: results from the Boston Area Community Health (BACH) survey. *Arch Sex Behav*. 2008;**38**(4):514–527. https://doi.org/10.1007/s10508-007-9290-0
32. Wåhlin-Jacobsen S, Kristensen E, Pedersen AT, *et al*. Androgens and psychosocial factors related to sexual dysfunctions in premenopausal women. *J Sex Med*. 2017;**14**(3):366–379. https://doi.org/10.1016/j.jsxm.2016.12.237
33. Conaglen HM, Conaglen JV. Drug-induced sexual dysfunction in men and women. *Aust Prescr*. 2013;**36**(2):42–45. https://doi.org/10.18773/austprescr.2013.021
34. Raffa RB, Bush PJ, Wertheimer AI. *How Prescription and Over-the-Counter Drugs Affect Sexual Performance*. CRC Press; 2021. https://doi.org/10.1201/9781003044260
35. Buffum J. Pharmacosexology update: prescription drugs and sexual function. *J Psychoactive Drugs*. 1986;**18**(2):97–106. https://doi.org/10.1080/02791072.1986.10471390
36. Letourneau EJ, Resnick HS, Kilpatrick DG, Saunders BE, Best CL. Comorbidity of sexual problems and posttraumatic stress disorder in female crime victims. *Behav Ther*. 1996;**27**(3):321–336. https://doi.org/10.1016/s0005-7894(96)80020-7
37. Bird ER, Piccirillo M, Garcia N, Blais R, Campbell S. Relationship between posttraumatic stress disorder and sexual difficulties: a systematic review of veterans and military personnel. *J Sex Med*. 2021;**18**(8):1398–1426. https://doi.org/10.1016/j.jsxm.2021.05.011
38. Yehuda R, Lehrner A, Rosenbaum TY. PTSD and sexual dysfunction in men and women. *J Sex Med*. 2015;**12**(5):1107–1119. https://doi.org/10.1111/jsm.12856
39. Kaplan PM. Post-traumatic stress syndrome and sexual dysfunction. *J Sex Marital Ther*. 1989;**15**(1):74–77. https://doi.org/10.1080/00926238908412849
40. Dunn KM, Croft PR, Hackett GI. Association of sexual problems with social, psychological, and physical problems in men and women: a cross sectional population survey. *J Epidemiol Community Health*. 1999;**53**(3):144–148. https://doi.org/10.1136/jech.53.3.144
41. Kinzl JF, Traweger C, Biebl W. Sexual dysfunctions: relationship to childhood sexual abuse and early family experiences in a nonclinical sample. *Child Abuse Negl*. 1995;**19**(7):785–792. https://doi.org/10.1016/0145-2134(95)00048-d
42. Chivers-Wilson KA. Sexual assault and posttraumatic stress disorder: a review of the biological, psychological and sociological factors and treatments. *Mcgill J Med*. 2020;**9**(2):111–118. https://doi.org/10.26443/mjm.v9i2.663
43. Powers A, Etkin A, Gyurak A, Bradley B, Jovanovic T. Associations between childhood abuse, posttraumatic stress disorder, and implicit emotion regulation deficits: evidence from a low-income, inner-city population. *Psychiatry*. 2015;**78**(3):251–264. https://doi.org/10.1080/00332747.2015.1069656
44. Bremner JD. Traumatic stress: effects on the brain. *Dialogues Clin Neurosci*. 2006;**8**(4):445–461. https://doi.org/10.31887/DCNS.2006.8.4/jbremner
45. Rabinak CA, Blanchette A, Zabik NL, *et al*. Cannabinoid modulation of corticolimbic activation to threat in trauma-exposed adults: a preliminary study. *Psychopharmacology*. 2020;**237**(6):1813–1826. https://doi.org/10.1007/s00213-020-05499-8
46. Mulvehill S, Tishler J. Four theories support a hypothesis that cannabis may be a treatment for female orgasmic disorder. *J Sex Med*. 2022;**19**(suppl 2):S209–S210. https://doi.org/10.1016/j.jsxm.2022.03.476
47. Drew WG, Miller LL. Cannabis: neural mechanisms and behavior—a theoretical view. *Pharmacology*. 1974;(11):12–32. https://doi.org/10.1159/000136463
48. Cuntim M, Nobre P. The role of cognitive distraction on female orgasm. *Theol Sex*. 2011;**20**(4):212–214. https://doi.org/10.1016/j.sexol.2011.08.001
49. Dove NL, Wiederman MW. Cognitive distraction and women's sexual functioning. *J Sex Marital Ther*. 2000;**26**(1):67–78. https://doi.org/10.1080/009262300278650
50. Adam F, Géonet M, Day J, Sutter PD. Mindfulness skills are associated with female orgasm? *Sex Relation Ther*. 2014;**30**(2):256–267. https://doi.org/10.1080/14681994.2014.986085
51. Moura CV, Tavares IM, Nobre PJ. Cognitive-affective factors and female orgasm: a comparative study on women with and without orgasm difficulties. *J Sex Med*. 2020;**17**(11):2220–2228. https://doi.org/10.1016/j.jsxm.2020.08.005
52. Tavares IM, Laan ETM, Nobre PJ. Cognitive-affective dimensions of female orgasm: the role of automatic thoughts and affect during sexual activity. *J Sex Med*. 2017;**14**(6):818–828. https://doi.org/10.1016/j.jsxm.2017.04.004
53. Tavares IM, Moura CV, Nobre PJ. The role of cognitive processing factors in sexual function and dysfunction in women and men: a systematic review. *Sex Med*. 2020;**8**(3):403–430. https://doi.org/10.1016/j.sxmr.2020.03.002
54. Urman, D. Interview with Carolyne Zinko (host): sexologist Diana Urman on using cannabis to achieve orgasm, and more. *Hash Podcast*. 2018. Accessed April 20, 2023. https://soundcloud.com/thehashpodcast/sexologist-diana-urman-talks-cannabis-and-coitus
55. Prenderville JA, Kelly ÁM, Downer EJ. The role of cannabinoids in adult neurogenesis. *Br J Pharmacol*. 2015;**172**(16):3950–3963. https://doi.org/10.1111/bph.13186
56. Corretti G, Baldi I. The relationship between anxiety disorders and sexual dysfunction. *Psychiatr Times*. 2007;**24**(9). Accessed April 20, 2023: https://www.psychiatrictimes.com/view/relationship-between-anxiety-disorders-and-sexual-dysfunction

# WEBINAR: CURRENT UROLOGIC MANAGEMENT OF FEMALE SEXUAL DYSFUNCTION (2020)

**June 11, 2020**

# OVERVIEW


## Course Director: Irwin Goldstein, MD

This course will teach the urologist and advanced practice provider the skills needed to better communicate with the female patient about her sexual health needs and better manage her sexual dysfunctions. The course will start with normal physiology and pathophysiology

Course summary

Available credit:

1.50 *AMA PRA Category 1 Credit™*

of the genitals including how to examine them under magnification in order to better understand sexual dysfunctions in women. Diagnostic tools and treatment strategies for the management of desire, arousal, orgasm and pain disorders including unusual arousal/orgasm issues such as persistent genital arousal disorder will be discussed.

Included in this course is an overview of to use the latest FDA approved drugs, off label options, devices such as CO2 fractional laser and surgical therapies. Women with distressing sexual health concerns should undergo biopsychosocial diagnostic evaluations to assess pathophysiology, starting with a history and physical with vulvoscopy. Risks and benefits of hormone therapy for pre- and post-menopausal women will be included, as well as information about neurologic issues affecting sexual function. Also discussed are risk factors for female sexual dysfunction and co-morbid conditions such as genitourinary syndrome of menopause, interstitial cystitis and sexual dysfunction, clitoral phimosis and previous genital surgeries including mid-urethral surgical slings. Women presenting with urologic

**1.50** Non-Physician Participation

Course opens:

**05/28/2020**

Course expires:

**06/11/2023**

Event starts:

**06/11/2020 - 7:00pm EDT**

Event ends:

**06/11/2020 - 8:30pm EDT**

Part of:

**Summer School Webinar Series (2020)**

concerns may, in fact, have sexual dysfunction as the primary issue.

**Please note this course is FREE to all AUA Members and is an exclusive member benefit. If you would like to become an AUA Member, we'd be happy to have you - think about all the great member benefits!**

Add to calendar:

Rating:

## TARGET AUDIENCE

- Urologists
- Residents
- Advanced Practice Providers (Nurse Practitioners and Physician Assistants)

## LEARNING OBJECTIVES

Upon completion of this activity, participants will be able to:

1. Associate basic science principles with physiology and pathophysiology of female sexual function and dysfunction.

2. Apply principles of history and physical examination to the woman with sexual dysfunction.
3. Characterize the consensus paradigms for identification of sexual problems in women, hypoactive sexual desire disorder, and persistent genital arousal disorder developed by the International Society for the Study of Women's Sexual Health.
4. Diagnose and treat woman with sexual dysfunction presenting in a community setting with FDA-approved and off label medical therapies including estrogen (and progesterone) and androgen therapies as well as centrally-acting drugs.
5. Identify when sexual pain should be treated surgically.

# PROGRAM

## Scientific Agenda

7:00-7:02 Welcome & Housekeeping - AUA

7:02-7:05 Webinar/Faculty Introduction – Irwin Goldstein, MD

7:05-7:20 Physiology, Pharmacology and Pathophysiology - Noel Kim, PhD

7:20-7:28 History and Physical Examination - Rachel Rubin, MD

7:28-7:40 Medical Management of Sexual Pain - Rachel Rubin, MD

7:40-7:52 Medical Management of HSDD - Ashley Winter, MD

7:52-8:15 Management of Arousal/Orgasm Disorders; Surgical Management of Sexual Pain Disorders - Irwin Goldstein, MD

8:15-8:30 Q & A

# VENUE

*Current Urologic Management of Female Sexual Dysfunction (2020)* will be held virtually on **Thursday, June 11 at 7 PM EST.**

******Instructions******

1. Click the "Register" tab.
2. If prompted, click “update your profile”. Otherwise, click “Take Course”.
3. Click “Start” under Live Webinar in the Course Progress pane.
4. Click "Join Webinar".

# FACULTY

## EDUCATION COUNCIL DISCLOSURES

Education Council Disclosures

AUA Office of Education Staff has nothing to disclose.

## COURSE DIRECTOR(S)

**Irwin Goldstein, MD has a financial relationship (Other) with AbbVie; financial relationship (Other) with Marius ; financial relationship (Other) with TRT; financial relationship (Other) with BTL; financial relationship (Independent contractor) with Pfizer; financial relationship (Independent contractor) with Strategic Science & Technologies; financial relationship (Independent contractor) with Ipsen; financial relationship (Other) with BTL; financial relationship (Other) with Tissue Genesis; financial relationship (Other) with Cynosure; financial relationship (Other) with Plethora; financial relationship (Independent contractor) with Morari; financial relationship (Other) with Endoceutics; financial relationship (Other) with AMAG Pharmaceuticals; financial relationship (Independent contractor) with International Society for Sexual Medicine; financial relationship (Independent contractor) with Trophikos; financial relationship (Independent contractor) with Coloplast Corporation.**

# FACULTY(S)

**Noel Kim, PhD has a financial relationship (Independent contractor) with San Diego Sexual Medicine; financial relationship (Independent contractor) with San Diego Sexual Medicine; financial relationship (Independent contractor) with Strategic Science and Technologies; financial relationship (Independent contractor) with Sprout Pharmaceuticals; financial relationship (Independent contractor) with Strategic Science and Technologies; financial relationship (Independent contractor) with Sprout Pharmaceuticals.**

**Rachel Rubin, MD has a financial relationship (Other) with**

**IPSEN; financial relationship (Other) with Endoceutics ; financial relationship (Other) with IPSEN; financial relationship (Other) with Endoceutics ; financial relationship (Other) with Bayer Healthcare; financial relationship (Other) with Abbvie; financial relationship (Other) with Bayer Healthcare; financial relationship (Other) with Abbvie.**

**Ashley Winter, MD has no relevant financial relationships to disclose at this time.**

# ACCREDITATION

### ACCREDITATION:

The American Urological Association (AUA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

### CREDIT DESIGNATION:

The American Urological Association designates this live activity for a maximum of 1.50 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### OTHER LEARNERS:

The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for *AMA PRA Category 1 Credit™*.

## EVIDENCE BASED CONTENT:

It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

## AUA DISCLOSURE POLICY:

All persons in a position to control the content of an educational activity (i.e., activity planners, presenters, authors) are required to disclose to the provider any relevant financial relationships with any commercial interest. The AUA must determine if the individual's relationships may influence the educational content and resolve any conflicts of interest prior to the commencement of the educational activity. The intent of this disclosure is not to prevent individuals with relevant financial relationships from participating, but rather to provide learners information with which they can make their own judgments.

## RESOLUTION OF IDENTIFIED CONFLICT OF INTEREST:

All disclosures will be reviewed by the AUA Conflict of Interest (COI) Review Work Group for identification of conflicts of interest. The AUA COI Review Work Group, working with the program directors and/or editors, will document the mechanism(s) for management and resolution of the conflict of interest and final approval of

the activity will be documented prior to implementation. Any of the mechanisms below can/will be used to resolve conflict of interest:

- Peer review for valid, evidence-based content of all materials associated with an educational activity by the course/program director, editor, and/or AUA COI Review Work Group.
- Limit content to evidence with no recommendations
- Introduction of a debate format with an unbiased moderator (point-counterpoint)
- Inclusion of moderated panel discussion
- Publication of a parallel or rebuttal article for an article that is felt to be biased
- Limit equipment representatives to providing logistics and operation support only in procedural demonstrations
- Divestiture of the relationship by faculty

### OFF-LABEL OR UNAPPROVED USE OF DRUGS OR DEVICES:

The audience is advised that this continuing medical education activity may contain reference(s) to off-label or unapproved uses of drugs or devices. Please consult the prescribing information for full disclosure of approved uses.

---

# AUA PARTICIPANT INFORMATION AND POLICIES

### DISCLAIMER:

The opinions and recommendations expressed by faculty, authors and other experts whose input is included in this program are their own and do not necessarily represent the viewpoint of the AUA.

### AUDIO, VIDEO AND PHOTOGRAPHIC EQUIPMENT:

The use of audio, video and other photographic recording equipment by attendees is prohibited inside AUA meetings.

### REPRODUCTION PERMISSION:



### SPECIAL ASSISTANCE/DIETARY NEEDS:

The AUA complies with the Americans with Disabilities Act §12112(a). If any participant is in need of special assistance or has any dietary restrictions, please see the registration desk.

## AVAILABLE CREDIT

**1.50** *AMA PRA Category 1 Credit™*

**1.50** Non-Physician Participation

# REGISTER/TAKE COURSE

**Please login or register to take this course.**

To join the webinar:

1. Click on the **TAKE COURSE** button.
2. Click “Start” under Live Webinar in the Course Progress pane.
3. Click "Join Webinar".

ACOG | Clinical
The American College of Obstetricians and Gynecologists

# Female Sexual Dysfunction

Practice Bulletin | Number 213 | July 2019

**ABSTRACT:** Female sexual dysfunction encompasses various conditions that are characterized by reported personal distress in one or more of the following areas: desire, arousal, orgasm, or pain **1** . Although female sexual dysfunction is relatively prevalent, women are unlikely to discuss it with their health care providers unless asked **2** , and many health care providers are uncomfortable asking for a variety of reasons, including a lack of adequate knowledge and training in diagnosis and management, inadequate clinical time to address the issue, and an underestimation of the prevalence **2** . The purpose of this document is to provide an overview of female sexual dysfunction, to outline updated criteria for diagnosis, and to discuss currently recommended management strategies based on the best available evidence.

Log In

**Nonmembers: Subscribe now to access exclusive ACOG Clinical content, including:**

ACOG Clinical is designed for easy and convenient access to the latest clinical guidance for patient care. Developed with members', physicians', and women's health care professionals' needs in mind, user-friendly features include:

- Easy, advanced search function to find the most relevant guidance
- Enhanced document presentation
- Advanced features and functionality

You'll find clinical content written and peer reviewed by experts and valuable information that spans guidance on the diagnosis and management of the full spectrum of obstetric and gynecological conditions and clinical management issues.

**Note for Life Fellows:** Annual membership dues are waived but there is a discounted annual subscription fee of $95 for access to publications such as the Green Journal, Practice Bulletins, and Committee Opinions. Individual subscriptions include print and online access. Subscribe today.

Subscribe

American College of Obstetricians and Gynecologists
409 12th Street SW, Washington, DC 20024-2188

# Female sexual dysfunction



## Diagnosis

To diagnose female sexual dysfunction, your doctor may:

- **Discuss your sexual and medical history.** You might be uneasy talking with your doctor about

such personal matters, but your sexuality is a key part of your well-being. The more upfront you can be about your sexual history and current problems, the better your chances of finding an effective way to treat them.

- **Perform a pelvic exam.** During the exam, your doctor checks for physical changes that affect your sexual enjoyment, such as thinning of your genital tissues, decreased skin elasticity, scarring or pain.
- **Order blood tests.** Your doctor may recommend blood tests to check for underlying health conditions that might contribute to sexual dysfunction.

Your doctor may also refer you to a counselor or therapist specializing in sexual and relationship problems.

## Treatment

Keep in mind that sexual dysfunction is a problem only if it bothers you. If it doesn't bother you, there's no need for treatment.

Because female sexual dysfunction has many possible symptoms and causes, treatment varies. It's important for you to communicate your concerns, as well as to understand your body and its normal sexual response. Also, your goals for your sex life are important for choosing a treatment and evaluating whether or not it's working for you.

Women with sexual concerns most often benefit from a combined treatment approach that addresses medical as well as relationship and emotional issues.

## Nonmedical treatment for female sexual dysfunction

To treat sexual dysfunction, your doctor might recommend that you start with these strategies:

- **Talk and listen.** Open communication with your partner makes a world of difference in your se

satisfaction. Even if you're not used to talking about your likes and dislikes, learning to do so and providing feedback in a nonthreatening way sets the stage for greater intimacy.

- **Practice healthy lifestyle habits.** Limit alcohol — drinking too much can blunt your sexual responsiveness. Be physically active — regular physical activity can increase your stamina and elevate your mood, enhancing romantic feelings. Learn ways to decrease stress so you can focus on and enjoy sexual experiences.
- **Seek counseling.** Talk with a counselor or therapist who specializes in sexual and relationship problems. Therapy often includes education about how to optimize your body's sexual response, ways to enhance intimacy with your partner, and recommendations for reading materials or couples exercises.
- **Use a lubricant.** A vaginal lubricant may be helpful during intercourse if you have vaginal dryness or pain during sex.

- **Try a device.** Arousal may be enhanced with stimulation of the clitoris. Use a vibrator to provide clitoral stimulation.

## Medical treatment for female sexual dysfunction

Effective treatment for sexual dysfunction often requires addressing an underlying medical condition or hormonal change. Your doctor may suggest changing a medication you're taking or prescribing a new one.

Possible treatments for female sexual dysfunction might include:

- **Estrogen therapy.** Localized estrogen therapy comes in the form of a vaginal ring, cream or tablet. This therapy benefits sexual function by improving vaginal tone and elasticity, increasing vaginal blood flow and enhancing lubrication.

  The risks of hormone therapy may vary depending on your age, your risk of other healt

issues such as heart and blood vessel disease and cancer, the dose and type of hormone and whether estrogen is given alone or with a progestin.

Talk with your doctor about benefits and risks. In some cases, hormonal therapy might require close monitoring by your doctor.

- **Ospemifene (Osphena).** This medication is a selective estrogen receptor modulator. It helps reduce pain during sex for women with vulvovaginal atrophy.
- **Androgen therapy.** Androgens include testosterone. Testosterone plays a role in healthy sexual function in women as well as men, although women have much lower levels of testosterone.

  Androgen therapy for sexual dysfunction is controversial. Some studies show a benefit for women who have low testosterone levels and develop sexual dysfunction; other studies show little or no benefit.

- **Flibanserin (Addyi).** Originally developed as an antidepressant, flibanserin is approved by the Food and Drug Administration (FDA) as a treatment for low sexual desire in premenopausal women.

  A daily pill, Addyi may boost sex drive in women who experience low sexual desire and find it distressing. Potentially serious side effects include low blood pressure, sleepiness, nausea, fatigue, dizziness and fainting, particularly if the drug is mixed with alcohol. Experts recommend that you stop taking the drug if you don't notice an improvement in your sex drive after eight weeks.

- **Bremelanotide (Vyleesi).** Bremelanotide is another FDA-approved treatment for low sexual desire in premenopausal women. This medication is an injection you give yourself just under the skin in the belly or thigh before anticipated sexual activity.

  Some women experience nausea, which is more common after the first injection but tends to

improve with the second injection. Other side effects include vomiting, flushing, headache and a skin reaction at the site of the injection.

## Potential treatments that need more research

More research is needed before these agents might be recommended for treatment of female sexual dysfunction:

- **Tibolone.** Tibolone is a synthetic steroid drug used in Europe and Australia for treatment of postmenopausal osteoporosis. Due to concerns over increased risk of breast cancer and stroke in women taking tibolone, the drug isn't approved by the FDA for use in the U.S.
- **Phosphodiesterase inhibitors.** This group of medications has proved successful in treating erectile dysfunction in men, but the drugs don't work nearly as well in treating female sexual dysfunction. Studies looking into the

effectiveness of these drugs in women show inconsistent results.

One drug, sildenafil (Revatio, Viagra), may prove beneficial for some women who have sexual dysfunction as a result of taking selective serotonin reuptake inhibitors (SSRIs), a class of drugs used to treat depression. Don't take sildenafil if you use nitroglycerin for angina — a type of chest pain caused by reduced blood flow to the heart.

Issues surrounding female sexual dysfunction are usually complex, so even the best medications aren't likely to work if other emotional or social factors remain unresolved.

**More Information**

Female orgasm: No climax with vaginal penetration?

# Lifestyle and home remedies

To boost your sexual health, find ways to be comfortable with your sexuality, improve your self-esteem and accept your body. Try practicing these healthy lifestyle habits:

- **Avoid excessive alcohol.** Drinking too much blunts sexual responsiveness.
- **Don't smoke.** Cigarette smoking restricts blood flow throughout your body. Less blood reaches your sexual organs, which means you could experience decreased sexual arousal and orgasmic response.
- **Be physically active.** Regular aerobic exercise increases your stamina, improves your body image and elevates your mood. This can help you feel more romantic, more often.
- **Make time for leisure and relaxation.** Learn ways to decrease stress, and allow yourself to relax amid the stresses of your daily life. Being relaxed can enhance your ability to focus on your sexu

experiences and may help you attain more satisfying arousal and orgasm.

## Alternative medicine

More research is needed, but therapies that may help improve sexual satisfaction include:

- **Mindfulness.** This type of meditation is based on having an increased awareness and acceptance of living in the present moment. You focus on what you experience during meditation, such as the flow of your breath. You can observe your thoughts and emotions, but let them pass without judgment.
- **Acupuncture.** Acupuncture involves the insertion of extremely thin needles into your skin at strategic points on your body. Acupuncture may have positive effects on low libido and lubrication difficulties, especially if these problems are

related to the use of some antidepressant medications.

- **Yoga.** During yoga, you perform a series of postures and controlled breathing exercises to promote a flexible body and a calm mind. Certain subsets of yoga aim to channel the body's sexual energy and improve sexual functioning.

There are also some herbal supplements and topical oils marketed to increase libido and sexual pleasure. However, these products haven't been well-studied. One product has estrogen-like properties and may encourage the growth of breast tumors that need estrogen to grow. Talk to your doctor before trying any herbal or topical oil formulations.

---

# Coping and support

At each stage of your life, your level of sexual desire, arousal and satisfaction can change. To better adapt:

- **Understand your body and what makes for a healthy sexual response.** The more you and your partner know about the physical aspects of your body and how it functions, the better able you'll be to find ways to ease sexual difficulties.
- **Gather information.** Ask your doctor or look for educational materials to learn how issues such as aging, illnesses, pregnancy, menopause and medicines might affect your sex life.
- **Communicate openly with your partner.** Be flexible in your approach to intimacy with your partner. Continue to engage in the areas of intimacy that are working well for the two of you.
- **Accept changes that occur.** Explore new aspects of your sexuality during times of transition to improve your sexual experiences.

Sexual response often has as much to do with your feelings for your partner as it does with physical sexual stimuli. Rediscover each other and reconnect.

# Preparing for your appointment

If you have ongoing sexual difficulties that distress you, make an appointment with your doctor. You may feel embarrassed to talk about sex with your doctor, but this topic is perfectly appropriate. A satisfying sex life is important to a woman's well-being at every age.

You might have a treatable, underlying condition, or you might benefit from lifestyle changes, therapy or a combination of treatments. Your primary doctor will either diagnose and treat the problem or refer you to a specialist.

Here's some information to help you prepare for your appointment.

## What you can do

Gather information about:

- **Your symptoms.** Take note of any sexual difficulties you're having, including when and

often they occur.

- **Your sexual history.** Your doctor likely will ask about your relationships and experiences since you became sexually active. He or she also might ask about any history of sexual trauma or abuse.
- **Your medical history.** Write down any medical conditions you have, including mental health conditions. Jot down the names and doses of medications you take or have recently taken, including prescription and over-the-counter drugs.
- **Questions to ask your doctor.** Create a list of questions to make the most of your time with your doctor.

Some basic questions to ask your doctor about your sexual concerns include:

- What might be causing my sexual difficulties?
- Do I need medical tests?
- What treatment do you recommend?

- If you're prescribing medication, are there possible side effects?
- How much improvement can I reasonably expect with treatment?
- Are there lifestyle changes or self-care steps that might help?
- Do you recommend therapy?
- Should my partner be involved in treatment?
- Do you have printed material you can give me? What websites do you recommend?

Don't hesitate to ask other questions that occur to you.

## What to expect from your doctor

Your doctor might ask a number of personal questions and might want to include your partner in the interview. To help determine the cause of your problem and the best course of treatment, be ready to answer questions such as:

- What problems are you having?
- How much do these problems bother you?
- How satisfied are you with your relationship?
- Do you become aroused during sexual interactions with your partner?
- Do you have orgasms?
- If you've had orgasms in the past but no longer can, what's different?
- Do you have pain with intercourse?
- What form of birth control, if any, do you use?
- Do you use alcohol or recreational drugs? How much?
- Have you ever had surgery that involved your reproductive system?
- Have you been diagnosed with other medical conditions, including mental health conditions?

- Have you ever had an unwanted sexual experience?

## What you can do in the meantime

Keep the lines of communication open with your partner. Be honest about your dissatisfaction or the problem you have. Consider alternatives for intimacy and engage in sexual activities that are rewarding for both of you.

---

By Mayo Clinic Staff

Request an appointment

---

Symptoms & causes

Doctors & departments

Dec. 17, 2022

Print

Show references

## Related

Female orgasm: No climax with vaginal penetration?

## Products & Services

A Book: The New Rules of Menopause

Show more products and services from Mayo Clinic



## Mayo Clinic Press

Check out these best-sellers and special offers on books and newsletters from Mayo Clinic Press.

Mayo Clinic on Incontinence

The Essential Diabetes Book

Mayo Clinic on Hearing and Balance

FREE Mayo Clinic Diet Assessment

Mayo Clinic Health Letter - FREE book

---

CON-20372532

Patient Care & Health Information

Diseases & Conditions

Female sexual dysfunction

Make your tax-deductible gift and be a part of the cutting-edge research and care that's changing medicine.

Donate

Find a doctor

Explore careers

## Students

Degree Programs

Admissions Requirements

Student & Faculty Portal

## Researchers

Research Faculty

Laboratories

## International Patients

Appointments

Feedback

Sig
n
up
for
free
e-
new
slet
ters

## About Mayo Clinic

About this Site

Contact Us

Locations

Health Information Policy

Medicare Accountable Care Organization (ACO)

Media Requests

News Network

Price Transparency

Financial Services

International Locations & Offices

## Charitable Care & Financial Assistance

Community Health Needs Assessment

Financial Assistance Documents – Arizona

Financial Assistance Documents – Florida

Financial Assistance Documents – Minnesota

## Medical Professionals

AskMayoExpert

Clinical Trials

Mayo Clinic Alumni Association

Refer a Patient

## Businesses

Executive Health Program

International Business Collaborations

Facilities & Real Estate

Supplier Information

---

## Follow Mayo Clinic

## Get the Mayo Clinic app



Feedback

Dear Dr. Gary French and Medical Cannabis Advisory Board Members,

Thank you for your consideration, comments, and questions regarding adding female orgasm difficulty/disorder (FOD) as a condition of treatment with medical cannabis. I would like to share a few follow up comments.

1. Regarding the conversation about first line treatments, I would like to use PTSD as a comparative example. I attached an article titled, *PTSD Symptom Reports of Patients Evaluated for the New Mexico Medical Cannabis Program* (Greer et al., 2014).
   Highlights of the article are as follows:
   a. In 2009, New Mexico became the first state to explicitly authorize the use of medical cannabis for people with PTSD.
   b. There were no published studies, other than case reports, of the effects of cannabis on PTSD symptoms.
   c. Eighty (n= 80) patients were evaluated and the conclusion was that cannabis is associated with reductions in PTSD symptoms in some patients.

   Since 2009, PTSD has become a condition of treatment with medical cannabis in many US states and countries worldwide and many studies and randomized controlled trials have taken place evaluating cannabis as a treatment for PTSD.
   To date, cannabis is not listed as a first line treatment by any society or agency that I saw, including the Mayo Clinic recommended treatments, The Veteran's Administration, and The U.S. Department of Veterans Affairs.
   Furthermore, the American Psychological Association (APA), does not endorse cannabis for treatment of PTSD.

2. Dr. Tishler and I are in the process of conducting a systematic review of journal articles evaluating cannabis and female orgasm. A total of 697 articles were screened and we are now analyzing 16 articles (studies), many of which are part of the New Mexico petition to add FOD. The studies cover a period of 50 years, from 1974 to 2024, totaling more than 5,000 women. We will share a draft of our paper as it becomes closer to completion provided we are authorized to do so by the journal that accepts it.

3. On May 7th, a research study published by Dr. Tishler and myself, titled, Assessment of the effect of cannabis use before partnered sex on women with and without orgasm difficulty was published in Sexual Medicine Online, a peer-reviewed journal. Our statistically significant results revealed that cannabis improved orgasm frequency, ease, and satisfaction in women who reported orgasm difficulty (n=202) and all women (n=387). Our research expands the 50 years of research showing that cannabis helps women orgasm and helps women who have FOD.

Thank you again and I look forward to the October 7th meeting.

Most Sincerely,
Dr. Suzanne Mulvehill

Female Orgasm Research Institute
Proven Pathways to Orgasm

Suzanne Mulvehill, PhD, MBA
Female Orgasm Research Institute
info@femaleorgasmresearch.org
www.femaleorgasmresearch.org
+39 375 5078 140 IT
+1 561 526 5590 USA

Women's CANNABIS PROJECT
Healing with Science

*Join us in getting female orgasmic difficulty*
*Added as a condition of treatment for medical cannabis.*

# APA Official Actions

# Position Statement in Opposition to Cannabis as Medicine

Approved by the Board of Trustees, July 2019
Approved by the Assembly, May 2019

"Policy documents are approved by the APA Assembly and Board of Trustees. . . These are . . . position statements that define APA official policy on specific subjects. . ." – *APA Operations Manual*

**Issue:**

The medical use of cannabis has received considerable attention as several states have moved to legalize cannabis for various purposes. On a national level, cannabis remains a schedule I substance under the Controlled Substances Act (CSA), the most restrictive schedule enforced by the Drug Enforcement Administration (DEA). This juxtaposition of practice and policy has prompted many professional medical organizations to issue official positions on the topic. This statement reflects the position of the American Psychiatric Association (APA) on the use of cannabis for psychiatric indications.

**APA Position:**

- **There is no current scientific evidence that cannabis is in any way beneficial for the treatment of any psychiatric disorder. In contrast, current evidence supports, at minimum, a strong association of cannabis use with the onset of psychiatric disorders. Adolescents are particularly vulnerable to harm, given the effects of cannabis on neurological development.**
- **Further research on the use of cannabis-derived substances as medicine should be encouraged and facilitated by the federal government. The FDA has approved synthetic cannabis-derived medications for specific indications (examples of medications are Marinol, Syndros, Cesamet and Epidiolex.) The adverse effects of cannabis, including, but not limited to, the likelihood of addiction, must be simultaneously studied.**
- **There is great variability of in the form, dose and potency of cannabis. Furthermore, there are numerous other compounds in products marketed as cannabidiol or cannabis with unknown health effects.**
- **Policy and practice surrounding cannabis-derived substances should not be altered until sufficient clinical evidence supports such changes.**
- **If scientific evidence supports the use of cannabis derived substances to treat specific conditions, the medication should be subject to the approval process of the FDA.**

**Regarding state initiatives to authorize the use of cannabis for medical purposes:**

- **Medical treatment should be evidence-based and determined by professional standards of care; it should not be authorized by ballot initiatives.**

- **No medication approved by the FDA is smoked. Cannabis that is dispensed under a state-authorized program is not a specific product with controlled dosages. The buyer has no complete way of knowing the strength or purity of the product, as cannabis lacks the quality control of FDA-approved medicines, although in some states the percentage of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are listed on the products sold in state-legalized stores or dispensaries.**
- **Prescribers and patients should be aware that the dosage administered by smoking is related to the depth and duration of the inhalation and therefore difficult to standardize. The content and potency of various cannabinoids contained in cannabis can also vary, making dose standardization a challenging task.**
- **Even non-smoked means of consumption, such as edible forms of cannabis, tinctures, and ointments have variable absorption, bio-availability, and a range of phyto-cannabinoids and other biologically active compounds which are not measured or controlled for in production.**
- **Physicians who recommend use of cannabis for "medical" purposes should be fully aware of the risks and liabilities inherent in doing so.**

**The APA does not endorse cannabis as medicine.**

*Journal of Psychoactive Drugs*, 46 (1), 73–77, 2014

ISSN: 0279-1072 print / 2159-9777 online
DOI: 10.1080/02791072.2013.873843

Routledge
Taylor & Francis Group

# PTSD Symptom Reports of Patients Evaluated for the New Mexico Medical Cannabis Program

George R. Greer, M.D.[a]; Charles S. Grob, M.D.[b] & Adam L. Halberstadt, Ph.D.[c]

**Abstract** — *Background*: New Mexico was the first state to list post-traumatic stress disorder (PTSD) as a condition for the use of medical cannabis. There are no published studies, other than case reports, of the effects of cannabis on PTSD symptoms. The purpose of the study was to report and statistically analyze psychometric data on PTSD symptoms collected during 80 psychiatric evaluations of patients applying to the New Mexico Medical Cannabis Program from 2009 to 2011. *Methods*: The Clinician Administered Posttraumatic Scale for DSM-IV (CAPS) was administered retrospectively and symptom scores were then collected and compared in a retrospective chart review of the first 80 patients evaluated. *Results*: Greater than 75% reduction in CAPS symptom scores were reported when patients were using cannabis compared to when they were not. *Conclusions*: Cannabis is associated with reductions in PTSD symptoms in some patients, and prospective, placebo-controlled study is needed to determine efficacy of cannabis and its constituents in treating PTSD.

**Keywords** — cannabis, post-traumatic, stress, tetrahydrocannabinol, THC, treatment

## INTRODUCTION

In 2009, New Mexico became the first state to explicitly authorize the use of medical cannabis for people with PTSD. Approved patients are allowed to purchase cannabis from licensed, non-profit growers/producers or to grow their own supply. The new regulation of cannabis use for PTSD required evaluation by a psychiatrist certifying: "(1) the aforementioned patient has a debilitating medical condition and the potential health benefits of the medical use of marijuana would likely outweigh health risks for the patient. 2) the aforementioned patient has current unrelieved symptoms that have failed other medical therapies" (New Mexico Department of Health 2012). Later, psychiatric nurse practitioners were authorized to conduct the evaluations. As of the most recent report available at this writing, there were 5,495 active medical cannabis patients, of whom 1,854 (34%) had PTSD and 1,355 had chronic pain (New Mexico Department of Health 2011).

A literature search of "cannabis AND PTSD" through PubMed yielded 42 references, some of which reported a positive association of PTSD with cannabis use (Bonn-Miller, Vujanovic & Drescher 2011; Cougle et al. 2011), or abuse and dependence (Cornelius et al. 2010). One article reviewed the anxiolytic properties of the cannabinoid, cannabidiol (Schier et al. 2012), and one included a case report and a thorough discussion on the use of cannabis as a PTSD treatment and possible mechanisms of action (Passie et al. 2012).

In one unpublished, open-label pilot study, smoked medical cannabis containing 23% tetrahydrocannabinol

[a]Private practice, Santa Fe, NM.
[b]Professor, Department of Psychiatry and Biobehavioral Sciences and Department of Pediatrics, and Director, Division of Child and Adolescent Psychiatry, Harbor-UCLA Medical Center, Torrance, CA.
[c]Assistant Research Scientist, Department of Psychiatry, University of California San Diego, La Jolla, CA.
Please address correspondence to George R. Greer, M.D., 2019 Galisteo, Bldg. N2, Santa Fe, NM 87505; phone and fax: +1 505 982 0312; email: george@newmexico.com

(THC) and less than 1% cannabidiol was administered to 29 male Israeli combat veterans with PTSD, with instructions to smoke it daily (Mashiah 2012). The baseline score on the Clinician Administered Posttraumatic Scale for DSM-IV (CAPS) was 98 for the entire group, and post-treatment scores in three subgroups after four to 11 months of treatment ranged from 54 to 60.

Soon after the New Mexico PTSD regulation went into effect, one of the authors [GG] began receiving unsolicited phone calls in his private practice from people asking to be evaluated as part of their application to the Program. In order to avoid evaluating patients who would be unlikely to qualify, telephone screening was conducted to determine whether they met the following criteria by self-report: (1) the experience of and emotional response to a trauma that met the DSM-IV Criterion A for PTSD; (2) the presence of several of the major symptoms in Criteria B, C, and D (reexperiencing, avoidance, and hyperarousal) of PTSD when not using cannabis; (3) significant relief of several major PTSD symptoms when using cannabis; and (4) lack of any harm or problems in functioning resulting from cannabis use. All patients who met these screening criteria were evaluated.

The CAPS was utilized during the evaluation to quantify the patients' symptoms retrospectively with and without cannabis use. The CAPS is a frequently used instrument in PTSD research that was developed by the National Center for PTSD and two Veterans Affairs medical centers (Blake et al. 1995). The instrument asks questions about the presence of traumatic experiences and the immediate emotional response to them described in DSM-IV Criterion A for PTSD, and asks for a rating of the frequency and intensity of all 17 symptoms in Criteria B, C, and D on a scale of 0 to 4. On the CAPS scoring form, the frequency and intensity scores are added to create a total score for that symptom; then a total score for all the symptoms within each criterion, and for all symptom criteria, are calculated.

During the evaluation, patients were asked to answer the symptom questions for Criteria B, C, and D retrospectively for a time period when they were not using cannabis, and for a period when they were using it, and scores were recorded for each period. No urine drug screens were collected to verify recent cannabis use.

After conducting over 80 such evaluations between mid-2009 and the end of 2011, all with adults over age 18, CAPS scores were analyzed to assess differences in PTSD symptoms with vs without cannabis use. The null hypothesis was that there would be no significant difference in CAPS scores between the cannabis and no-cannabis conditions.

## MATERIALS AND METHODS

Study procedures were approved by the Institutional Review Board (IRB) of the Los Angeles BioMedical Research Institute at Harbor-UCLA Medical Center. Retrospective chart review procedures were conducted for the first 80 patients evaluated by GG for participation in the New Mexico Department of Health's Medical Cannabis Program for PTSD. The data collection procedure began with GG scanning each of the CAPS scoring forms for Criteria B, C, and D to a file in .pdf format. The .pdf files and spreadsheet were then sent to the two other investigators, CG and AH. Per IRB rules, no identifying information was extracted from patient records, or seen or retained by any of the investigators.

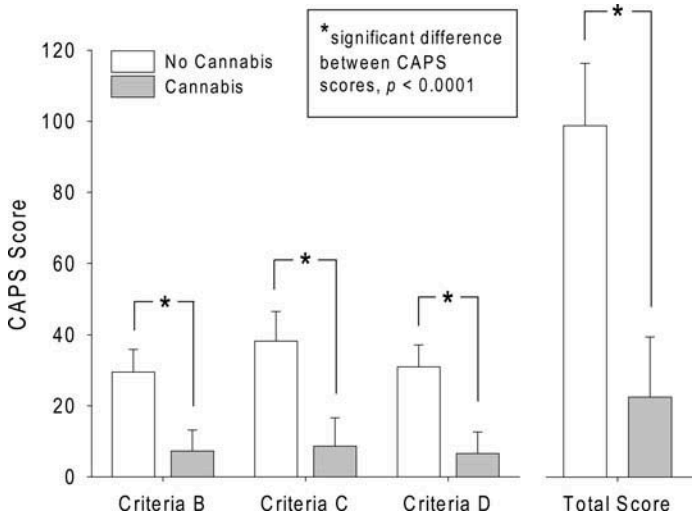
CAPS symptom cluster (re-experiencing, avoidance, and arousal) scores were analyzed using two-way analysis of variance (ANOVA) with time period (no-cannabis vs. cannabis) as a within-subject factor. When the two-way ANOVA detected significant main effects of time period or interactions between time period and symptom cluster, post-hoc pairwise comparisons were performed by one-way ANOVA. CAPS scores in patients using cannabis were also analyzed as %baseline (no-cannabis) scores using two-tailed one-sample *t*-tests. Statistical significance was demonstrated by surpassing an $\alpha$ level of .01.

In addition to statistically analyzing the Criteria B, C, and D symptom scores, the initial plan was to record whether the patient met diagnostic criteria for PTSD with and without cannabis use. However, no single scoring rule or method of the nine suggested by the CAPS Manual (Weathers, Ruscio & Keane 1999) was appropriate for this study. Determining whether someone has or does not have a PTSD diagnosis based solely on any of the nine CAPS scoring methods would exaggerate the perception of a difference that did not reflect the clinical condition of the person, because the frequency and intensity of all the symptoms exist on a continuum. Therefore, a patient who barely qualified for the diagnosis according to one of the scoring rules/methods would not be very different from someone who almost qualified.

## RESULTS

CAPS scores for the no-cannabis and cannabis conditions are shown in Figure 1. Within-subject analysis showed that there was a significant reduction of total CAPS scores ($F(1,79) = 1119.55$, $p < 0.0001$) when patients were using cannabis ($22.5 \pm 16.9$ (mean $\pm$ S.D.)) compared with the no-cannabis condition ($98.8 \pm 17.6$). There were also significant reductions in CAPS symptom cluster scores (Cannabis $\times$ Cluster: $F(2,158) = 39.87$, $p < 0.0001$) in patients using cannabis. Post-hoc analysis confirmed that scores were reduced during cannabis use for Criterion B (core symptom cluster of re-experiencing), which decreased from $29.5 \pm 6.4$ to $7.3 \pm 5.9$ ($F(1,79) = 734.98$, $p < 0.0001$); Criterion C (numbing and avoidance), which decreased from $38.2 \pm 8.4$ to $8.7 \pm 8.0$ ($F(1,79) = 783.73$, $p < 0.0001$); and Criterion D (hyperarousal), which

**FIGURE 1**
**CAPS Scores for the No-Cannabis and Cannabis Conditions. Data Are Expressed as Group Means ± S.D.**
***Significant Difference Between CAPS Scores, $p < 0.0001$.**




decreased from 31.0 ± 6.2 to 6.6 ± 6.0 ($F(1,79) = 910.79$, $p < 0.0001$).

CAPS scores in patients using cannabis were also analyzed as %baseline (no-cannabis) scores. Use of cannabis was associated with a reduction of total CAPS scores to 22.7 ± 15.9% of baseline ($t(79) = -43.48$, $p < 0.0001$); similar reductions occurred in Criterion B (24.8 ± 18.9%; $t(79) = -35.59$, $p < 0.0001$), Criterion C (22.5 ± 19.5%; $t(79) = -35.59$, $p < 0.0001$), and Criterion D (21.0 ± 17.6%; $t(79) = -40.12$, $p < 0.0001$) scores.

One finding was that only 19 of the 80 patients reported any score at all for Criterion C3 (inability to recall an important aspect of the trauma) with no cannabis, and the mean score for C3 was much smaller than the mean scores for the other 16 criteria (main effect of criteria for the no cannabis condition: $F(16,1264) = 43.18$, $p < 0.0001$). As shown in Table 1, post-hoc analysis confirmed that the Criterion C3 values for the no-cannabis time period were significantly different than the values for all other criteria during the same time period.

**TABLE 1**
**DSM IV Criteria B, C, and D Scores During the No-Cannabis Time Period**

| Criteria | Mean | S.D. | N | Comparison Versus C3 |
|---|---|---|---|---|
| B1 | 6.7 | 1.2 | 80 | $F(1,79) = 362.53$, $p < 0.0001$ |
| B2 | 5.7 | 2.5 | 80 | $F(1,79) = 123.80$, $p < 0.0001$ |
| B3 | 4.1 | 2.9 | 80 | $F(1,79) = 48.62$, $p < 0.0001$ |
| B4 | 6.5 | 1.5 | 80 | $F(1,79) = 273.24$, $p < 0.0001$ |
| B5 | 6.5 | 1.4 | 80 | $F(1,79) = 279.16$, $p < 0.0001$ |
| C1 | 6.7 | 1.7 | 80 | $F(1,79) = 266.72$, $p < 0.0001$ |
| C2 | 6.5 | 1.6 | 80 | $F(1,79) = 308.42$, $p < 0.0001$ |
| C3 | 1.2 | 2.4 | 80 | |
| C4 | 6.2 | 2.1 | 80 | $F(1,79) = 211.79$, $p < 0.0001$ |
| C5 | 6.2 | 2.0 | 80 | $F(1,79) = 229.73$, $p < 0.0001$ |
| C6 | 5.9 | 2.3 | 80 | $F(1,79) = 185.00$, $p < 0.0001$ |
| C7 | 5.6 | 2.8 | 80 | $F(1,79) = 118.92$, $p < 0.0001$ |
| D1 | 7.1 | 1.7 | 80 | $F(1,79) = 339.92$, $p < 0.0001$ |
| D2 | 5.9 | 2.2 | 80 | $F(1,79) = 153.62$, $p < 0.0001$ |
| D3 | 5.9 | 1.7 | 80 | $F(1,79) = 214.04$, $p < 0.0001$ |
| D4 | 6.3 | 2.1 | 80 | $F(1,79) = 221.47$, $p < 0.0001$ |
| D5 | 5.8 | 2.0 | 80 | $F(1,79) = 178.75$, $p < 0.0001$ |

## DISCUSSION

Patients in this sample reported over 75% reduction in all three areas of PTSD symptoms while using cannabis. Because this was a highly select group of pre-screened patients who had already found that cannabis reduced their PTSD symptoms and who sought entry to the NM Medical Cannabis Program to avoid criminal penalties for cannabis possession, reports of significant symptom reduction could be expected. Some degree of intentional or unintentional exaggeration of symptom differences on the part of the patients is likely, and some unintentional bias on the part of the psychiatrist conducting the evaluations is also possible.

Another factor is that some patients may have reported their no-cannabis PTSD symptoms when they were also experiencing a cannabis-withdrawal syndrome. Nightmares, anger, and insomnia have been reported as common symptoms of cannabis withdrawal (Allsop et al. 2011). Those three symptoms are among the 17 symptoms of PTSD, and so could have resulted in higher no-cannabis CAPS scores for those symptoms. However, in this retrospective chart review, no information was collected on the length of the time periods without cannabis use. Therefore, there is no valid way to quantify the degree to which cannabis-withdrawal symptoms may have increased the CAPS scores for those three PTSD symptoms. However, even with the above confounding variables, the amount of reported symptom relief is noteworthy.

Furthermore, the variability in scores with cannabis use was relatively high, with the standard deviation being almost equal to the mean total scores and the scores of the three symptom clusters. If patients had consistently reported frequent and severe symptoms without cannabis and almost no symptoms with cannabis in order to make sure they qualified for the Program, one would expect less variability in the cannabis scores. Finally, the relatively consistent reporting of low or "0" scores on Criterion C3 without cannabis (see Table 1) is another indication that most patients were not malingering by exaggerating their no-cannabis scores for every single symptom in order to qualify for the program. In fact, their reporting low scores for this symptom is consistent with psychometric literature on the CAPS: "Finally, with the exception of amnesia, the prevalence of each of the 17 core PTSD symptoms on the CAPS was significantly greater in participants with PTSD than in those without PTSD, indicating robust discrimination between the two groups" (Weathers, Keane & Davidson, 2001).

Because only patients who reported benefit from cannabis in reducing their PTSD were studied, no conclusions can be drawn as to what proportion or type of PTSD patients would benefit from treatment with cannabis or its constituents. The reported anxiolytic properties of cannabidiol may partly explain the reported benefit, though the cannabis in the Israeli study reportedly contained almost no cannabidiol (Mashiah 2012). That small, open-label prospective study comes closer to showing a benefit, at least for people with combat-related PTSD. It has also been reported that the synthetic cannabinoid nabilone can reduce the incidence and severity of nightmares in PTSD patients (Fraser 2009).

The finding that use of cannabis can reduce symptoms of PTSD is consistent with preclinical evidence showing that the endocannabinoid system is involved in the regulation of emotional memory. There is extensive evidence that cannabinoids may facilitate extinction of aversive memories (de Bitencourt, Pamplona & Takahashi 2013). For example, in rodents, the full CB1 receptor agonist WIN 55,212-2 (Pamplona et al. 2006; Pamplona, Bitencourt & Takahashi 2008) and the fatty acid amide hydrolase inhibitor AM404 (Pamplona et al. 2006; Chhatwal et al. 2005) facilitate extinction of conditioned fear. Given the role that the endocannabinoid system plays in fear extinction, it is possible that the marked reduction in PTSD symptomatology reported with cannabis use in the present study was due to facilitated extinction of fear memories. Additional studies are necessary to identify the specific mechanism by which cannabis use attenuates the symptoms of PTSD.

## CONCLUSION

Though currently there is no substantial proof of the efficacy of cannabis in PTSD treatment, the data reviewed here supports a conclusion that cannabis is associated with PTSD symptom reduction in some patients, and that a prospective, placebo-controlled study of cannabis or its constituents for treatment of PTSD is warranted.

## REFERENCES


Allsop, D.J.; Norberg, M.M.; Copeland, J.; Fu, S. & Budney, A.J. 2011. The Cannabis Withdrawal Scale development: Patterns and predictors of cannabis withdrawal and distress. *Drug and Alcohol Dependence* 119 (1–2): 123–9.

Blake, D.D.; Weathers, F.W.; Nagy, L.M.; Kaloupek, D.G.; Gusman, F.D.; Charney, D.S. & Keane, T.M. The development of a clinician-administered PTSD scale. *Journal of Traumatic Stress* 8: 75–90.

Bonn-Miller, M.O.; Vujanovic, A.A. & Drescher, K.D. 2011. Cannabis use among military veterans after residential treatment for posttraumatic stress disorder. *Psychology of Addictive Behaviors* 25 (3): 485–91.

Chhatwal, J.P.; Davis, M.; Maguschak, K.A. & Ressler, K.J. 2005. Enhancing cannabinoid neurotransmission augments the extinction of conditioned fear. *Neuropsychopharmacology* 30: 516–24.

Cornelius, J.R.; Kirisci, L.; Reynolds, M.; Clark, D.B.; Hayes, J. & Tarter, R. 2010. PTSD contributes to teen and young adult cannabis use disorders. *Addict Behav* 35 (2): 91–4.

Cougle, J.R.; Bonn-Miller, M.O.; Vujanovic, A.A.; Zvolensky, M.J. & Hawkins, K.A. 2011. Posttraumatic stress disorder and cannabis use in a nationally representative sample. *Psychology of Addictive Behaviors* 25 (3): 554–8.

de Bitencourt, R.M.; Pamplona, F.A. & Takahashi R.N. 2013. A current overview of cannabinoids and glucocorticoids in facilitating extinction of aversive memories: Potential extinction enhancers. *Neuropharmacology* 64: 389–95.

Fraser, G.A. 2009. The use of a synthetic cannabinoid in the management of treatment-resistant nightmares in posttraumatic stress disorder (PTSD). *CNS Neuroscience & Therapeutics* 15 (1): 84–8.

Mashiah, M. 2012. Personal communication, October 2. Abstract available from first author.

New Mexico Department of Health, Medical Cannabis Program. 2011. Medical Cannabis Program Update for the Medical Advisory Board Meeting 10/19/11. Available at: http://www.health.state.nm.us/idb/medicalcannabis/Update%20for%20Medical%20Advisory%20Board%20Meeting%2010-19-11%20(2).pdf (accessed March 30, 2013).

New Mexico Department of Health, Medical Cannabis Program. 2012. Enrollment/Re-enrollment Medical Certification Form. Available at: http://nmhealth.org/mcp/documents/NMDOH-MCP-Form-PatientPacket.pdf (accessed March 30, 2013).

Pamplona, F.A.; Bitencourt, R.M. & Takahashi, R.N. 2008. Short- and long-term effects of cannabinoids on the extinction of contextual fear memory in rats. *Neurobiology of Learning and Memory* 90: 290–3.

Pamplona, F.A.; Prediger, R.D.; Pandolfo, P. & Takahashi, R.N. 2006. The cannabinoid receptor agonist WIN 55,212-2 facilitates the extinction of contextual fear memory and spatial memory in rats. *Psychopharmacology* 188: 641–9.

Passie, T.; Emrich, H.M.; Karst, M.; Brandt, S.D. & Halpern, J.H. 2012. Mitigation of post-traumatic stress symptoms by cannabis resin: A review of the clinical and neurobiological evidence. *Drug Testing and Analysis* 4 (7–8): 649–59.

Schier, A.R.; Ribeiro, N.P.; Silva, A.C.; Hallak, J.E.; Crippa, J.A.; Nardi, A.E. & Zuardi, A.W. 2012. Cannabidiol, a cannabis sativa constituent, as an anxiolytic drug. *The Revista Brasileira de Psiquiatria* 34 (suppl. 1): 104–10.

Weathers, F.W.; Keane, T.M. & Davidson, J.R.T. 2001. Clinician-administered PTSD scale: A review of the first ten years of research. *Depression and Anxiety* 13: 132–56.

Weathers, F.W.; Ruscio, A.M. & Keane, T.M. 1999. Psychometric properties of nine scoring rules for the clinician-administered post-traumatic stress disorder scale. *Psychological Assessment* 11 (2): 124–33.

**MICHELLE LUJAN GRISHAM**
GOVERNOR

**ROBERT E. DOUCETTE, JR.**
CABINET SECRETARY

**DOROTHY MENDONCA**
DIRECTOR
STATE PURCHASING DIVISION

# State of New Mexico
General Services Department

ADMINISTRATIVE SERVICES DIVISION
(505)827-2000

FACILITIES MANAGEMENT DIVISION
(505) 827-2141

PURCHASING DIVISION
(505) 827-0472

RISK MANAGEMENT DIVISION
(505) 827-2036

STATE PRINTING & GRAPHIC SERVICES BUREAU
(505) 476-1950

TRANSPORTATION SERVICES DIVISION
(505) 827-1957

## DIRECTIVE M E M O R A N D U M

Date: February 15, 2024
To: All State Agencies, Local Public Bodies CPOs and CFOs
From: Dorothy Mendonca, State Purchasing Agent
Subject: Reporting All Procurements under the Statewide Price Agreement

This memorandum is a directive to all agencies, local public bodies who are using a Statewide Price Agreement (SWPA) and is being issued in accordance with the New Mexico Procurement Code, Section **13-1-95. et seq. NMSA 1978 - Purchasing division; creation; director is state purchasing agent; appointment; duties.**

To ensure continued compliance with the provision of the Procurement Code, effective immediately, all agencies and local public bodies using a SWPA shall report all procurements to the state purchasing agent, to include the amounts encumbered. While this reporting has been encouraged in the past, it has come to the attention of the State Purchasing Division (SPD) that the reporting has been inconsistent and consequently, there is no effective way to account for many of the procurements or the amounts allotted for these purchases.

Agency/Local Public Body Chief Procurement Officers (CPOs) will need to be registered in the SPD Tracker system. If registration is needed or there is no access to submit reporting, please contact Francine Wagner (Francine.Wagner@gsd.nm.gov) to obtain access. Reporting procurements under the SWPA shall be filed on a quarterly basis. First report will need to be submitted by April 5, 2024 for the quarter of January-March, 2024. If an agency has zero amount to report this should reflect on the reporting submission. Should an agency not report by the 15th of the month of the closing quarter a non-compliance notice will be issued with copies going to the Legislative Finance Committee and the Department of Finance. This reporting will allow the state purchasing agent to track all procurements under the SWPAs. In addition, this information will assist the Legislative Finance Committee in its tracking of procurement funds. This information will also be available on the State Purchasing Division website for easy reference by other agencies and local public bodies.

| Quarterly Reporting | Report Date |
|---|---|
| July-September | October 5 |
| October-December | January 5 |
| January-March | April 5 |
| April-June | July 5 |

This directive rescinds and supplants any earlier directive or policy memo regarding SWPA reporting duties to the state purchasing agent under this provision of the Procurement Code.

We appreciate your consideration in this matter.

Copy to:
Robert Doucette, General Services Department Cabinet Secretary
Anna Silva, General Services Department Deputy Cabinet Secretary
Jennifer Conn, General Services Department Deputy Cabinet Secretary
Local public body CPO's and CFO's
Vendors awarded on SWPA's

CLINICAL PRACTICE

Patrick G. O'Malley, M.D., M.P.H., *Editor*

# Sexual Dysfunction in Women

Susan R. Davis, M.B., B.S., Ph.D.

*This* Journal *feature begins with a case vignette highlighting a common clinical problem. Evidence supporting various strategies is then presented, followed by a review of formal guidelines, when they exist. The article ends with the author's clinical recommendations.*

From the Women's Health Research Program, School of Public Health and Preventive Medicine, Monash University, and the Department of Endocrinology and Diabetes, Alfred Health — both in Melbourne, VIC, Australia. Dr. Davis can be contacted at susan.davis@monash.edu or at the Women's Health Research Program, School of Public Health and Preventive Medicine, Monash University, 553 St. Kilda Rd., Melbourne, VIC 3004, Australia.

N Engl J Med 2024;391:736-45.
DOI: 10.1056/NEJMcp2313307


CME

**A 54-year-old woman presents with low libido, diminished arousal, and anorgasmia. She had undergone a hysterectomy and bilateral salpingo-oophorectomy at 49 years of age owing to menorrhagia and a family history of ovarian cancer. She has been using transdermal estradiol patches and topical vaginal estradiol and has no menopausal symptoms or dyspareunia. She is in a loving relationship with no major life stressors, does not have depression, and takes no other medication. All other clinical characteristics, including her weight and blood pressure, are normal. She has recently become aware that there may be treatment options for low libido and would like to discuss these with you. How would you respond?**

## THE CLINICAL PROBLEM

Because there is no universal definition of normal sexual function, what constitutes sexual difficulty is determined by a person's subjective definition of unsatisfactory sexual well-being. The condition is usually described as unsatisfactory interest, arousal, orgasm, or other aspects of sexuality (e.g., sexual self-image), and the symptoms often coexist. The term "sexual dysfunction" is used when at least one of the symptoms is of substantial concern to the affected person.[1] Sexual dysfunction negatively affects mental health, vitality, and social functioning and has an overall effect on quality of life that is of similar magnitude to that associated with chronic back pain or diabetes.[2]

### CLASSIFICATION OF SEXUAL DYSFUNCTION IN WOMEN

The classification of sexual dysfunction in women continues to evolve, with the *International Classification of Diseases and Related Health Problems*, 11th revision (ICD-11), providing substantive changes to the classification, and hence the diagnosis, of sexual dysfunctions.[3] The ICD-11 recognizes that sexual response is influenced by a complex interplay of biologic, psychological, and social factors (Table 1). Hence, sexual dysfunction is no longer defined as either related to or caused by a disease or medication (organic) or independent of an identifiable cause (nonorganic).[3] This change is clinically important because it allows for associated factors to be recognized and, when possible, managed but does not prevent persons with associated factors from receiving treatment for sexual dysfunction.

Another modification is that the ICD-11 no longer categorizes all sexual dysfunctions according to male or female sex, because most determinants of sexual response are not sex-specific. Only arousal disorder in women and erectile dysfunction in men remain categorized as sex-specific sexual dysfunctions.[3] Unlike the *Diag-*

KEY POINTS

**SEXUAL DYSFUNCTION IN WOMEN**

- Sexual dysfunction in women is common and is associated with impaired well-being and quality of life.
- Many women with sexual dysfunction will not seek care unless prompted by their health care provider. However, there are no evidence-based screening recommendations for sexual dysfunction as part of routine care.
- Sexual well-being is determined by a complex interplay of biologic, psychological, and sociocultural factors. Therefore, an assessment of sexual dysfunction involves a comprehensive review of the patient's general health and psychosocial circumstances and a history of the patient's use of prescription and nonprescription medications and other drugs.
- Management pathways for sexual dysfunction include lifestyle modification, counseling and psychosexual therapies, physical therapy, and pharmacologic therapy.

*nostic and Statistical Manual of Mental Disorders*, fifth edition,[4] the ICD-11 has retained hypoactive sexual desire dysfunction and arousal dysfunction as separate conditions because they have differing etiologic characteristics and risk factors and, in most cases, are associated with different psychological and biologic interventions.[1] Table 1 provides descriptions of sexual dysfunctions.

Although sexual pain disorders may contribute to other sexual dysfunctions,[5] both sexual pain disorders and persistent genital arousal disorder are classified separately in the ICD-11[3] and are not discussed in detail here. However, vaginal symptoms that cause dyspareunia are common, and treatment options are described below.

## PREVALENCE OF SEXUAL DYSFUNCTION IN WOMEN

Contemporary data regarding the prevalence of sexual dysfunction across the adult female life span are limited, in part because several epidemiologic studies have excluded women who were either sexually inactive or unpartnered or did not include assessments of the degree to which the sexual concern caused distress, which is a necessary criterion for the identification of sexual dysfunction. In addition, findings from some studies are difficult to reconcile owing to the use of different questionnaires for sexual function and sexual distress. For example, in a population-based German study involving 2059 women, 19.4% of the younger participants (18 to 24 years of age) and 31.5% of the older participants (46 to 55 years of age) had low desire; hypoactive sexual desire dysfunction with severe distress in the previous 12 months was reported in 6.2% of participants in the younger age group and 7.3% of participants in the older age group.[6] In contrast, a contemporaneous population-based Australian study involving 10,554 women who answered validated questionnaires showed that 27.4% and 58.9% of women 18 to 24 years of age and 45 to 49 years of age, respectively, had low desire, and 12.2% and 31.6%, respectively, had hypoactive sexual desire dysfunction.[7] The discrepancies between the studies reflect different wordings of the questions used, combined with the severity of distress required to classify a participant as having a dysfunction. Nonetheless, both show that low desire progressively increases with age, and sexually-associated distress concurrently declines, so that the peak in hypoactive sexual desire dysfunction in women emerges during midlife (Fig. 1).[7]

The prevalence of arousal dysfunction and orgasm dysfunction is also unclear. The percentages of women with unspecified arousal dysfunction that have been reported in population-based studies are 3 to 9% among women 18 to 44 years of age,[6,8,9] 5 to 7.5% among women 45 to 64 years of age,[6,8] and 3 to 6% among women 65 years of age or older.[6,8] Anorgasmia with distress has been reported to affect 7 to 8% of women younger than 40 years of age, approximately 5 to 7% of women 40 to 64 years of age, and 3 to 6% of women 65 years of age or older in studies conducted in Europe, the United States, and Australia.[6,8,9]

The most common sexual difficulty with associated distress in women younger than 40 years of age is poor sexual self-image, a characteristic that was observed in 13.4% of women of this age group in a large Australian study.[10] Risk factors for low sexual self-image dysfunction included breast-feeding, overweight and obesity, and having a partner.[10] A disturbing finding was that 30% of the participants scored above the threshold for sexually related personal distress but did not

**Table 1. Summary of ICD-11 Classification of Sexual Dysfunction in Women.***

| Dysfunction Category | Manifestation or Description |
|---|---|
| Hypoactive sexual desire dysfunction† | Absence or marked reduction in desire or motivation to engage in sexual activity as manifested by any of the following: reduced or absent spontaneous desire, reduced or absent responsive desire to erotic cues and stimulation, or inability to sustain desire or interest in sexual activity once initiated |
| Sexual arousal dysfunction† | Despite the desire for sexual activity and adequate sexual stimulation, absence or marked reduction in any of the following: genital response (vulvovaginal lubrication, genital engorgement, or genital sensitivity), nongenital responses (hardening of nipples, flushing of skin, or increased heart rate, blood pressure, or respiration rate), or feelings of sexual arousal (sexual excitement and sexual pleasure) |
| Orgasmic dysfunction | Absence or marked infrequency of the orgasm experience or markedly diminished intensity of orgasmic sensations, including marked delay in orgasm, despite desire for sexual activity and orgasm and adequate sexual stimulation |
| Other or unspecified sexual dysfunction | Not specified |

* For classification purposes, symptoms should have been episodic or persistent over a period at least several months and associated with clinically significant distress. Etiologic considerations include associations with any of the following: a medical condition, injury, or the effects of surgery or radiation treatment; psychological or behavioral factors, including mental disorders; use of psychoactive substance or medication; lack of knowledge or experience; associated with relationship factors; cultural factors; and other specified etiologic considerations (e.g., gender incongruence, changes in anatomy, pregnancy, postpartum status). ICD-11 denotes the *International Classification of Diseases and Related Health Problems*, 11th revision.

† Subcategories include lifelong, acquired, generalized, situational, and unspecified.

have a specific sexual difficulty.[10] Although several factors were independently associated with nonspecific sexual distress (receiving current treatment for infertility, taking psychotropic medication, smoking, alcohol consumption, and being in paid employment) other potential determinants, such as relationship issues and abuse, were not captured.

### COMMON CONTRIBUTING HEALTH CONDITIONS

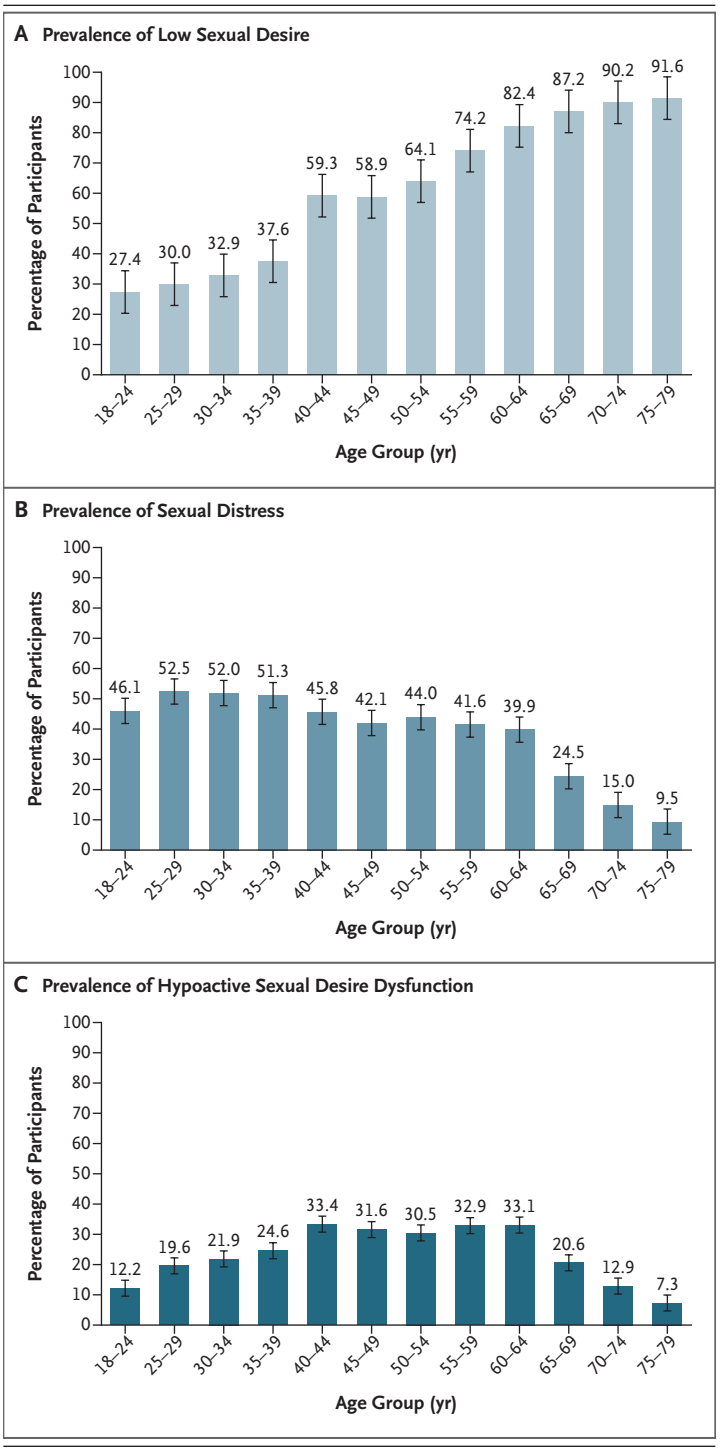
Estrogen insufficiency is a hallmark of menopause, hypothalamic amenorrhea, hyperprolactinemia, hypopituitarism, and antiestrogen therapy (aromatase inhibitors or selective estrogen-receptor modulators). Low sexual desire may be related to estrogen-insufficiency symptoms such as hot flashes and night sweats, mood change, sleep disturbance, or vulvovaginal dryness.[11] Low testosterone levels have not been consistently associated with low orgasm satisfaction; however, in one analysis, when sociodemographic factors were taken into consideration, low testosterone was independently associated with low orgasm satisfaction in premenopausal women.[10] Serum testosterone levels have not been consistently associated with sexual function in postmenopausal women,[12,13] but representative studies that use a more precise measurement of testosterone are still needed. Other endocrine disorders associated with a greater likelihood of sexual dysfunction include adrenal insufficiency (including adrenal suppression by systemic glucocorticoids),[14] diabetes,[15] and polycystic ovary syndrome.[16]

Chronic disease, particularly conditions that reduce mobility or cause chronic pain, mental health conditions, pelvic-organ prolapse, and cancer therapy may all contribute to sexual dysfunction.[1] An array of psychosocial factors may underlie sexual dysfunction, including relationship difficulties, poor self-image, past or current abuse, stressors, and sociocultural beliefs and expectations.[1,17] Both depressive symptoms and psychotropic medications are independently and bidirectionally associated with sexual dysfunction.[18]

Findings from a randomized, controlled trial suggest that the use of combined oral contraceptives may cause low sexual desire.[19] However, simply switching contraceptive pills can provide substantial improvement in sexual function, irrespective of the androgenicity of the progestin in the new preparation.[20] Other common medications can cause sexual dysfunction — notably cardiac and antihypertensive medications.[1,17]

**Figure 1. Prevalence of Sexual Dysfunction in a Representative Sample of 10,554 Women in a Community-Based Australian Study.[7]**

Women 18 to 39 years of age completed the Profile of Female Sexual Function (PFSF), and all others completed the Female Sexual Function Index (FSFI). Responses of "never" or "seldom" to the question "How often in the past 30 days did the following statement apply to you? 'I felt sexual desire'" on the PFSF indicated low desire, and responses of "almost never or never" or "a few times" to the question "How often did you feel sexual desire and interest?" on the FSFI indicated low desire (Panel A). Sexually associated distress was assessed among women in all age groups with the use of the Female Sexual Distress Scale–Revised (Panel B). Hypoactive sexual desire dysfunction was defined as the presence of both low desire and sexually associated distress (Panel C). Percentages shown are absolute percentages, with I bars indicating 95% confidence intervals.




## STRATEGIES AND EVIDENCE

### ASSESSMENT

Available data suggest that less than 50% of persons with sexual difficulties that cause them distress seek help.[21] Persons younger than 35 years of age are most likely to seek support from the Internet, whereas older persons are more likely to consult a doctor.[21] This difference highlights the potential importance of incorporating screening for sexual difficulties in routine clinical care, although there are no available screening trials evaluating this strategy.

It is crucial to recognize that women who are unpartnered or sexually inactive may have sexual dysfunction[18] and that sexual dysfunction does not have an age limit. One strategy to ascertain information regarding a patient's sexual function is to pose an open-ended question as to whether the patient has any sexual concerns.[1,22] It is helpful to normalize the conversation by reassuring the patient that sexual concerns are common. If a concern is identified, a simple framework can be applied that comprises eliciting the patient's story; providing a name to or, if more appropriate, reframing the concern in a meaningful way for the patient; acknowledgment of the issues and challenges being met by the patient; and either making time for further assessment or, if preferred by the patient, referring the patient for care.[1,22] This approach informs treatment options that are described below.

Full assessment will guide the management and referral pathways (Table 2). Establishing the recency of onset and whether the problem is generalized, situational, or partner-specific is important. For example, life-long sexual dysfunction is addressed by means of psychosocial care, whereas dysfunction that arises after bilateral oophorec-

**Table 2. Checklist of Factors to Be Considered in the Assessment of Sexual Dysfunction in Women.**

| |
|---|
| **Biologic and hormonal factors** |
| Sex-hormone insufficiency |
| Depression |
| Illness |
| Fatigue |
| Urinary incontinence |
| Prescription and nonprescription medication |
| Alcohol or other drug use |
| **Intrapersonal development history** |
| Trauma (sexual, physical, emotional, or medical) |
| Negative emotions (anxiety, fear, shame, or guilt) |
| Poor body image |
| Gender-identity concerns |
| Level of education |
| **Expectation of negative outcomes** |
| Past disappointing or painful sex |
| **Interpersonal issues** |
| Lack of a partner |
| Relationship discord |
| Absence of emotional intimacy |
| **Contextual factors** |
| Lack of privacy |
| Safety concerns |
| Emotional rapport |
| Cultural norms and religious beliefs |
| **Lack of appropriate stimuli** |
| Lack of knowledge regarding sexual stimulation |
| Partner's ill health or sexual dysfunction |

tomy may be effectively treated with hormone replacement. A full history will provide information about menstrual irregularity in premenopausal women (possibly due to stress or to hormonal disorders such as hyperprolactinemia or polycystic ovary syndrome), vulvovaginal atrophy symptoms that occur after menopause (e.g., vaginal dryness or irritation [dyspareunia]), pelvic floor disorders (urinary incontinence, fecal incontinence, or prolapse, which may contribute to loss of desire), gynecologic surgery (residual discomfort or concerns about sex), dyspareunia, and vaginismus. Both prescription and nonprescription medications, as well as alcohol consumption and the use of other drugs, may affect sexual function, so their use should be ascertained.

Physical examination should be guided by the medical history, such as breast examination for galactorrhea if hyperprolactinemia is suspected. Similarly, biochemical assessments and imaging should be performed on the basis of the medical history and examination findings. Hormone measurement and other biochemical testing should be performed only to identify a clinically suspected endocrinopathy or to monitor a known condition. Measurement of testosterone levels offers no diagnostic usefulness because there is no serum testosterone level below which a female patient can be classified as being testosterone-deficient.[23] Serum testosterone should only be measured to provide a baseline value if testosterone therapy is to be initiated.[23]

## MANAGEMENT

The management of sexual dysfunction should be guided by the patient's concerns and wishes, as well as by their physical and psychological health and social circumstances, and may involve a partner. Treatment options are summarized in Table 3.

Attention should be given to potentially modifiable factors. When possible, medications known to be associated with sexual dysfunction, most commonly antidepressant therapy, should be modified or changed. Lifestyle interventions may reduce sexual difficulties.[40] For example, a post hoc analysis involving women with diabetes and obesity showed that lifestyle intervention might reduce generalized sexual dysfunction, with 28% of persons included in the analysis no longer meeting the diagnostic criteria for sexual dysfunction after lifestyle interventions, as compared with 11% of those who received supportive care.[41]

Psychosocial interventions are frequently effective in treating sexual dysfunction.[24] These interventions may be in the form of sexual counseling, body awareness counseling, cognitive therapy, couples counseling, or referral to a psychologist (if a mood disorder is identified). Targeted sexual therapy may involve pelvic-floor relaxation training, vaginal dilator therapy (in women with vaginismus),[42] and clitoral devices that may improve clitoral sensation and orgasm in women with an arousal disorder.[43] The efficacy of each of these interventions is difficult to quantitate be-

cause studies have included small, heterogeneous samples across different age ranges and with different outcomes.[24,25,42,43]

### PHARMACOTHERAPY

Although estrogen therapy is not a treatment for generalized sexual dysfunction, hormone therapy should be considered for menopausal symptoms that are troubling to the patient, because symptom relief may reduce sexual symptoms. Dyspareunia due to estrogen insufficiency can be treated with a local topical vaginal estrogen cream, pessary, or ring; prasterone (a form of dehydroepiandrosterone for vaginal use); oral ospemifene; or vaginal moisturizers.[44] Vaginal erbium and carbon-dioxide laser therapy have been promoted for relief of dyspareunia. However, in 2018 the Food and Drug Administration warned against the use of these therapies owing to insufficient evidence to support their efficacy and safety for the treatment of dyspareunia.[45]

Flibanserin and bremelanotide are approved in the United States for treatment in premenopausal women with generalized, acquired hypoactive sexual desire dysfunction. Flibanserin is thought to disinhibit pathways involved in sexual desire. Studies involving both premenopausal and postmenopausal women with hypoactive sexual desire dysfunction showed sufficient efficacy for the approval of flibanserin for premenopausal women in the United States.[31] The efficacy of flibanserin is modest.[31] In a meta-analysis of eight trials including 5914 participants, flibanserin was shown to have increased the number of satisfying sexual experiences per month by 0.5 but with considerable side effects (e.g., dizziness, somnolence, nausea, and fatigue). Bremelanotide is a melanocortin receptor agonist that is thought to increase dopamine release and thus increase excitation in brain regions that are associated with sexual desire.[46] A combined analysis of two trials involving 1267 participants showed a modest improvement in sexual desire and decrease in distress related to low sexual desire with bremelanotide but more nausea, flushing, and headache side effects than with placebo.[32]

There are no therapies approved in North America for postmenopausal women with hypoactive sexual desire dysfunction, but testosterone has been prescribed off-label for hypoactive sexual desire dysfunction since the 1940s.[47] A transdermal testosterone patch was approved in Europe for surgically postmenopausal women having hypoactive sexual desire dysfunction despite adequate estrogen therapy,[35] but the patch was removed from the market by the manufacturer when the approval was not extended to naturally menopausal women, despite clinical trial data showing efficacy of the patch in those women that was similar to that seen in surgically postmenopausal women.[48] A transdermal 1% testosterone cream[49] has been approved in Australia for the treatment of postmenopausal women with hypoactive sexual desire dysfunction.

An international task force evaluated the available clinical trial data and concluded that transdermal testosterone therapy, which restores serum testosterone levels to approximately those seen in premenopausal women, is moderately effective for the treatment of postmenopausal hypoactive sexual desire dysfunction. Table 3 provides a summary of the trial evidence.[23] The task force recommended against the use of oral testosterone therapy owing to potential adverse effects related to lipoprotein levels and inconsistent absorption.[23] Clinical trial data have shown that transdermal testosterone, when administered at the recommended doses, may cause a small but significant increase in the likelihood of acne, growth of facial or body hair, and weight gain, and long-term safety data are lacking.[34]

Nonetheless, it has been estimated that more than 2 million prescriptions of testosterone are written each year for women in the United States, many of which are probably for compounded preparations.[50] Compounded formulations are not subject to requirements for pharmacokinetic profiling, and their uncertain absorption may cause overdose and harm.[23] The international task force recommendation that if an approved female-specific testosterone formulation is unavailable and testosterone therapy is considered indicated for treatment of postmenopausal hypoactive sexual desire dysfunction, the preferred option is a fractionated dose of a regulator-approved male formulation.[23] When transdermal testosterone is prescribed, regular monitoring of serum testosterone concentrations and clinical assessment for signs of androgen excess are recommended.[23]

Systemic dehydroepiandrosterone therapy has not been shown to improve sexual dysfunction in randomized, double-blind clinical trials involving women with intact adrenals[51] or with adrenal

**Table 3. Recognized Treatment Options.***

| Category and Treatment | Strength of Evidence | Potential Adverse Events |
|---|---|---|
| **Nonpharmacotherapy** | | |
| Psychosocial therapy — sexual education and counseling, body awareness, cognitive therapy, couples therapy, social interventions | Varies; primarily from small trials in differing populations[24,25] | Not applicable |
| Physical therapy — pelvic floor physiotherapy; FDA-approved clitoral vacuum device may improve sensation, lubrication, orgasm with or without arousal disorder | Varies according to patient population[26] | Not applicable |
| **Pharmacotherapy†** | | |
| Vaginal dryness causing dyspareunia | | Constituents vary; some may cause irritation, impair sperm motility, or contain parabens[27] |
| Lubricants for vaginal dryness associated with sexual activity[27,28] | Moderate evidence for reduced dyspareunia[27,28] | |
| Vaginal moisturizers for dryness, itch, and soreness[27] | Strong evidence for reduced dyspareunia[27,28] | |
| Vaginal dryness in postmenopausal women | | |
| Estradiol vaginal tablet (FDA-approved at a dose of 0.01 mg nightly for 2 wk, then 2 or 3 times per wk); estriol ovule (0.5 mg nightly for 2 wk, then 2 or 3 times per wk); estriol cream (0.5 mg nightly for 3 wk, then 2 times per wk); estriol gel (0.05 g nightly for 3 wk, then 2 times per wk); estradiol 0.01% cream (FDA-approved at a dose of 2 to 4 g daily for 1 to 2 wk, then 1 g applied 1 or 2 times per wk); estradiol 2-mg ring (FDA-approved at a dose of 0.0075 mg per day, replaced every 90 days; and conjugated estrogen cream 0.625 mg per gram (FDA-approved for cyclic use of 0.5 to 2 g intravaginally once daily for 21 days, then off for 7 days) | Moderate efficacy shown for vaginal dryness and dyspareunia, with similar efficacy in all formulations[29] | Vaginal discharge, vulvovaginal candidiasis, vaginal bleeding, and breast pain; dose and formulation dependent[30] |
| Prasterone insert (6.5 mg nightly)‡ | Strong evidence of reducing dyspareunia[28] | Vaginal discharge[30] |
| Ospemifene tablet (60 mg taken orally once daily)‡ | Moderate evidence of improvement in sexual function[28] | Vasomotor symptoms, vaginal discharge and candidiasis, may increase endometrial thickness[28] |
| Hypoactive sexual desire dysfunction in premenopausal women | | |
| Flibanserin (100 mg taken orally once daily at bedtime)‡§ | Evidence of modest effect (approximately 0.5 to 0.65 additional satisfactory sexual events per month)[31] | Somnolence, sedation, or fatigue (28%)[31]; owing to potential hypotension and syncope, caution regarding alcohol consumed within 2 hr before or after taking flibanserin; contraindicated with concurrent strong CYP3A4 inhibitor medication or liver impairment[31] |
| Bremelanotide (1.75 mg administered subcutaneously 45 min before sexual activity)‡ | Evidence of modest effect on sexual desire vs. placebo (0.35-point difference out of a possible total score of 5); no evidence for increased satisfactory sexual events[32] | Nausea (40% of patients; may resolve with use), facial flushing (in 20%), headache (in 11%)[32] |

| | | |
|---|---|---|
| Hypoactive sexual desire dysfunction in postmenopausal women | | |
| Transdermal testosterone 1% cream (0.5 to 1 ml applied topically once daily); off-label in most countries; female-specific 1% transdermal testosterone cream approved in Australia and South Africa | Low-quality clinical trial evidence for this formulation[33]; strong evidence for transdermal testosterone overall[34]; increase in 1–1.4 satisfactory sexual events per month[35,36] | Acne, increased hair growth, and weight gain.[34] |
| Genital arousal dysfunction in premenopausal and postmenopausal women | | Headache, flushing, and dyspepsia.[37] |
| Sildenafil for spinal cord injury–associated arousal dysfunction (50 mg taken before sexual encounter)[38] | Improved subjective arousal in small double-blind trial[38] | |
| Sildenafil for antidepressant-associated arousal dysfunction (50 mg taken before sexual encounter)[37] | Low-quality evidence from small open-label trial[37] | |
| Tadalafil for type 1 diabetes–associated arousal dysfunction (5 mg daily)[39] | Low-quality evidence from small open-label trial[39] | |

* Specialized interventions for sexual pain disorders or hyperactive sexual desire dysfunction are not included. FDA denotes Food and Drug Administration.
† The availability of hormonal and nonhormonal treatments and indications for use from regulatory bodies vary among countries.
‡ This use is FDA-approved.
§ This use is approved in Canada for persons up to 60 years of age.

insufficiency.[52] Bupropion and buspirone are psychotropic medications that have been used off-label in patients with sexual dysfunction, but efficacy and safety data are insufficient, and currently neither therapy can be recommended.[17]

Effective pharmacotherapies for arousal and orgasm dysfunction are lacking. Small studies suggest potential benefits of phosphodiesterase-5 (PDE5) inhibitors for arousal difficulties in women with spinal cord injury[38] and antidepressant-associated arousal dysfunction.[37] PDF5 inhibitors have also shown promise for the treatment of genital arousal dysfunction in women with type 1 diabetes.[39] There is no evidence of benefit of PDF5 inhibitor therapy in healthy women with arousal dysfunction.[53]

## GUIDELINES

The International Society for the Study of Women's Sexual Health has published processes of care for the identification of sexual concerns and problems in women[1] and for the assessment of hypoactive sexual desire dysfunction.[17] The processes of care are valuable resources for enhancing the skills and capabilities of both primary health care providers and medical specialists. The Global Consensus Position Statement on Testosterone for Women, developed and endorsed by leading women's health groups worldwide and available in 14 languages, provides comprehensive guidance regarding the use of testosterone therapy in women.[23] The recommendations in this article align with these guidelines.

## AREAS OF UNCERTAINTY

Clarification of the prevalence of sexual dysfunction relies on an investment in quality epidemiologic studies that are inclusive of all women, irrespective of gender identity, sexual preference, and partner status. Furthermore, the understanding of the physiology of female sexuality has been constrained by the necessary reliance on animal models, anatomical and functional studies involving humans, and imaging. The uncertainty of the biologic features of the brain in sexual function in women hinders the understanding of dysfunction and in turn the development of pharmacotherapies. Clinical trials to further evaluate available psychosocial interventions and pharmacotherapies are still needed. Consequently, treat-

ment algorithms, particularly regarding arousal and orgasm dysfunction, remain inadequate because they are limited to modification of contributing factors, counseling, and physical therapies.

## CONCLUSIONS AND RECOMMENDATIONS

With regard to the patient described in the vignette, I would seek to identify relationship issues, major psychosocial contributors, or modifiable factors and to determine whether the loss of libido was of meaningful concern to the patient. If the diagnosis of hypoactive sexual desire dysfunction was established, I would address any psychosocial issues as appropriate, and I would discuss treatment options. In most countries, the approach would involve off-label pharmacotherapy, with the most evidence-based option currently being the administration of transdermal testosterone at a dose appropriate for a female patient. Unfortunately, this case highlights the ongoing inadequacy of treatment options for women with sexual dysfunction.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

## REFERENCES


1. Parish SJ, Hahn SR, Goldstein SW, et al. The International Society for the Study of Women's Sexual Health process of care for the identification of sexual concerns and problems in women. Mayo Clin Proc 2019;94:842-56.
2. Biddle AK, West SL, D'Aloisio AA, Wheeler SB, Borisov NN, Thorp J. Hypoactive sexual desire disorder in postmenopausal women: quality of life and health burden. Value Health 2009;12:763-72.
3. Conditions related to sexual health: sexual dysfunctions. In: ICD-11 for Mortality and Morbidity Statistics. Geneva: World Health Organization, 2024 (https://icd.who.int/browse/2024-01/mms/en#160690465).
4. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington, VA: American Psychiatric Publishing, 2013.
5. Al-Abbadey M, Liossi C, Curran N, Schoth DE, Graham CA. Treatment of female sexual pain disorders: a systematic review. J Sex Marital Ther 2016;42:99-142.
6. Briken P, Matthiesen S, Pietras L, et al. Estimating the prevalence of sexual dysfunction using the new ICD-11 guidelines. Dtsch Arztebl Int 2020;117:653-8.
7. Zheng J, Islam RM, Bell RJ, Skiba MA, Davis SR. Prevalence of low sexual desire with associated distress across the adult life span: an Australian cross-sectional study. J Sex Med 2020;17:1885-95.
8. 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.
9. Zheng J, Skiba MA, Bell RJ, Islam RM, Davis SR. The prevalence of sexual dysfunctions and sexually related distress in young women: a cross-sectional survey. Fertil Steril 2020;113:426-34.
10. Zheng J, Islam RM, Skiba MA, Bell RJ, Davis SR. Associations between androgens and sexual function in premenopausal women: a cross-sectional study. Lancet Diabetes Endocrinol 2020;8:693-702.
11. National Institute for Health and Care Excellence. Menopause: diagnosis and management. December 5, 2019 (https://www.nice.org.uk/guidance/ng23/resources/menopause-diagnosis-and-management-pdf-1837330217413).
12. Wåhlin-Jacobsen S, Pedersen AT, Kristensen E, et al. Is there a correlation between androgens and sexual desire in women? J Sex Med 2015;12:358-73.
13. Davis SR, Davison SL, Donath S, Bell RJ. Circulating androgen levels and self-reported sexual function in women. JAMA 2005;294:91-6.
14. Zamponi V, Lardo P, Maggio R, et al. Female sexual dysfunction in primary adrenal insufficiency. J Clin Med 2021;10:2767.
15. Pontiroli AE, Cortelazzi D, Morabito A. Female sexual dysfunction and diabetes: a systematic review and meta-analysis. J Sex Med 2013;10:1044-51.
16. Thannickal A, Brutocao C, Alsawas M, et al. Eating, sleeping and sexual function disorders in women with polycystic ovary syndrome (PCOS): a systematic review and meta-analysis. Clin Endocrinol (Oxf) 2020;92:338-49.
17. Clayton AH, Goldstein I, Kim NN, et al. The International Society for the Study of Women's Sexual Health process of care for management of hypoactive sexual desire disorder in women. Mayo Clin Proc 2018;93:467-87.
18. Worsley R, Bell RJ, Gartoulla P, Davis SR. Prevalence and predictors of low sexual desire, sexually related personal distress, and hypoactive sexual desire dysfunction in a community-based sample of midlife women. J Sex Med 2017;14:675-86.
19. Zethraeus N, Dreber A, Ranehill E, et al. Combined oral contraceptives and sexual function in women-a double-blind, randomized, placebo-controlled trial. J Clin Endocrinol Metab 2016;101:4046-53.
20. Davis SR, Bitzer J, Giraldi A, et al. Change to either a nonandrogenic or androgenic progestin-containing oral contraceptive preparation is associated with improved sexual function in women with oral contraceptive-associated sexual dysfunction. J Sex Med 2013;10:3069-79.
21. Hobbs LJ, Mitchell KR, Graham CA, et al. Help-seeking for sexual difficulties and the potential role of interactive digital interventions: findings from the Third British National Survey of Sexual Attitudes and Lifestyles. J Sex Res 2019;56:937-46.
22. Annon JS. The PLISSIT model: a proposed conceptual scheme for the behavioral treatment of sexual problems. J Sex Educ Ther 2015;2:1-15.
23. Davis SR, Baber R, Panay N, et al. Global consensus position statement on the use of testosterone therapy for women. Climacteric 2019;22:429-34.
24. Frühauf S, Gerger H, Schmidt HM, Munder T, Barth J. Efficacy of psychological interventions for sexual dysfunction: a systematic review and meta-analysis. Arch Sex Behav 2013;42:915-33.
25. Jaderek I, Lew-Starowicz M. A systematic review on mindfulness meditation-based interventions for sexual dysfunctions. J Sex Med 2019;16:1581-96.
26. 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.
27. Potter N, Panay N. Vaginal lubricants and moisturizers: a review into use, efficacy, and safety. Climacteric 2021;24:19-24.
28. Casiano Evans EA, Hobson DTG, Aschkenazi SO, et al. Nonestrogen therapies for treatment of genitourinary syndrome of menopause: a systematic review. Obstet Gynecol 2023;142:555-70.
29. Lethaby A, Ayeleke RO, Roberts H. Local oestrogen for vaginal atrophy in postmenopausal women. Cochrane Database Syst Rev 2016;2016(8):CD001500.
30. The NAMS 2020 GSM Position Statement Editorial Panel. The 2020 genitourinary syndrome of menopause position statement of the North American

Menopause Society. Menopause 2020;27:976-92.
**31.** Jaspers L, Feys F, Bramer WM, Franco OH, Leusink P, Laan ET. Efficacy and safety of flibanserin for the treatment of hypoactive sexual desire disorder in women: a systematic review and meta-analysis. JAMA Intern Med 2016;176:453-62.
**32.** Kingsberg SA, Clayton AH, Portman D, et al. Bremelanotide for the treatment of hypoactive sexual desire disorder: two randomized phase 3 trials. Obstet Gynecol 2019;134:899-908.
**33.** El-Hage G, Eden JA, Manga RZ. A double-blind, randomized, placebo-controlled trial of the effect of testosterone cream on the sexual motivation of menopausal hysterectomized women with hypoactive sexual desire disorder. Climacteric 2007;10:335-43.
**34.** Islam RM, Bell RJ, Green S, Page MJ, Davis SR. Safety and efficacy of testosterone for women: a systematic review and meta-analysis of randomised controlled trial data. Lancet Diabetes Endocrinol 2019;7:754-66.
**35.** Simon J, Braunstein G, Nachtigall L, 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.
**36.** Davis SR, Moreau M, Kroll R, et al. Testosterone for low libido in postmenopausal women not taking estrogen. N Engl J Med 2008;359:2005-17.
**37.** 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.
**38.** Sipski ML, Rosen RC, Alexander CJ, Hamer RM. Sildenafil effects on sexual and cardiovascular responses in women with spinal cord injury. Urology 2000;55:812-5.
**39.** Caruso S, Cicero C, Romano M, Lo Presti L, Ventura B, Malandrino C. Tadalafil 5 mg daily treatment for type 1 diabetic premenopausal women affected by sexual genital arousal disorder. J Sex Med 2012;9:2057-65.
**40.** Steinberg Weiss M, Roe AH, Allison KC, et al. Lifestyle modifications alone or combined with hormonal contraceptives improve sexual dysfunction in women with polycystic ovary syndrome. Fertil Steril 2021;115:474-82.
**41.** Wing RR, Bond DS, Gendrano IN III, et al. Effect of intensive lifestyle intervention on sexual dysfunction in women with type 2 diabetes: results from an ancillary Look AHEAD study. Diabetes Care 2013;36:2937-44.
**42.** Zarski A-C, Berking M, Fackiner C, Rosenau C, Ebert DD. Internet-based guided self-help for vaginal penetration difficulties: results of a randomized controlled pilot trial. J Sex Med 2017;14:238-54.
**43.** Billups KL, Berman L, Berman J, Metz ME, Glennon ME, Goldstein I. A new nonpharmacological vacuum therapy for female sexual dysfunction. J Sex Marital Ther 2001;27:435-41.
**44.** Simon JA, Davis SR, Althof SE, et al. Sexual well-being after menopause: an International Menopause Society white paper. Climacteric 2018;21:415-27.
**45.** Food and Drug Administration. Statement from FDA Commissioner Scott Gottlieb. M.D., on efforts to safeguard women's health from deceptive health claims and significant risks related to devices marketed for use in medical procedures for "vaginal rejuvenation." July 30, 2018 (https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-efforts-safeguard-womens-health-deceptive-health-claims).
**46.** Pfaus JG, Sadiq A, Spana C, Clayton AH. The neurobiology of bremelanotide for the treatment of hypoactive sexual desire disorder in premenopausal women. CNS Spectr 2022;27:281-9.
**47.** Greenblatt RB. Testosterone propionate pellet implantation in gynecic disorders. JAMA 1943;121:17-24.
**48.** Panay N, Al-Azzawi F, Bouchard C, et al. Testosterone treatment of HSDD in naturally menopausal women: the ADORE study. Climacteric 2010;13:121-31.
**49.** Fooladi E, Reuter SE, Bell RJ, Robinson PJ, Davis SR. Pharmacokinetics of a transdermal testosterone cream in healthy postmenopausal women. Menopause 2015;22:44-9.
**50.** Snabes MC, Simes SM. Approved hormonal treatments for HSDD: an unmet medical need. J Sex Med 2009;6:1846-9.
**51.** Elraiyah T, Sonbol MB, Wang Z, et al. Clinical review: the benefits and harms of systemic dehydroepiandrosterone (DHEA) in postmenopausal women with normal adrenal function: a systematic review and meta-analysis. J Clin Endocrinol Metab 2014;99:3536-42.
**52.** Alkatib AA, Cosma M, Elamin MB, et al. A systematic review and meta-analysis of randomized placebo-controlled trials of DHEA treatment effects on quality of life in women with adrenal insufficiency. J Clin Endocrinol Metab 2009;94:3676-81.
**53.** Leddy LS, Yang CC, Stuckey BG, et al. Influence of sildenafil on genital engorgement in women with female sexual arousal disorder. J Sex Med 2012;9:2693-7.