

A Clinical Reference Guide on Sexual Devices for Obstetrician–Gynecologists

Elizabeth S. Rubin, MD, Neha A. Deshpande, MD, Peter J. Vasquez, MD, and Susan Kellogg Spadt, PhD, CRNP

In the United States, more than half of all women have used a vibrator, nearly one third of women have used a dildo, and more than three quarters of women who have sex with women have used a vibrator. Sexual devices can be used by patients with decreased libido, anorgasmia, conditions inhibiting vaginal penetration, partner erectile dysfunction, and motor or sensory disabilities. Basic knowledge of sexual devices can help obstetrician–gynecologists counsel patients about device safety, sharing, cleaning, disinfection, and material selection. Common sexual devices include vibrators, penetrative devices, anal-specific devices, and air pulsation devices. Collision dyspareunia aids can assist patients who experience difficulty with deep penetration owing to pain and structural limitations. Although rare, the most common risks of sexual devices are traumatic injury and infection. Barrier use over sexual devices and proper disinfection can help reduce, but not eliminate, the risk of transmission of common viral and bacterial sexually transmitted infections. Sexual devices made of nonporous materials are the safest and easiest to clean and disinfect. Porous materials should be avoided given inability to disinfect and risk of material breakdown. Sexual devices can benefit specific patient populations,

including women who are pregnant or postpartum, those with disorders of sexual function or pelvic floor, menopausal patients, cancer patients undergoing treatment, and women with disability and chronic illness.

(*Obstet Gynecol* 2019;133:1259–68)

DOI: 10.1097/AOG.0000000000003262

Sexual devices, including vibrators, dildos, and other products designed to aid in sexual activity, are becoming increasingly integrated into patients' overall sexual experiences.¹ More than half of all women in the United States have used a vibrator and nearly one third of women have used a dildo.² Prevalence of use is even higher in women who have sex with women, with more than 75% of women who have sex with women reporting vibrator use.³ Patients may use sexual enhancement devices during masturbation or partnered sexual activity to increase arousal, increase likelihood of orgasm, decrease latency time to orgasm or to enhance their sexual life in other ways.^{4,5} The same devices may also be used as sexual therapeutic devices for patients with decreased libido, anorgasmia, conditions inhibiting vaginal penetration, partner erectile dysfunction, and motor or sensory disabilities.⁶

Increased knowledge surrounding sexual device use can assist obstetrician–gynecologists (ob-gyns) in screening for sexually transmitted infection (STI), making recommendations to patients who may benefit from sexual aids, and counseling regarding non-coital sexual activity safety. The adult product industry is an unregulated consumer market; therefore, understanding the safety profile of various products is central to patient counseling. Some clinicians may be uncomfortable discussing sexual devices with patients given the pervasive taboo regarding their use and their association with masturbation, erectile dysfunction, and sexual paraphilia, or because of perceived irrelevance and diffusion of responsibility to other medical specialties. However, ob-gyns are

From the Department of Obstetrics & Gynecology, Hospital of the University of Pennsylvania, and the Department of Obstetrics and Gynecology, Drexel University, Philadelphia, Pennsylvania.

The authors thank artist and designer Jono Matusky of PXL LAB for his original graphic designs of all the images included in this article.

Each author has confirmed compliance with the journal's requirements for authorship.

Corresponding author: Elizabeth S. Rubin, MD, Department of Obstetrics and Gynecology, Hospital of the University of Pennsylvania, 3400 Spruce Street, 5th Floor Dulles Building, Philadelphia 19104, PA; email: elizabeth.rubin@pennmedicine.upenn.edu.

Financial Disclosure

Susan Kellogg Spadt has received money paid to her for her role as a speaker for Amag Pharmaceuticals, TherapeuticsMD, and Lupin Pharmaceuticals. The other authors did not report any potential conflicts of interest.

© 2019 by the American College of Obstetricians and Gynecologists. Published by Wolters Kluwer Health, Inc. All rights reserved.

ISSN: 0029-7844/19



uniquely positioned to discuss intimate details of patients' lives, and thus a basic knowledge of sexual devices is fundamental to providing comprehensive sexual healthcare.

The American College of Obstetricians and Gynecologists recommends that providers discuss sexual device cleaning with patients to reduce risk of associated infection.⁷ Similarly, leading experts in the field of sexual medicine have advocated for increased discussion of sexual device use.⁸ The purpose of this article is to educate ob-gyns about sexual devices and to serve as a clinical reference guide.

TERMINOLOGY

Sexual device refers to any object designed to physically aid in sexual arousal, activity, or stimulation. These devices may be used for sexual enhancement, as well as for medical therapeutic purposes—specifically pelvic floor rehabilitation or to facilitate otherwise difficult sexual activity in patients with medical conditions or disabilities. Thus, sexual devices can be separated into two broad categories of sexual enhancement and sexual therapeutic use. All sexual devices have similar mechanisms of action in that they provide stimulation to the clitoris, vagina, rectum or other erogenous zones, either with vibration, pulsation, pressure, or penetration, to enhance, accelerate, or prolong any phases of the sexual-response cycle.

A variety of terminology is used in the medical literature and in the lay press to refer to sexual devices. In addition to the colloquially used term “sex toy,” practitioners may encounter “lifestyle product,” “marital aid,” and “adult novelty products,” among others. Although “sexual aid” may have different definitions within urology, gynecology, and sexual medicine literature, patients with sexual disorders may find this term more sensitively addresses the degree of disability associated with their conditions. Some patients with disabilities or those in the lesbian, gay, bisexual, transgender, queer, and intersex community, however, may find the term “sexual aid” is negative and implies that their baseline sexual activity is insufficient or dysfunctional. For these patients, as well as anyone using devices for purely recreational sexual enhancement, the term “sexual device” may be more appropriate. Box 1 defines additional terms used in this guide.

SCREENING AND COUNSELING

Given the prevalence of sexual device use, providers may consider screening and counseling for sexual device use at routine gynecologic appoint-

Box 1. Definitions

- Sexual device: any object designed to physically aid in sexual arousal, activity, or stimulation.
- Sex toy: a common colloquial term for a sexual device. Often refers to devices when used for purely recreational sexual enhancement.
- Vibrator (Fig. 1): a device using an electric motor to create vibration for external or internal genital stimulation.
- Dildo (Fig. 2): a phallus-shaped device designed for vaginal or rectal penetration or stimulation. Can be combined with a harness. Dildos with two insertive ends for partner use are called “double-sided dildos” (Fig. 3).
- Strap-on: a harness (Fig. 4) and dildo used in combination to facilitate hands-free sexual activity.
- Anal plug (Fig. 5): wedge-shaped device with a wide protective flange designed to be placed in the rectum and remain there for the duration of sexual activity.
- Air pulsation device (Fig. 6): a device using mild air pulsations directly to the clitoris.
- Collision dyspareunia aid (Fig. 7): a protective donut-shaped bumper that rests around the base of a penis or dildo to prevent deep penetration.

ments or problem visits when patients express issues with dyspareunia, pelvic pain, sexual dysfunction, hypoactive desire, or other sexual problems.⁶ Please see the Specific Patient Populations section for sexual device considerations and counseling among different types of patients. Examples of possible screening questions are provided in Box 2.

Box 2. Examples of Sexual Device Screening Questions

1. Have you ever or do you currently use a sexual device, such as a vibrator or dildo, alone or with a partner?
2. Would you consider using a sexual device if it would improve your sexual health and wellness?

If “yes” to 1, consider the following questions:

3. Do you use your device externally (around the vulva or clitoris) or internally (in the vagina)?
4. Do you use your device inside or near the rectum or anus?
5. Do you ever share devices with others?
6. What material is your device made from?
7. How often do you clean your device and by what method, if at all?



TYPES OF SEXUAL DEVICES

Vibrators

The most commonly used sexual devices are those designed to provide vibratory stimulation to the external or internal genitalia or anus (Fig. 1).² Vibrators come in a variety of designs and can be particularly useful for patients experiencing anorgasmia.^{1,6} Vibrators can be made out of a number of materials and may be battery powered, rechargeable or plugged into an electrical outlet. Box 3 describes several common types of vibrators.

Penetrative Devices (Dildos)

Dildos are devices designed for penetration that can be used by patients for masturbation or partnered sexual activity (Fig. 2). Though available in a wide variety of sizes, they average approximate mean penile dimensions.⁹ Many commercially available dildos are nearly indistinguishable from vaginal dilators and the two can be used interchangeably based on patient needs. Some penetrative devices may have the ability to vibrate or be double-sided, allowing both partners to experience sexual penetration simultaneously (Fig. 3).

A strap-on dildo is used with a harness to fasten it against the body, primarily for partnered sexual activity (Fig. 4). A hip harness assists in facilitating

Box 3. Examples of Vibrators

- Wand: vibrators with a soft, tennis-ball-sized head that vibrates and contains a large plastic handle for the motor.
- Bullet: thumb-sized, battery-powered vibrators intended for external use.
- Dual-stimulation: vibrators meant to simultaneously stimulate the internal and external genitalia.
- Wearable: vibrators designed to maintain external placement and stimulation during sexual activity, including vaginal penetration, either using leg straps or internal portion using pelvic floor muscles.

vaginal or anal penetration in many positions and can be used by patients across the gender and sexual orientation spectrums. Strap-on anal penetration of a cisgender male partner is colloquially called “pegging.” Other harness models exist, including thigh and hand harnesses, which can be an asset for patients with limited mobility.

Anal-Specific Devices

Patients can use vibrators and dildos safely for anal stimulation and penetration as long as specific safety features are addressed. Anal devices should have a flared base to prevent the device from being drawn into the rectum and personal lubrication should always be used to prevent traumatic injury.¹⁰ Additionally, they should be designed from nonporous materials to prevent spread of rectal flora. Glass anal devices should be avoided completely; broken glass in the rectum constitutes a surgical emergency.

Anal plugs are triangular devices that are designed with a narrowing to be held in the rectum by the external anal sphincter (Fig. 5). Although many anal plugs are specifically designed for those seeking prostate stimulation, patients without a prostate may also derive pleasure from anal stimulation. Cisgender men and transgender women may also achieve prostate stimulation with other types of receptive anal sexual device penetration.

Air Pulsation Devices

Devices using mild air pulsations for clitoral stimulation produce a unique sensation distinct from vibrators or manual stimulation (Fig. 6). Patented in 2013, air pulsation devices are a relatively new addition to the market. These may represent alternative options for patients who cannot achieve orgasm with other types of sex or sexual device use.

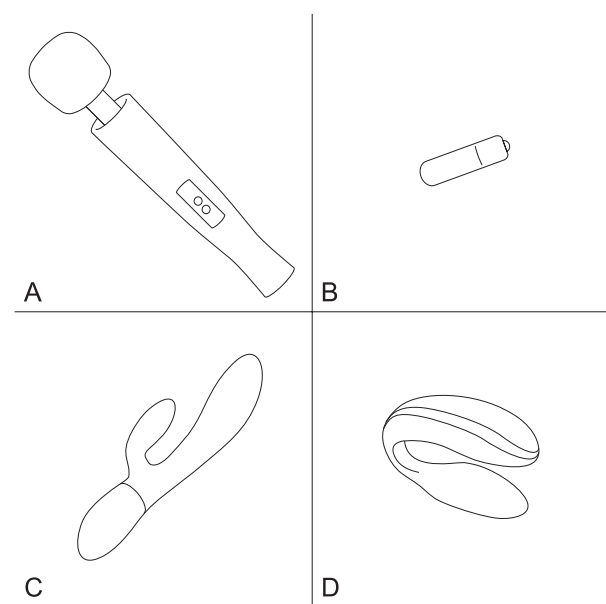


Fig. 1. Four types of vibrators. **A.** Wand, **B.** bullet, **C.** dual-stimulation, **D.** wearable. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. *Sexual Devices: A Clinical Reference Guide*. Obstet Gynecol 2019.



Collision Dyspareunia Aids

Collision dyspareunia aids are protective, donut-shaped bumpers that rest around the base of a penis or dildo (Fig. 7). These aids assist patients who experience difficulty with deep penetration owing to pain, structural limitations (eg, stenosis, shortening, insufficient dilation) or partner size mismatch.

MATERIALS

Because sexual devices are primarily used on mucosal surfaces, using safe and nontoxic materials is essential. Generally, nonporous materials are preferable, because porous surfaces allow the passage of liquids and particles, thus preventing effective disinfection.

Nonporous Materials

Nonporous materials include items such as medical-grade silicone, hypoallergenic metals, borosilicate glass, or acrylonitrile butadiene styrene plastic. Silicone is soft, nonporous, moldable for different anatomic needs and easily disinfected. Additionally, human papillomavirus (HPV) may be less likely to persist on silicone devices more than 24 hours after cleaning.¹¹ Of note, products may be falsely marketed as “silicone” despite an overall low fraction of silicone. Hypoallergenic metals, including stainless steel and titanium, are commonly used to make Grafenberg spot or anal stimulation devices. Glass devices, popular for their smooth surfaces and appealing aesthetics, should be made from borosilicate glass rather than

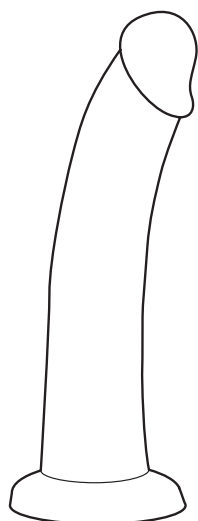


Fig. 2. Dildo. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. *Sexual Devices: A Clinical Reference Guide*. Obstet Gynecol 2019.

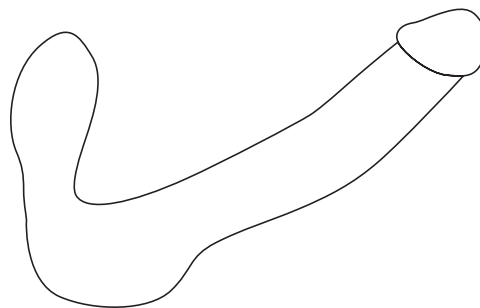


Fig. 3. Double-sided dildo. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. *Sexual Devices: A Clinical Reference Guide*. Obstet Gynecol 2019.

untreated soda-lime glass. Borosilicate glass is stronger with a reduced risk of breakage from thermal or mechanical stress. Regardless, glass devices should be used with extreme caution in the vagina and avoided in the rectum, given concerns regarding lacerations or perforations warranting immediate evaluation. Plastic, most frequently used for vibrators, is inexpensive and widely available. Plastic sexual devices should be made from hard, nontoxic plastics, such as acrylonitrile butadiene styrene, that do not contain bisphenols (BPA, BPS and BPF) given their association with adverse reproductive outcomes.¹² Although plastic is nonporous, it has limited disinfection options owing to heat intolerance and the corrosive effects of chemical disinfectants.

Porous Materials

Among porous devices, thermoplastic rubber and thermoplastic elastomer are generally considered nontoxic and body safe. Unfortunately, the majority

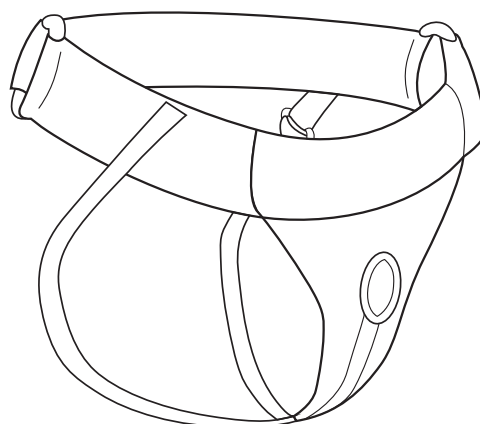


Fig. 4. Strap-on harness. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. *Sexual Devices: A Clinical Reference Guide*. Obstet Gynecol 2019.



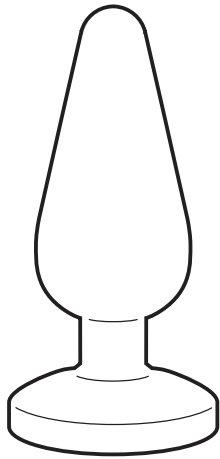


Fig. 5. Anal plug. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. *Sexual Devices: A Clinical Reference Guide*. Obstet Gynecol 2019.

of sexual devices sold are composed of porous, inexpensive rubber polymers of unknown composition that may be highly toxic or breakdown easily. Patients with latex allergies or those susceptible to contact dermatitis should be cautious when using these products. Rubber devices may breakdown if exposed to latex condoms and should instead be covered with polyurethane or nitrile barriers. Rubber devices should be stored individually in cool locations to avoid melting or distortions.

SAFETY

When used and cleaned appropriately, sexual devices are overall very safe with only rare adverse side effects. Safety concerns or adverse side effects generally fall into two categories: traumatic injury or infection.

Traumatic Injury

Although overall rare, traumatic injuries due to sexual devices have been documented.^{8,13,14} Objects retained in the rectum may be challenging to remove and sometimes require intervention from colorectal surgeons to facilitate removal.¹⁰ Sexual devices also can be retained in the vagina, though these usually can be removed in the office with bimanual, rectovaginal, or speculum examination. Long-term vaginal retention of a sexual device may serve as a nidus for infection if made from porous or quickly degrading material. Retained silicone sexual devices carry risks similar to pessaries, such as vaginal erosions, malodorous discharge, and bleeding. Long-term vaginal retention may rarely lead to vesicovaginal fistula.¹⁴

The risk of traumatic injury secondary to vigorous sexual device use has not been well studied. A large study found that 98.9% of women who had used a vibrator never experienced lacerations or physical injuries.² Moreover, 71.5% of those surveyed never experienced any type of adverse genital effect whatsoever.² Among the almost 30% of patients who experienced any side effects, these were generally self-resolving, and with no long-term implications.² Side effects that did occur included self-resolving numbness, irritation, inflammation and, rarely, pain.² Among those who experienced trauma, injuries self-resolved within a week.² Patients experiencing recurrent vulvovaginal irritation may have a contact dermatitis secondary to dyes or other chemicals in poorly manufactured devices.

Infection

Sexually transmitted infection, including viral and bacterial infections, can be transmitted through sexual device use. Human papillomavirus is of particular concern, because it can be detected on porous sexual devices more than 24 hours after cleaning and is associated with genital-to-oral autoinoculation with sexual devices.^{11,15} Though not yet investigated, herpes simplex virus transmission through sexual devices is similarly plausible. Patients should be instructed to avoid use during herpes simplex virus outbreaks. One case of human immunodeficiency virus transmission between cisgender women through vigorous shared sexual device use was documented.¹⁶ As they are commonly present in bodily fluids, chlamydia, gonorrhea, syphilis, and trichomoniasis also represent infections transmissible through noncoital sexual activity. Patients should be discouraged from sharing sexual devices with nonmonogamous partners and encouraged to disinfect sexual devices between partners and use barriers as risk reduction strategies.

In women who have sex with women, bacterial vaginosis represents an STI and is associated with sharing sexual devices, increased frequency of use, and infrequent cleaning.^{17–19} Women who have sex with women should be strongly encouraged to clean sexual devices after each use and, if diagnosed with bacterial vaginosis, disinfect devices and abstain from use during treatment to prevent persistent infection.

Barriers and Personal Lubricants

Condoms play a substantial role in sexual device safety, though use is uncommon in studied cohorts of women who have sex with women.^{20–22} Other barriers, such as gloves, may also be repurposed to cover sexual devices. Some devices may have a “topper”



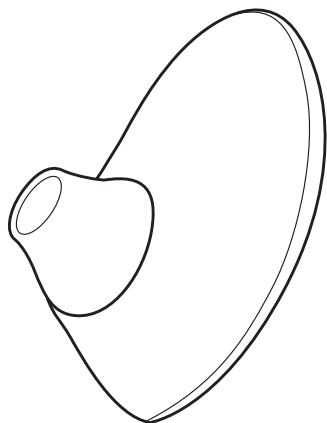


Fig. 6. Air pulsation device. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. Sexual Devices: A Clinical Reference Guide. Obstet Gynecol 2019.

option, in which a textured silicone covering is placed over the part of the device that touches the genitals. Condoms and other barriers reduce the infectious risks associated with multi-partner use and increase ease of cleaning and disinfecting. Studies on sheath-covered vaginal ultrasound probes, however, have shown high levels of persistent bacterial and viral contamination even after low level disinfection.^{23,24} Thus, it can be extrapolated that barrier use with insertive devices does not completely eliminate the risk of STI transmission.

Personal lubricants decrease the risk of discomfort or tears during sexual device use but should be chosen to ensure compatibility with both the material of the device and the barrier used. Silicone sexual devices should not be used with silicone lubricants, including silicone prelubricated condoms, because the chemical interaction can cause material breakdown. Similarly, oil-based lubricants, polyisoprene or latex condoms, and latex or rubber sexual devices are all

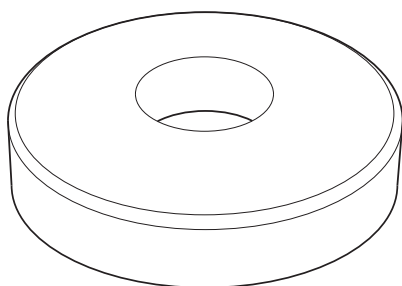


Fig. 7. Collision dyspareunia device. Illustration by Jonathan R. Matusky. Used with permission.

Rubin. Sexual Devices: A Clinical Reference Guide. Obstet Gynecol 2019.

noncompatible and may cause condom breakage or material degradation. Water-based lubricants are compatible with all materials and all condoms. Table 1 illustrates lubricant compatibilities.

CLEANING AND DISINFECTION

Patients commonly have questions about how and when to clean or disinfect sexual devices.^{21,25} Whereas cleaning involves removal of discharge and debris with soap and water, disinfection refers to processes that remove transmissible pathogens. Women report that a primary motivation to clean sexual devices is to avoid transmission of STIs.²¹ Little research exists regarding efficacy for cleaning and disinfection techniques of sexual devices. Available research show persistence of HPV on porous and nonporous devices after washing and suggests only limited cleaning by most users.^{2,11,21} As such, patients should be counseled to clean sexual devices after every use. Sexual devices can be cleaned with mild soap and warm water with either submersion (if waterproof) or wiping with a washcloth. Harsh soaps with fragrance may linger on devices and cause vulvovaginal irritation. Patients who experience irritation after use of sexual devices designed from hypoallergenic materials may benefit from more thorough rinsing. Although specific sexual device cleaning soaps and wipes can be purchased, it has not been studied whether these are more effective than soap and water.

As there are no research studies directly supporting any specific sexual device disinfection techniques, patients should be counseled to use barriers, such as condoms, if sharing sexual devices.²⁶ Recommendations can be extrapolated from disinfection of other medical devices, and patients should be counseled to use disinfection methods between nonmonogamous partners or if diagnosed with a STI, vulvovaginal candidiasis, or bacterial vaginosis. Only nonporous materials can be disinfected. Complete destruction of all microbes and spores is only achievable with an autoclave or other high level chemical sterilants, though this is not feasible for the vast majority of patients.²⁷ Per the Centers for Disease Control and Prevention, disinfection of home care items can be performed by submersion in a dilute household bleach (0.5% sodium hypochlorite) solution for 3 minutes or 70% isopropyl alcohol for 5 minutes.²⁸ Isopropyl alcohol however, may not inactivate HPV.²⁹ Patients should be counseled to thoroughly wash devices after disinfecting with chemicals before contact with mucosal surfaces.

Device manufacturers and retailers commonly recommend disinfection of silicone or stainless steel



Table 1. Lubricant Compatibilities

Lubricant Type	Latex Condoms	Silicone Devices	Glass, Ceramic, Metal, or Plastic Devices	PVC Jelly Rubber, TPE, Silicone Blend, or Cyberskin Devices	Nonlatex Condoms
Silicone	Yes	No	Yes	No	Variable*
Water	Yes	Yes	Yes	Yes	Yes
Oil	No	Yes	Yes	No	Variable*

PVC, polyvinyl chloride; TPE, thermoplastic elastomer.

* Polyisoprene condoms are similar to latex and should not be used with oil-based lubricants. Polyurethane condoms are not compatible with some silicone lubricants, as indicated by manufacturers. Nitrile or lambskin barriers are compatible with all lubricants.

devices using boiling water or a dishwasher on sanitize mode. Though most enteric bacteria are destroyed by boiling, this temperature is far lower than that of an autoclave. Glass and plastic devices and those with internal electrical components are heat sensitive and should not be boiled. Bleach and alcohol may be corrosive to some products and patients should consult manufacturers' recommendations. Ultraviolet light sterilization units specifically for sexual devices are now being sold. Although ultraviolet light is effective to inactivate HPV, it is not possible for consumers to verify the authenticity of these products.³⁰ Sexual device disinfection methods commonly recommended by manufacturers and retailers and their limitations are outlined in Table 2.

SPECIFIC PATIENT POPULATIONS

Pregnancy and Postpartum

Conditions in pregnancy such as placenta previa or presence of cerclage may preclude penetrative sexual activity. In this setting, external stimulation from a vibrator can be helpful to maintain partner intimacy. Some providers may be concerned regarding theoretical risk of orgasm-induced uterine contractions, however this has not been well studied and no adverse fetal outcomes have been reported.^{31,32} Pregnant women without contraindication to sexual activity or vaginal penetration may benefit from sexual device use during a time when a gravid uterus can hinder certain sexual positions or make intercourse and masturbation more challenging.³²

The hypoestrogenism of the postpartum period coupled with discomfort and postoperative healing from an obstetric laceration may delay resumption of vaginal penetration. Although external stimulation using a vibrator may be beneficial for this population, vaginal or anal penetration devices should be avoided, particularly after anal sphincter injury. A personal lubricant may facilitate sexual activity, including sexual device use, particularly for women who are hypoestrogenic owing to breastfeeding.

Disorders of Sexual Function

This category includes women who experience difficulty during any stage of normal sexual activity including desire, arousal, or orgasm as well as patients whose partners experience sexual dysfunction including erectile dysfunction.⁶ Although there is not one specific solution for all patients, anorgasmia can be treated with sexual devices, particularly external vibrators.^{5,33} Patients who prefer internal stimulation may benefit from a curved device designed for Grafenberg spot stimulation. Partner erectile dysfunction is a contributing factor to decreased sexual activity, and sexual devices can help couples expand their repertoire of noncoital sexual activity. Cisgender male partners can use strap-on dildos to continue familiar sexual activities, with some men reporting sexual pleasure and even orgasm.³⁴ Many other sexual device options exist for cisgender men with erectile dysfunction, including anal penetration devices, however a full review of such devices is outside the scope of the guide.

Pelvic Floor Dysfunction

Patients with pelvic floor dysfunction, including pain disorders, pelvic floor muscle hypertonus and spasm, vaginal stenosis, or prolapse may find benefit from nonpenetrative sexual device use.³⁵ External clitoral, vulvar, or anal stimulation devices should be considered, as well as devices designed to increase pleasure for their partner (eg, penetration sleeves or prostate stimulation devices). Patients with pelvic floor disorders who are undergoing pelvic floor physical rehabilitation may use vibrators as alternatives to medical dilators. Finally, patients with female genital mutilation may be able to stimulate remnant clitoral tissue beneath the prepuce using vibration.

Menopause

The hypoestrogenic state of menopause can negatively affect libido, genital sensitivity, and arousal. In



Table 2. Disinfection Methods and Limitations

Disinfection Method	Limitations
Submersion in diluted bleach solution for 3 min	May cause color change or chemical damage to some plastic devices Must be followed by a thorough water rinse to remove bleach residue Not recommended by some manufacturers
Submersion in 70% isopropyl alcohol for 5 min	Not recommended by some manufacturers Potentially ineffective against HPV
Submersion in boiling water for 10 min	Silicone and metal devices only Not suitable for units with electronics or batteries Will not destroy microbes surviving above 100°C
Dishwasher on sanitize mode	Silicone and metal devices only Not suitable for units with electronics or batteries Will not destroy microbes surviving above 100°C
Ultraviolet light units	Difficult to validate individual manufacturer authenticity

HPV, human papillomavirus.

addition, vaginal atrophy and dryness can induce dyspareunia and make penetrative sex challenging. Educating postmenopausal women on lubrication and sexual devices can help improve their sexual experience. Postmenopausal women can have difficulties with masturbating due to arthritis, limited mobility, and vision loss. Vibrators and dildos designed with more user-friendly handles and larger buttons exist for this population.

Oncology

Sexual dysfunction is widely prevalent among cancer survivors, approaching 90% in gynecologic cancers, as a result of chemotherapy, pelvic radiation, and surgery.³⁶ Physical changes may occur after treatment of gynecologic cancers, including vaginal stenosis secondary to radiation, partial or complete vulvectomy or vaginectomy, or reduced arousal-associated vaginal blood flow due to damaged hypogastric nerves at the time of radical hysterectomy.^{37,38} Medications such as anastrozole and tamoxifen may affect libido and vaginal lubrication, and gonadotoxic chemotherapy or oophorectomy may put young women into symptomatic early menopause.^{36,39} For these patients, sexual aids represent part of a comprehensive treatment for their sexual disorders.³⁹

Disability and Chronic Illness

Congenital and acquired disability may affect patients' ability to express and enjoy themselves sexually by affecting patients' sexual function, sensation, and overall mobility.^{41,42} Type of sexual devices used varies for different disabilities, but is associated with improved sexual function.⁴¹ Patients with arthritis or limited dexterity can use hand or thigh harnesses to use penetrative devices if unable to move their hands,

fingers, or hips effectively. Bolsters and straps designed to aid in positioning are also available, some of which include mounts for vibrators or dildos. Box 4 lists common conditions that affect sexual function and which may benefit from sexual device use.

Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Asexual Patients

Patients in the LGBTQIA community report greater sexual device use than their cisgender heterosexual counterparts.^{22,43–44} Clinicians should be wary of the tendency to label certain devices as “gay” sexual devices as this may be negatively perceived by LGBTQIA patients and undermines the benefit such devices may have for cisgender heterosexual patients. Dildos or strap-on devices can be used in circumstances where the insertive partner does not have a penis or has a penis incapable of sufficient erection for penetration. For example, same-sex partnered women may find that using a strap-on dildo allows for hands-free vaginal penetration. Transgender men and gender nonconforming individuals may use a strap-on device for gender-congruent sexual expression. Transgender women may be unable to achieve erection while on estrogen therapy or have undergone penectomy but still desire an insertive sexual role.

Adolescents

Similar to adults, adolescents may want to use sexual devices for masturbation or with partners. Laws vary by state; however, adolescents rarely have the ability or access to purchase sexual devices online or in adult stores. Regardless, adolescents may still use sexual devices either purchased by a friend or family member or repurposed from a nonsexual item (eg, vibrating back massager, vibrating toothbrush).



Box 4. Disabilities and Chronic Conditions Whose Patient Populations May Benefit From Sexual Device Use

- Multiple sclerosis
- Diabetic peripheral neuropathy
- Cerebral palsy
- Spinal cord lesion or injury
- Parkinson's disease
- Spina bifida
- Peripheral vascular disease
- Paraplegia
- Arthritis
- Depression

Gynecologists have a crucial role to inform and educate adolescents regarding safe sexual device use while maintaining confidentiality and a nonjudgmental environment.

PURCHASING

Providers are uniquely positioned to assist patients in making safe sexual device purchases. Sexual devices are largely sold online, in adult retail shops, in some pharmacies, and at “home sex toy parties” (facilitated parties to learn about and purchase sexual devices).^{25,45} Although it is unrealistic for clinicians to know about all sexual devices on the market, referring patients to stores with explicit educational missions or that employ sex educators for store-based classes can help patients navigate this unregulated industry.⁴⁵ Similarly, patients can be referred to websites with safety-minded inventory or medical professional oversight, or vetted home parties arranged by facilitators with sexual health knowledge.²⁵

CONCLUSION

Knowledge about sexual devices is important for obstetrics and gynecology clinicians to help educate patients regarding use, counsel about cleaning and disinfection, and assist in safe material and product selection. Discussions about a patient's sexual wellness may also engender provider trust and facilitate rapport. Screening for sexual device use is an important aspect of preventative women's health, given the adverse consequences of improper use, handling, and hygiene. In certain patient populations, sexual devices can be beneficial for sexual health.

REFERENCES

1. Jannini EA, Limoncin E, Ciocca G, Buehler S, Krychman M. Ethical aspects of sexual medicine. Internet, vibrators, and other sex aids: toys or therapeutic instruments? *J Sex Med* 2012;9:2994–3001.
2. Herbenick D, Reece M, Sanders S, Dodge B, Ghassemi A, Fortenberry JD. Prevalence and characteristics of vibrator use by women in the United States: results from a nationally representative study. *J Sex Med* 2009;6:1857–66.
3. Schick V, Herbenick D, Rosenberger JG, Reece M. Prevalence and characteristics of vibrator use among women who have sex with women. *J Sex Med* 2011;8:3306–15.
4. Herbenick D, Reece M, Sanders SA, Dodge B, Ghassemi A, Fortenberry JD. Women's vibrator use in sexual partnerships: results from a nationally representative survey in the United States. *J Sex Marital Ther* 2010;36:49–65.
5. Marcus BS. Changes in a woman's sexual experience and expectations following the introduction of electric vibrator assistance. *J Sex Med* 2011;8:3398–406.
6. Kingsberg SA, Althof S, Simon JA, Bradford A, Bitzer J, Carvalho J, et al. Female sexual dysfunction—medical and psychological treatments, committee 14. *J Sex Med* 2017;14:1463–91.
7. Addressing health risks of noncoital sexual activity. Committee Opinion No. 582. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2013;122:1378–82.
8. Aaronson DS, Shindel AW. Advocating for safer use of sexual enhancement products. *J Sex Med* 2010;7:2285–7.
9. Herbenick D, Barnhart KJ, Beavers K, Bengt S. Vibrators and other sex toys are commonly recommended to patients, but does size matter? Dimensions of commonly sold products. *J Sex Med* 2015;12:641–5.
10. Dahlberg M, Nordberg M, Pieniowski E, Bostrom L, Sandblom G, Hallqvist-Everhov A. Retained sex toys: an increasing and possibly preventable medical condition. *Int J Colorectal Dis* 2019;34:181–3.
11. Anderson TA, Schick V, Herbenick D, Dodge B, Fortenberry JD. A study of human papillomavirus on vaginally inserted sex toys, before and after cleaning, among women who have sex with women and men. *Sex Transm Infect* 2014;90:529–31.
12. Horan TS, Pulcastro H, Lawson C, Gerona R, Martin S, Gieske MC, et al. Replacement bisphenols adversely affect mouse gametogenesis with consequences for subsequent generations. *Curr Biol* 2018;28:2948–54.e3.
13. Friedman MA, Shaw JS, McGary K, Wohlrab K. Vesicovaginal fistula: an unexpected consequence of changing sexual practices? *Sex Health* 2017;14:394–6.
14. Donaldson JF, Tait C, Rad M, Walker S, Lam TB, Abdel-Fattah M, et al. Obstructive uropathy and vesicovaginal fistula secondary to a retained sex toy in the vagina. *J Sex Med* 2014;11:2595–600.
15. Cook RL, Thompson EL, Kelso NE, Friary J, Hosford J, Barkley P, et al. Sexual behaviors and other risk factors for oral human papillomavirus infections in young women. *Sex Transm Dis* 2014;41:486–92.
16. Kwakwa HA, Ghobrial MW. Female-to-female transmission of human immunodeficiency virus. *Clin Infect Dis* 2003;36:e40–1.
17. Mitchell C, Manhart LE, Thomas KK, Agnew K, Marrazzo JM. Effect of sexual activity on vaginal colonization with hydrogen peroxide-producing lactobacilli and *Gardnerella vaginalis*. *Sex Transm Dis* 2011;38:1137–44.
18. Marrazzo JM, Koutsky LA, Eschenbach DA, Agnew K, Stine K, Hillier SL. Characterization of vaginal flora and bacterial vaginosis in women who have sex with women. *J Infect Dis* 2002;185:1307–13.
19. Marrazzo JM, Thomas KK, Agnew K, Ringwood K. Prevalence and risks for bacterial vaginosis in women who have sex with women. *Sex Transm Dis* 2010;37:335–9.



20. Rowen TS, Breyer BN, Lin TC, Li CS, Robertson PA, Shindel AW. Use of barrier protection for sexual activity among women who have sex with women. *Int J Gynaecol Obstet* 2013;120:42–5.
21. Marrazzo JM, Coffey P, Bingham A. Sexual practices, risk perception and knowledge of sexually transmitted disease risk among lesbian and bisexual women. *Perspect Sex Reprod Health* 2005;37:6–12.
22. Schick V, Rosenberger JG, Herbenick D, Reece M. Sexual behaviour and risk reduction strategies among a multinational sample of women who have sex with women. *Sex Transm Infect* 2012;88:407–12.
23. Aryanti C. Contamination level of transvaginal ultrasound probes in standard setting: a meta-analysis. *Natl J Physiol Pharm Pharmacol* 2017;7:1–12.
24. M'Zali F, Bounizra C, Leroy S, Mekki Y, Quentin-Noury C, Kann M. Persistence of microbial contamination on transvaginal ultrasound probes despite low-level disinfection procedure. *PLoS One* 2014;9:e93368.
25. Herbenick D, Reece M. In-home sex toy party facilitators as sex educators: what questions are they asked and what makes them more askable? *Am J Sex Educ* 2009;4:178–93.
26. Combs CA, Fishman A. A proposal to reduce the risk of transmission of human papilloma virus via transvaginal ultrasound. *Am J Obstet Gynecol* 2016;215:63–7.
27. Rutala WA, Weber DJ. Disinfection and sterilization in health care facilities: what clinicians need to know. *Clin Infect Dis* 2004;39:702–9.
28. Centers for Disease Control and Prevention. Disinfection and sterilization guideline. Available at: <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/#r11>. Retrieved October 30, 2018.
29. Meyers J, Ryndock E, Conway MJ, Meyers C, Robison R. Susceptibility of high-risk human papillomavirus type 16 to clinical disinfectants. *J Antimicrob Chemother* 2014;69:1546–50.
30. Meyers C, Milici J, Robison R. UVC radiation as an effective disinfectant method to inactivate human papillomaviruses. *PLoS One* 2017;12:e0187377.
31. Goodlin RC, Keller DW, Raffin M. Orgasm during late pregnancy. Possible deleterious effects. *Obstet Gynecol* 1971;38:916–20.
32. Millheiser L. Female sexual function during pregnancy and postpartum. *J Sex Med* 2012;9:635–6.
33. American College of Obstetricians and Gynecologists. FAQ072: your sexual health. Available at: <https://www.acog.org/Patients/FAQs/Your-Sexual-Health>. Retrieved February 9, 2019.
34. Warkentin KM, Gray RE, Wassersug RJ. Restoration of satisfying sex for a castrated cancer patient with complete impotence: a case study. *J Sex Marital Ther* 2006;32:389–99.
35. Zolnoun D, Lamvu G, Steege J. Patient perceptions of vulvar vibration therapy for refractory vulvar pain. *Sex Relation Ther* 2008;23:345–53.
36. Huffman LB, Hartenbach EM, Carter J, Rash JK, Kushner DM. Maintaining sexual health throughout gynecologic cancer survivorship: a comprehensive review and clinical guide. *Gynecol Oncol* 2016;140:359–68.
37. Bakker RM, Pieterse QD, Van Lonkhuijzen LRCW, Trimbos BJB, Creutzberg CL, Kenter GG, et al. A controlled study on vaginal blood flow during sexual arousal among early-stage cervical cancer survivors treated with conventional radical or nerve-sparing surgery with or without radiotherapy. *Int J Gynecol Cancer* 2017;27:1051–7.
38. Abbott-Anderson K, Kwekkeboom KL. A systematic review of sexual concerns reported by gynecological cancer survivors. *Gynecol Oncol* 2012;124:477–89.
39. Cameron KE, Kole MB, Sammel MD, Ginsberg JP, Gosiengfiao Y, Mersereau JE, et al. Acute menopausal symptoms in young cancer survivors immediately following chemotherapy. *Oncology* 2018;94:200–6.
40. Brotto LA, Heiman JR, Goff B, Greer B, Lentz GM, Swisher E, et al. A psychoeducational intervention for sexual dysfunction in women with gynecologic cancer. *Arch Sex Behav* 2008;37:317–29.
41. Smith AE, Molton IR, McMullen K, Jensen MP. Sexual function, satisfaction, and use of aids for sexual activity in middle-aged adults with long-term physical disability. *Top Spinal Cord Inj Rehabil* 2015;21:227–32.
42. Orasanu B, Frasure H, Wyman A, Mahajan ST. Sexual dysfunction in patients with multiple sclerosis [published corrigendum appears in *Mult Scler Relat Disord* 2013;2:259]. *Mult Scler Relat Disord* 2013;2:117–23.
43. Schick V, Dodge B, Van Der Pol B, Baldwin A, Fortenberry JD. Sexual behaviours, sex toy and sexual safety methods reported by women who have sex with women and men. *Sex Health* 2015;12:287–99.
44. Rosenberger JG, Schick V, Herbenick D, Novak DS, Reece M. Sex toy use by gay and bisexual men in the United States. *Arch Sex Behav* 2012;41:449–58.
45. Reece M, Herbenick D, Sherwood-Puzzello C. Sexual health promotion and adult retail stores. *J Sex Res* 2004;41:173–80.

PEER REVIEW HISTORY

Received December 19, 2018. Received in revised form February 13, 2019. Accepted March 7, 2019. Peer reviews and author correspondence are available at <http://links.lww.com/AOG/B370>.

