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Society of Family Planning clinical recommendations: Contraceptive counseling for transgender and gender diverse people who were female sex assigned at birth ☆,☆☆

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ABSTRACT

Everyone of reproductive potential, no matter sex or gender, may have contraceptive needs. However, with no professional society guidelines and scant data on contraceptive use for transgender and gender-diverse (TGD) populations, clinicians' abilities to counsel patients on use, safety, side effects, and efficacy is severely limited. We know very little about how estrogen- and progestin-containing contraceptive methods interact with gender-affirming testosterone therapy. Consequently, providers must extrapolate from data on use of hormonal contraceptive methods in presumed cisgender women and rely on clinical expertise. Based on available literature and expert opinion, there are important considerations for each method that can help guide contraceptive counseling with TGD patients.

Specific considerations include differential experience of side-effects in TGD patients, barriers to access, and potential misconceptions regarding menstruation and reproductive capacity. When counseling a TGD person about their contraception options, providers should engage in shared decision-making, acknowledging the spectrum of identities and experiences within these communities. In order to support gender-affirming patient-centered care, providers should also create a space that is welcoming, use language that promotes inclusivity, and perform physical exams that consider the potential physical and emotional discomforts specific to these patients. Given the lack of population-specific data and guidelines, we encourage providers to integrate what is known about contraceptive use in cisgender women with the unique needs of TGD persons to apply a shared decision-making contraceptive counseling approach with members of these communities.

1. Background

Reproductive health care providers should support the family planning needs of all patients, regardless of their gender identity. The term *transgender* refers to people whose gender identity differs from their sex assigned at birth (*e.g.,* transgender men identify as men or on the masculine spectrum and were assigned a female sex at birth). Up to 0.6% of the U.S. adult population (1.4 million people) and an estimated 2–6% of adolescents and teens identify as transgender, though these are likely underestimates of the true number of transgender individuals given the challenges of acquiring representative national statistics [1–3]. The term *cisgender*

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refers to people whose gender identity is congruent with their sex assigned at birth (*e.g.,* cisgender men identify as men or on the masculine spectrum and were assigned a male sex at birth; cisgender women identify as women or on the feminine spectrum and were assigned a female sex at birth).

Extrapolations from the largest existing survey of transgender people, completed by nearly 28,000 individuals, showed that among respondents who were assigned a female sex at birth, approximately half identified as men or transgender men and the other half identified as non-binary or genderqueer rather than within the binary of male or female [4]. Non-binary or genderqueer individuals may include persons who identify with a gender other than male or female, with more than one gender, or with no gender. For the purposes of these recommendations, we will be discussing an approach to contraceptive counseling for transgender and gender diverse (TGD) individuals who were female sex assigned at birth. This is meant to include anyone whose current gender identity differs from their female sex assigned at birth, which includes but is not limited to transgender men, transmasculine people, men of transmasculine experience, and individuals who identify as genderqueer, two-spirit, or non-binary. The exception will be when referring to other publications wherein we will use the terminology provided by the authors to reflect their work.

Gender identity and sexual orientation are discrete domains. Gender identity is one's internal felt sense of masculinity, femininity, or having another gender entirely. Sexual orientation pertains to the sex or gender of the person(s) to whom an individual is sexually or romantically attracted and/or with whom they engage sexually. Among TGD individuals, people identify across the sexual orientation spectrum with many identifying as asexual (no sexual attraction), bisexual (attraction to both sexes/genders), gay/lesbian/same-gender loving (attraction to the same sex/gender), pansexual (attraction to people regardless of sex/gender), queer (attraction that is not heterosexual but not otherwise specified), straight/heterosexual (attraction to the opposite gender), or another sexual orientation [4]. However, sexual orientation and/or identity may not align with sexual behavior [5]. The diversity of gender identities and sexual orientations leads to a variety of potential sexual interactions between individuals with different gender identities, sexual orientations, and reproductive organs.

TGD individuals express their identity and undergo gender-affirming steps (or "transition") in different ways [4,6]. Some individuals undertake legal and social steps to alter gender markers and outwardly present as their self-identified gender, and some use gender-affirming hormone therapy or surgery to align their physical bodies with their gender identity, but many do not. Approximately half of all TGD individuals surveyed had used gender-affirming hormones and one quarter had undergone at least one gender-affirming surgical procedure, with use of hormone or surgical therapies less prevalent among gender non-binary individuals compared to transgender men [4,6]. Hormone therapy provides mental health benefits for many TGD individuals, including decreased suicide rates and improved quality of life [7–9]. Furthermore, compared to patients who desire but have little or no treatment, patients who desire and receive more extensive gender-affirming treatments experience greater body-gender congruence, higher body image satisfaction, and lower rates of anxiety and depression [9].

Few studies have looked at reproductive health outcomes for TGD individuals, and even fewer describe the existence or experiences of people with non-binary identities. The lack of reproductive health data is due, in part, to compulsory sterilization protocols that have restricted the reproductive freedom of many TGD individuals [10]. In many European countries, gender-affirming surgeries are more readily performed and often include steps that result in surgical sterilization such as oophorectomy and hysterectomy [8,11]. These surgeries are often covered by national health care plans and, in some countries, are required as part of gender-affirming therapy, even if not desired by the individual [12]. The European Court of Human Rights ruled in 2017 that requiring sterilization for legal gender recognition violates human rights [13]. Many U.S. states also require proof of surgery for legal gender marker changes [14]. However, only 8% of TGD individuals in the United States have had a hysterectomy [15]. Since many TGD people in the U.S. retain their reproductive organs, pregnancy can occur.

Many TGD individuals desire pregnancy at some point in their lifetime [15–17]. For some, pregnancy may pose challenges that deserve additional support during the pre-conception, antepartum, and post-partum period. The teratogenic effects of exogenous testosterone are not well understood and data are limited to animal models and human case reports [18,19]. Nevertheless, The World Professional Association for Transgender Health's "Standards of Care" states testosterone therapy is considered an absolute contraindication in pregnancy [7]. Pregnancy may also put TGD individuals in challenging situations where their identity and/or gender expression come in conflict with social perception of what is considered appropriate for "men" and "women." These poor social experiences may cumulatively manifest in psychological and emotional challenges even when the pregnancy is desired [16,20,21]. Studies drawing from pregnant TGD patients' lived experiences outline both individual coping and health care-delivery strategies to mitigate the potential additional psychosocial risks that a TGD individual may experience during pregnancy compared to a cisgender individual [20,21]. Providers should also arrange additional support and resources for TGD patients who desire to chestfeed after delivery, especially when they have already had chest masculinization/top surgery (*i.e.*, chest contouring mastectomy where tissue is often retained) [22].

Some TGD individuals engage in sexual activity that could result in pregnancy, and some of these individuals do not want to be pregnant [15,17]. However, desire to avoid pregnancy does not necessarily correlate with contraceptive use [15]. TGD individuals may inconsistently use effective contraception for reasons that are similar to those of cisgender women, such as concern for side effects, lack of information regarding the relationship between vaginal bleeding and reproductive capacity, or difficulty accessing health care [4,23]. Additional factors likely include providers' lack of training or unwillingness to discuss reproductive desires with TGD patients [24,25]. If a pregnancy occurs, patients should be offered the full range of pregnancy management options, including comprehensive perinatal care or pregnancy termination, with support to ensure decisions match individual values and desires.

Appropriate contraceptive counseling can help individuals match their contraceptive use with their family planning values and reproductive goals. Discussions around contraception are common practice for most reproductive health care providers. In the last decade, evidence has emerged in support of a contraceptive counseling approach using shared decision-making, which has been associated with greater patient satisfaction in the chosen contraceptive method compared to patient-driven or provider-driven decision making [26]. Some contraceptive counseling tools and quality assessment strategies have moved away from a "Reproductive Life Planning" framework that may alienate people who do not conform to normative expectations of pregnancy planning in favor of a patient-centered counseling framework that focuses on interpersonal communication [27–29].

Engaging in patient-centered care also requires use of language and terminology that is gender-inclusive for body-parts, processes, and procedures. The care of TGD individuals may be especially enhanced by an assessment of language used in clinical encounters that reflects patients' needs and assessment of their own bodies,

and demonstrates an understanding of the common experiences and terminology used by TGD people. This specifically may include using alternate language for body-parts, such as *frontal genital opening* or *internal canal* instead of *vulva/vagina*, or referring to *mammary tissue* as *chest* rather than *breast tissue* [30].

One specific patient-centered method for identifying the individual needs of each patient is the use of PATH questions (Pregnancy/Parenthood, Attitude, Timing, and How important is pregnancy prevention), which include: 1) Do you think you might like to have (more) children at some point? 2) When do you think that might be? 3) How important is it to you to prevent pregnancy (until then)? [27,31]. These questions can be used for people of any gender and any sexual orientation and can help guide the conversation in an appropriate and helpful direction. However, more study is necessary to determine the use and acceptability of contraceptive counseling models when used with TGD patients.

The Reproductive Health Access Project recently released a patient-facing information chart titled, "Birth Control Across the Gender Spectrum" that adapts the original patient education tool to include considerations for patients on testosterone therapy, where available [32]. In this guideline, we draw from currently existing literature and expert opinion to provide a more in-depth review of each contraceptive method as it relates to use in TGD patients and present both patient-facing and provider-facing considerations to guide contraceptive counseling.

2. Clinical questions

2.1. What data exist to guide contraceptive counseling with TGD individuals who were assigned a female sex at birth?

There are limited data on the use patterns, safety, and efficacy of contraceptive methods among these populations. Commonly used resources for contraception counseling, such as the Centers for Disease Control's U.S. Medical Eligibility Criteria for Contraceptive Use (U.S. MEC) and U.S. Selected Practice Recommendations for Contraceptive Use (U.S. SPR), do not provide considerations for use of contraceptives for TGD patients, let alone in the setting of gender-affirming testosterone use [33,34]. In addition, though some professional guidelines broadly recommend contraception counseling for TGD individuals, there are limited published strategies for comprehensive contraceptive counseling with these patients [35–38].

Despite the lack of guidance, TGD individuals desire and use contraception. From a recent survey of 197 self-identified transgender men and transmasculine individuals, 60% of respondents reported current or past contraceptive use [17]. Condoms were the most commonly used method of contraception among TGD individuals, but other methods have been used as well [15,17]. Some TGD individuals use exogenous testosterone for gender-affirming therapy and may also use exogenous estrogen and progestins for both pregnancy prevention and regulation of bleeding [17,24,39,40]. To our knowledge, there are no data on the pharmacological interactions between gender-affirming testosterone and hormonal contraception. Therefore, providers should extrapolate from what is known about testosterone and these contraceptive methods separately to make decisions about how their interactions might affect patients [GRADE 2C].

2.2. What are the anticipated effects of gender-affirming testosterone use?

Gender-affirming testosterone can be taken orally, injected parenterally (subcutaneous or intramuscular), placed transdermally (as patch, gel, or cream), or implanted as subcutaneous pellets, with several different regimens currently in practice [30,41–43], although oral regimens are currently not recommended in the U. S. In the U.S., one common regimen is injection (intramuscular or subcutaneous) with testosterone cypionate 20–100 mg weekly [41]. The general goal of gender-affirming testosterone therapy is to develop the desired masculinizing secondary sex characteristics and to suppress or minimize female secondary sex characteristics [41,42]. Permanent effects include enlargement of the thyroid cartilage or "Adam's Apple," thickening of the vocal chords resulting in deepening of the voice, androgenic balding and body hair growth, and clitoral enlargement; reversible effects include cessation of menses, increased muscle mass, redistribution of body fat and weight gain, skin oiliness or acne, increased libido, genitourinary atrophy, and increased physical energy [7,42,44,45]. Some TGD patients, especially those who identify as non-binary, may use testosterone at lower doses or for shorter periods of time [4].

Expert clinical experience and ongoing long-term studies suggest gender-affirming testosterone therapy does not commonly pose any significant adverse effects, though guidelines suggest monitoring for sleep apnea, hypertension, excessive weight gain, salt retention, as well as lipid changes given the potential for decreased high-density lipoprotein, increased low-density lipoprotein, and increased triglyceride levels [7,41,42,46,47]. Gender-affirming testosterone use in TGD patients does not appear to cause decreased bone mineral density [48], nor does it appear to alter baseline risk of breast cancer or gynecological cancer [11,42,49]. As such, routine age-appropriate screenings are still warranted based on relevant body part(s) (*e.g.,* cervical cancer screening if the patient has a cervix, etc.). Exogenous testosterone does not appear to affect rates of thromboembolic disease in cisgender men [50–52] and, though poorly studied, has not been associated with increased risk of cardiovascular disease or venous thromboembolism in transgender men [47,53]. The potential risks with testosterone therapy are primarily associated with excess use and sustained supratherapeutic levels [42]. Erythrocytosis (hematocrit >50%) is the primary adverse effect seen at elevated levels [42]. Historically, there has been a theoretical risk that elevated testosterone levels could lead to increased estrogen levels through peripheral aromatization and hormone conversion, but more recent studies suggest that testosterone therapy suppresses estradiol levels [46,54]. Overall, psychological benefits of testosterone therapy are thought to outweigh the relatively uncommon deleterious side-effects [7] [GRADE 1C].

2.3. Does gender-affirming testosterone therapy alone prevent pregnancy?

A 2016 survey of 197 self-identified transgender men and transmasculine individuals showed 16% of respondents were using gender-affirming testosterone as their method of contraception, a portion of which were doing so at the advice of a health care provider [17]. However, pregnancy has been reported in transgender men in the setting of amenorrhea or oligomenorrhea from recent testosterone therapy [16]. At physiologic levels, gender-affirming testosterone typically causes cessation of menses within one to six months, which is thought to be the result of complete or partial ovulation suppression and/or endometrial atrophy [39,41]. Increased levels of testosterone typically cause decreased levels of estrogen and sex hormone-binding globulin; there is also an associated decrease in concentrations of luteinizing hormone, follicle-stimulating hormone, and prolactin [39,46]. It is unclear how these changes affect the ovarian cycle for these patients. Emerging data suggest that testosterone therapy inhibits ovulation via hypothalamic–pituitary–gonadal suppression, albeit inconsistently [55]. Testosterone therapy can also have an inconsistent effect on the endometrial lining, with some patients developing

atrophic endometrium and others developing proliferative endometrium [39,45,56]. The menstruation patterns of TGD patients on testosterone therapy do not necessarily correlate with their ovulation status and reproductive potential; therefore, testosterone should not be used as a reliable contraceptive [GRADE 1B].

It is not known how the efficacy and effectiveness of hormonal and non-hormonal contraceptives are altered with the use of testosterone therapy. To our knowledge, no comprehensive systematic studies of contraceptive efficacy or effectiveness have been undertaken in the TGD population. It is possible that hormonal or non-hormonal contraceptive methods in combination with testosterone therapy could have greater efficacy and effectiveness than they do in cisgender women without exogenous testosterone, but more study is needed. Effectiveness is one characteristic that individuals might consider when choosing a contraceptive method, but it may not be the most important characteristic. Patients who prioritize effectiveness when choosing a method of contraception should be counseled based on available data for cisgender women from the Centers for Disease Control [57] with discussion on testosterone's additional effect on their ability to become pregnant [GRADE 2C].

2.4. How should persistent bleeding be evaluated in TGD individuals on gender-affirming testosterone therapy?

If amenorrhea is desired but not achieved after six months of initiating testosterone therapy, or if patients are amenorrhoeic on continuous testosterone therapy and then have return of bleeding, an evaluation for possible etiologies is warranted [38]. This evaluation should be performed as one would for cisgender women based on the patient's individual characteristics and risk factors [38]. This may include a medical history, physical examination, laboratory testing, and/or imaging studies [58]. In addition, providers should assess a mid-injection serum testosterone level and, if lower than physiologic cisgender male levels, consider increasing the patient's testosterone regimen [38] [GRADE 2C].

2.5. What are the anticipated effects of exogenous progestins when used in TGD individuals, including those on gender-affirming testosterone therapy?

Progestin-only contraceptives can cause secondary amenorrhea [59]. Similarly, progestins can also be used to limit bleeding and dysmenorrhea for TGD patients on testosterone therapy [17,24,36] [GRADE 1B]. In some European gender-affirming hormone protocols, progestins are used as adjuncts to initiation of testosterone therapy in order to more quickly induce amenorrhea [8,60].

The various progestins in contraceptives have differing levels of progestational, androgenic, and estrogenic activity [59], but the extent to which they interact with gender-affirming testosterone therapy and affect masculinization is unknown [60]. Progestins have a variable effect on serum lipid levels, with more androgenic progestins such as norethindrone, levonorgestrel, and gestodene being more likely to increase low-density lipoprotein and decrease high-density lipoprotein concentrations; other progestins such as norgestimate and drospirenone have the opposite effect [59], though there is unclear clinical significance to these changes [34]. It is also unclear how progestins affect the changes in lipid levels associated with testosterone therapy. Androgenic progestins also are more likely to cause side effects such as oily skin, acne, and facial hair growth [59]. There has been no compelling evidence to suggest that progestins alone pose a clinically significant increased risk of thromboembolic disease [61].

2.6. What are the anticipated effects of exogenous estrogen when used in TGD individuals, including those on gender-affirming testosterone therapy?

Estrogen-containing products, such as oral contraceptive pills, the transdermal patch, and the vaginal ring, can be used cyclically or continuously and have different resultant patterns of bleeding. When used in a cyclic fashion, with 21 or 24 days of hormones followed by a hormone-free interval, most cisgender women will have a withdrawal bleed in the hormone-free interval, whereas cisgender women who use these products in a continuous or extended cycle fashion do not have a scheduled withdrawal bleed [59]. In both cyclic and continuous use, cisgender women may experience unscheduled bleeding or spotting, but those who use these products continuously may have fewer total days of bleeding or spotting compared to those who use them in a cyclic fashion [62]. For cisgender women, the primary benefit of estrogen-containing contraceptives is improved cycle control [59]. There are no data on the bleeding patterns of TGD individuals who are amenorrhoeic from testosterone therapy and use these products. Expert clinical experience suggests that bleeding is unlikely to occur if amenorrhoeic on testosterone therapy and the products are used continuously [GRADE 2C].

Some TGD patients have concerns about the potential for estrogen-containing products to interfere with their gender-affirming hormone therapy [17]. In cisgender women, estradiol increases sex hormone binding globulin (SHBG) production from the liver, which binds circulating free testosterone [59]. It is unknown if TGD patients on testosterone therapy will also experience these changes. If so, it is possible that estrogen-containing contraceptives could interfere with the masculinizing effects of testosterone therapy, such as androgenic hair growth. There are also anecdotal reports of glandular breast tissue development in TGD individuals taking estrogen-containing products, even after top surgery.

Use of combined hormonal contraception also increases the risk of venous thromboembolism by three to six times in presumed cisgender women compared to non-use [63], but the absolute difference is small and has been considered clinically acceptable in the absence of other risk factors [33]. Currently there are no data regarding this risk in TGD individuals using gender-affirming testosterone therapy. Given the lack of data on potential risks, side effects, and benefits specific to TGD individuals using gender-affirming testosterone in combination with estrogen-containing contraceptives, it is reasonable to consider avoiding these products unless there is a clear benefit for the patient or strong patient preference.

For patients who choose to use estrogen-containing products, providers can consider products with a lower estrogen dose to reduce the risk of adverse effects, though there are no published data to support this decision and lower estradiol doses may lead to increased unscheduled bleeding. For example, if prescribing a combined oral contraceptive that contains ethinyl estradiol, providers can choose a pill that contains a lower daily dose of this hormone (10–20 μg) [59], though it is unclear if there are clinically significant benefits to this approach.

2.7. What non-hormonal contraceptive options are available for TGD patients?

For TGD patients who wish to avoid products that contain hormones, Table 1 reviews non-hormonal methods of contraception, all of which can be used for TGD patients, including those currently or previously on gender-affirming testosterone therapy [GRADE 1C]. It should be noted that, with the exception of the copper intrauterine device, the other methods in this table are considered

Table 1
Non-hormonal, reversible methods of contraception and associated patient and provider considerations for supporting contraceptive counseling with TGD individuals.

Copper T Intrauterine Device (IUD)
Material used: copper and polyethylene
Effectiveness (in cisgender women): 99.2% [59]

For patients:
- Requires office visit and speculum exam for placement and possibly for removal [64], but no other health care or pharmacy interactions during period of use.
- Cramping and spotting are common after placement [65].
- Per anecdotal reports, if on testosterone therapy and not bleeding at the time of placement, unlikely to have bleeding beyond the initial spotting.
- Can be used within five days of unprotected intercourse as emergency contraception.

For providers:
- Vaginal atrophy can occur after long-term gender-affirming testosterone administration [45]; for patient comfort, consider pre-treating patients with vaginal estrogen two weeks prior to placement [66,67].
- Consider offering to have the patient place the speculum to minimize discomfort [68].
- Cramping after placement may feel similar to menstrual cramps and may lead to feelings of distress for some patients [65].
- Bleeding can be prevented or treated using nonsteroidal anti-inflammatory drugs or tranexamic acid [69].
- Although endometrial atrophy can occur after long-term gender-affirming testosterone administration, there is no evidence of myometrial changes [45,56] so risk of uterine perforation is likely unchanged due to testosterone alone.

Diaphragm
Material used: silicone
Effectiveness (in cisgender women): 88% [59]

For patients:
- A newer one-size-fits-most diaphragm is available and does not require in-office fitting, though traditional brand diaphragms require an office visit and pelvic exam for fitting.
- Can be purchased online with a prescription.
- Can be placed up to six hours prior to intercourse and kept in place for six hours afterward.
- Should be used with a water-based spermicidal gel.
- Patients must be comfortable placing the diaphragm and its spermicidal gel in the vagina.
- Does not prevent sexually transmitted infections.

For providers:
- If using the fitted brand, note that some transgender patients are parous, and fitting is different after a person has had a vaginal delivery.
- Patients with vaginal atrophy may need ongoing vaginal estrogen treatment to minimize discomfort with placement/removal.
- Patients should be counseled that use of nonoxynol nine can have detrimental effects on lactobacillus, disrupt vaginal and rectal epithelial lining, and create sloughing that can cause epithelial ulceration [70–74].

External Condom
Material used: latex or non-latex (polyurethane, polyisoprene, or natural-membrane)
Effectiveness (in cisgender women): 82% [59]

For patients:
- Easy to purchase or obtain for free at many health clinics or organizations.
- Latex, polyurethane, and polyisoprene condoms help protect against sexually transmitted infections such as gonorrhea, Chlamydia, trichomoniasis, HIV, and reduces risk of herpes, bacterial vaginosis, and genital warts.
- Requires cooperation of sexual partner(s).
- Oil-based lubricants should not be used with latex or polyisoprene condoms, but water-based or silicone-based lubricants can be used.

For providers:
- Encourage use in combination with other methods of contraception to increase effectiveness.
- Patients with vaginal atrophy may need ongoing vaginal estrogen treatment if condom causes irritation, but oil-based estrogen formulations should not be used concurrently with latex or polyisoprene condoms.

Internal Condom (called "female condom" in some spaces)
Material used: nitrile, polyurethane, or latex
Effectiveness (in cisgender women): 79% [59]

For patients:
- Can be purchased without a prescription at many stores, online, or obtained for free at some health clinics/organizations, but less easy to find than external condoms. Many insurance providers cover with a prescription.
- Protects against sexually transmitted infections such as gonorrhea, Chlamydia, trichomoniasis, HIV, and reduces risk of herpes, bacterial vaginosis, and genital warts.
- Must be comfortable placing and removing the condom from the vagina.
- Can be placed before intercourse and removed any time after ejaculation.
- The external ring may increase stimulation of the clitoral nerves and enhance sexual arousal [75].

For providers:
- Harder to acquire than external condoms; prescription is not required but may help patients acquire without cost.
- Non-latex products do not require special storage conditions and are not weakened by oil-based lubricants or oil-based vaginal estrogen formulations.
- Only the nitrile condom is approved by the U.S. Food and Drug Administration.

Withdrawal
Method: Partner withdraws penis from vagina prior to ejaculation
Effectiveness (in cisgender women): 78% [59]

For patients:
- Requires cooperation of sexual partner(s).
- Not as reliable as other methods due to inconsistent ability or risk of unwillingness of partner to withdraw prior to ejaculation.

For providers:
- Effectiveness enhanced by partner communication to ensure high likelihood of partner cooperation.
- Adjunctive use of fertility awareness, condoms, or spermicide can increase effectiveness.

Sponge
Material used: polyurethane sponge with nonoxynol nine
Effectiveness (in cisgender women): 76% (parous) or 88% (nulliparous) [59]

For patients:
- Must be comfortable placing and removing the sponge from the vagina around the time of intercourse.
- Sold over-the-counter and online and does not require an office visit or pelvic exam.

For providers:
- Patients should be seen by a clinician if sponge breaks into pieces to ensure all pieces have been removed.
- Patients should be counseled that use of nonoxynol nine can have detrimental effects on lactobacillus, disrupt vaginal and rectal epithelial lining, and create sloughing that can cause epithelial ulceration [70–74].

Can be inserted up to 24 hours before sex, should be kept in for 6 hours after last penis-in-vagina sexual activity, and should not be worn for more than 30 hours in a row.
Avoid oil-based lubricants.

Fertility-Awareness Based Methods

Method: Tracking physiologic signs and symptoms to predict timing of ovulation and therefore when to avoid unprotected intercourse
Effectiveness (in cisgender women): 76% [59]

For patients:

Most methods require tracking monthly bleeding so are likely unreliable for people who do not bleed or have irregular bleeding.
Some methods require checking basal body temperature, cervical mucus, and/or cervical position.
Must be willing to avoid intercourse or use another method for the days surrounding ovulation.
Many phone apps are available to help track the signs and symptoms of ovulation, and they are being studied for effectiveness [76,77].

For providers:

Lower effectiveness for patients with irregular cycles [78], which may be more common for TGD people at baseline due to a variety of factors (*e.g.,* amenorrhoeic on testosterone therapy).

Spermicide

Material used: nonoxynol nine
Effectiveness (in cisgender women): 72% [59]

For patients:

Can be purchased at most general stores without a prescription.
May cause irritation of the vagina [59].
Needs to be reapplied prior to every sexual encounter.
Should not be used for anal intercourse.

For providers:

Not recommended for patients with recurrent or chronic bacterial vaginosis [70].
May increase the risk of HIV transmission, particularly for patients engaged in high-risk sexual activity [70].
Patients should be counseled that use of nonoxynol nine can have detrimental effects on lactobacillus, disrupt vaginal and rectal epithelial lining, and create sloughing that can cause epithelial ulceration [70–74].

to be the least effective contraceptives among presumed cisgender women [59].

2.8. What considerations should be made when using hormone-containing products?

Some patients consider estrogens and progestins to be "female hormones" that they want to avoid, but some patients find it acceptable to use products that only contain progestins [17]. For patients who desire a hormone-containing contraceptive, Table 2 reviews progestin-only methods of contraception and Table 3 reviews methods that contain both estrogen and progestin. Though more data are needed, hormone-containing contraceptives can be used for TGD patients, including those currently or previously on gender-affirming testosterone therapy, with consideration for commonly accepted medical contraindications in cisgender women [GRADE 1C].

2.9. Are there any special considerations for TGD patients who desire permanent contraception?

Permanent contraception has been reviewed separately in Table 4. Some patients may pursue tubal ligation or tubal removal for the primary benefit of contraception; for others, sterilization may be required as part of gender-affirming therapy, or a secondary and perhaps desired effect from gender-affirming surgery to remove internal organs (*i.e.,* hysterectomy and/or oophorectomy). For patients who have undergone fertility preservation treatments such as oocyte cryopreservation, embryo cryopreservation, or ovarian tissue cryopreservation, tubal sterilization is a highly effective method of contraception until attempting assistive reproductive technologies. However, patients should be counseled about the limited data on fertility treatments in TGD patients with unpredictable success rates [83] [GRADE 1C]. Providers should also make sure it is clearly documented in the medical record which of a patient's internal reproductive organs have and have not been removed so appropriate screening and medical care can be provided in the future.

2.10. How should providers approach contraception counseling with TGD patients?

It is imperative that reproductive health care providers welcome TGD individuals into their clinical settings and routinely offer family planning services to ensure that all patients interested in accessing contraceptive or preconception care have the opportunity to engage in conversations that consider the medical, social, and psychological factors unique to their circumstances. It is encouraging that national professional organizations such as the American College of Obstetricians and Gynecologists are starting to acknowledge the unique needs of TGD communities [36,85]; however, the diversity of sexual experiences and sexual and reproductive health needs within these communities is underappreciated. Given the lack of data on use of and experience with contraception among TGD people, providers are limited in their ability to provide evidence-based information to patients. Emphasis should be placed on shared decision-making, which combines both informed choice and directive counseling models, allowing providers to explore patient preferences and priorities regarding characteristics of the different methods of contraception [26] [GRADE 1C].

When providing contraceptive counseling to TGD patients, it is important to elicit individual values as they relate to pregnancy prevention and how different methods of contraception fit within their lives. Patients with similar TGD identities have not necessarily had the same life experiences in relation to gender. For example, TGD individuals as a whole are more likely to have experienced prior sexual abuse and violence, which may cause emotional distress during pelvic exams [30] and lead patients to choose a method where an exam is not required. However, this is not universally true. TGD people are also more likely to have experienced discrimination within the health care system, which may lead patients to choose a method that requires fewer office visits.

Some TGD patients may want to avoid "feminine" triggers that are not congruent with their gender identity. This may mean avoiding oral contraceptives which come in a "pack of pills" or avoiding methods that cause bleeding or cramping, which could be associated with female reproduction [67]. In addition, patients

Table 2
Progestin-only methods of contraception and associated patient and provider considerations for supporting contraceptive counseling with TGD individuals.

Subcutaneous Implant
Hormone used: etonogestrel
Effectiveness (in cisgender women): 99.95% [59]

For patients:
- Requires office visit for placement and removal, but genital exam not necessary; requires no other health care or pharmacy interactions during use.
- Decreases menstrual bleeding in most cisgender women, though irregular bleeding is the most common side effect for cisgender women [59].
- Palpable and may be visible in very muscular or thin individuals.

For providers:
- Bothersome bleeding can be managed with supplemental estrogen and prostaglandin inhibitors such as ibuprofen or naproxen [59], but expert clinical experience suggests irregular bleeding is less likely for patients already amenorrhoeic on testosterone therapy.
- Expert clinical experience suggests that the implant has a synergistic ability to induce amenorrhea more rapidly when initiating testosterone therapy.

Levonorgestrel-containing Intrauterine System (IUS)
Hormone used: levonorgestrel (LNG)
Effectiveness (in cisgender women): 99.8% [59]

For patients:
- Four products currently available: two LNG 52 mg IUS that are effective for up to 7 years, one LNG 19.5 mg IUS that is effective for up to 5 years, and one LNG 13.5 mg IUS that is effective for up to 3 years [59].
- Requires office visit and speculum exam for placement and possibly for removal [64], but no other health care or pharmacy interactions during period of use.
- Can help reduce chronic pelvic pain and painful bleeding [59], but some cramping can occur after placement [65].
- Can cause irregular spotting in cisgender women (more likely with lower dose devices) [59], but irregular bleeding less likely if already amenorrhoeic on testosterone therapy.
- Can help induce amenorrhea when initiating testosterone therapy.

For providers:
- Vaginal atrophy can occur after long-term gender-affirming testosterone administration [45]; for patient comfort, consider pre-treating patients with vaginal estrogen two weeks prior to placement [66,67].
- Consider offering to have the patient place the speculum to minimize discomfort [68].
- Cramping after placement may feel similar to menstrual cramps and may lead to feelings of distress for some patients [65].
- Although endometrial atrophy can occur after long-term gender-affirming testosterone administration, there is no evidence of myometrial changes [45] so risk of uterine perforation is likely unchanged due to testosterone alone.

Injectable (Intramuscular or Subcutaneous)
Hormone used: depot medroxyprogesterone acetate
Effectiveness (in cisgender women): 94% [59]

For patients:
- Intramuscular injection requires office visits every three months, but no genital exam.
- Can help induce amenorrhea when initiating testosterone therapy, potentially more rapidly than other progestin-only methods.
- Is not able to be reversed once it is injected.

For providers:
- Can cause weight gain in some patients [59]; consider avoiding in patients experiencing weight gain with gender-affirming testosterone use.
- Can cause clinically insignificant changes to lipoprotein profiles [34]; consider closer monitoring of serum lipid levels in patients experiencing lipid changes with gender-affirming testosterone use.
- Once method is discontinued, there may be a delay in reversal of contraceptive effects or potential side effects due to long duration of action from time of injection.
- Subcutaneous self-injection at home is possible [79]; consider for patients who want to limit interactions with health care systems or have other barriers to office visits.

Progestin-Only Pill
Hormone used: norethindrone or drospirenone
Effectiveness (in cisgender women): 91% [59]

For patients:
- Some providers may prescribe to established patients without an office visit.
- The pill containing norethindrone must be taken at nearly the exact same time every day to be effective [59]. All pills in these packs must be taken; there are no hormone-free pills.
- The pill containing drospirenone is taken for 24 days continuously, followed by 4 hormone-free days.
- Less likely to support amenorrhea compared to other progestin-only methods.

For providers:
- Drospirenone is an anti-androgenic and antimineralocorticoid analog of spironolactone and may potentially interact/interfere with testosterone therapy more than norethindrone [59].
- A "pack of pills" may be a distressful "feminine association" for some patients. Patients using daily testosterone therapy (*e.g.,* topical) may already have a routine that makes it especially easy to reliably take a pill at the same time every day.

Emergency Contraception (EC)
Options include: Hormonal pills (levonorgestrel [LNG] or ulipristal acetate [UPA]) and non-hormonal (copper T IUD)

For patients:
- Copper T IUD is the most effective method of EC with a failure rate of 0.08% in cisgender women [80]; LNG EC is the least effective method of EC with a failure rate of 0.3 to 2.6% in cisgender women [80].
- Can be used up to 120 hours after unprotected intercourse or intercourse during which failure of other contraceptive methods occurs, but more effective if used as soon as possible after intercourse.
- Levonorgestrel EC is available without a prescription but covered by many insurance companies with a prescription.
- If already pregnant, hormonal EC is not effective but will not harm the pregnancy.

For providers:
- Unlikely to interfere with testosterone therapy, and testosterone therapy is unlikely to decrease the effectiveness of hormonal EC [81].
- UPA EC is more effective than LNG EC for patients who are overweight or obese [80]. If a patient with obese weight is going to use LNG EC, consider doubling the dose to 3.0 mg for potentially increased effectiveness [80].

who feel disconnected from their reproductive organs may not be comfortable placing or removing products from their vagina.

Some TGD individuals engage in higher risk sexual behavior and should be counseled about methods that adequately protect against HIV transmission and other sexually transmitted infections. Providers should also engage in conversations about PrEP (pre-exposure prophylaxis) and PEP (post-exposure prophylaxis) for patients at high risk of HIV transmission. No trials of PrEP have yet been conducted among TGD patients assigned a female sex at birth, but from the 2019 U.S. Preventive Services Task Force's "Prevention of Human Immunodeficiency Virus (HIV) Infection: Preexposure Prophylaxis," recommendations for transgender patients may be extrapolated from data supporting PrEP for receptive and insertive anal and vaginal sex in other populations [86].

Table 3
Combined estrogen- and progestin-containing methods of contraception and associated patient and provider considerations for supporting contraceptive counseling with TGD individuals.

Combined Hormonal Oral Pill Hormones used: ethinyl estradiol, mestranol, or estradiol valerate plus a progestin (variable) Effectiveness (in cisgender women): 91% [59]	
For patients: Some providers may prescribe to established patients without an office visit, though it is ideal to have blood pressure checked prior to starting. Taken at the same time every day for maximum effectiveness [59]. Taking continuously (*i.e.*, without a hormone free interval) may reduce bleeding and support amenorrhea from testosterone therapy. May cause growth of glandular breast tissue, even after top surgery.	**For providers:** If requiring a blood pressure measurement prior to prescribing, consider ways in which patients can have this done outside of a clinic setting (*e.g.,* at a self-serve blood pressure machine at a drug store). Progestins with higher androgenic properties such as norethindrone, levonorgestrel, and gestodene may be more appealing for some patients [59]. A "pack of pills" may be a distressful "feminine association" for some patients. Patients using daily testosterone therapy (*e.g.*, topical) may already have a routine that makes it especially easy to reliably take a pill at the same time every day. Consider prescribing continuously for patients who want to avoid bleeding and are already amenorrhoeic from testosterone therapy.
Transdermal Patch Hormones used: ethinyl estradiol and norelgestromin Effectiveness (in cisgender women): 91% [59]	
For patients: Some providers may prescribe to an established patient without an office visit, though it is ideal to check a blood pressure before starting. Looks similar to gender-affirming testosterone patches. Can cause skin irritation and discoloration for people with darker skin pigmentation [59]. Bleeding may occur during the week off the patch. May cause growth of glandular breast tissue, even after top surgery.	**For providers:** If requiring a blood pressure measurement prior to prescribing, consider ways in which patients can have this done outside of a clinic setting (*e.g.,* at a self-serve blood pressure machine at a drug store). May be less effective for patients weighing more than 90 kg (190 lbs) [59]. Patients using weekly testosterone therapy may already have a weekly routine (*e.g.*, intramuscular injections) that makes it especially easy to remember to replace patch at the same time.
Intravaginal Ring Hormones used: ethinyl estradiol plus etonogestrel or segesterone acetate Effectiveness (in cisgender women): 91% [59]	
For patients: Some providers may prescribe without an office visit, though it is ideal to check a blood pressure before starting. Must be comfortable placing and removing the ring from the vagina. Possible side effects include vaginal wetness and leukorrhea [59]. Can be removed for up to 3 hours during sex. May cause growth of glandular breast tissue, even after top surgery.	**For providers:** If requiring a blood pressure measurement prior to prescribing, consider ways in which patients can have this done outside of a clinic setting (*e.g.,* at a self-serve blood pressure machine at a drug store). A single ring containing ethinyl estradiol plus etonogestrel is effective for up to six weeks if used continuously [82], though bleeding patterns are likely less predictable. A single ring containing ethinyl estradiol plus segesterone acetate is used repeatedly in a cyclic fashion for up to one year [59]; consider for patients who want to limit interactions with the health care system. Consider for patients with vaginal atrophy.

2.11. How can providers create a welcoming clinic space for TGD patients?

All health care clinics should provide care to TGD individuals that is inclusive and considerate. One study revealed 23% of respondents avoided seeking health care when needed due to concerns with being mistreated, and 33% reported negative health care experiences in the past [4]. In addition to providing all-staff training on creating a gender-affirming and safe environment, the following are examples of recommendations, with input from members of the TGD community, for strategies to promote inclusivity in clinical environments:

- Ensure gender identity and sex assigned at birth are both elicited and documented as distinct domains and accurately reflected in the medical record in a visible place for all clinicians and staff [30,87,88] [GRADE 1C].
- On intake forms, remove binary gender identifiers (*e.g.,* woman/man) and instead ask about gender with a multiplicity of options. For example, for assessing gender identity: "What is your gender identity? Some options include gender non-binary, woman, man, transgender woman, transgender man, or another gender identity (please specify). "For assessing sex assigned at birth: "What was your sex assigned at birth, for example on your original birth certificate?" [89].
- Ask all patients about pronouns and names (even if they differ from legal ones or those on insurance records) [87]. For example, "What pronouns do you use?" and "What name(s) do you want us to use?" [GRADE 1C].
- Develop a system for periodic or ongoing assessment of name and pronouns, as a patient's gender identity may change over time [4].
- Ensure clinicians and staff know that administrative documents may not reflect people's felt or affirmed gender [87] and, when discrepancies arise, actively correct them. For example, when front desk staff notice during patient intake or registration that gender identity is not accurately reflected in the medical record, they should correct the record or have clear instructions to notify someone who can. Until the record is accurate, an alternate system for notifying clinicians and staff about the error should be in place, such as physical or electronic sticky notes.
- Greet all patients without gendered salutations and pronouns [87] like *Ma'am, Miss, Misses,* or *Mister*. Using a patient's full name is a good alternative.
- Label bathrooms for all-gender use [87] and, if possible, specify which do and do not contain urinals.
- Display educational brochures, posters, and magazines relevant to transgender health and gender diverse people, families, and their communities in public spaces [30]. Diversifying public displays is critical in spaces that may be particularly gendered and exclusive like family planning or OB/GYN clinics.
- Establish and display non-discrimination policies that specifically note protections regardless of gender identity and expression [30].
- Establish an accountability policy if staff members use transphobic remarks or otherwise discriminate against TGD individuals [30].

Table 4
Permanent contraception and associated patient and provider considerations for supporting contraceptive counseling with TGD individuals.

Surgery for permanent contraception	
Possible procedures include: tubal ligation, tubal removal, hysterectomy, or bilateral oophorectomy	
Effectiveness (tubal surgery): 99.5% [59]	
For patients:	**For providers:**
Likely requires an office visit before and after the surgery, but not necessarily a pelvic exam.	Consider performing this procedure at the time of other surgeries (*e.g.,* top surgery) [84].
Depending on surgeon, a pelvic or abdominal ultrasound may be requested.	Not recommended if patient is uncertain regarding future pregnancy desires and has not undergone oocyte (egg) preservation.
Typically an outpatient surgery, meaning patients go home the same day as surgery.	Be mindful of the large number of ancillary staff involved with surgery (*e.g.,* nurses, anesthesiologists, etc.) and ensure consistent use of patient name and correct pronouns.
Tubal ligation or tubal removal alone will not affect current bleeding patterns.	Elective hysterectomy or oophorectomy for the sole purpose of contraception is generally deemed inappropriate for cisgender women. For TGD patients, these surgeries can be considered for treatment of gender dysphoria with two independent referrals from qualified mental health professionals who have assessed the patient [7].
	Bilateral oophorectomy should generally be considered only for patients who are profoundly dysphoric with ovaries given the possible benefits of keeping at least one ovary (*e.g.,* protection of bone density for patients who may not have reliable access to testosterone therapy or may want a break from testosterone therapy in the future).

- Examine policies that may limit a patient's ability to have a support person in the exam room [41].
- Become familiar with and establish appropriate medical, legal, and social referrals specific to the care of TGD patients. Achieving legal gender affirmation improves quality of life and often requires health care provider support [4].

Given the high rates of unemployment and poverty amongst TGD individuals [4], hiring TGD employees can promote workplace inclusivity, diversity, visibility, and help counteract community economic disparities.

It is also worth discussing the types of clinics where contraceptive counseling and exams should take place. Some TGD individuals feel uncomfortable being seen in a gynecology clinic given its common connotation as a "women's health" clinic [90]. Clinics with gender neutral names, such as "Center for Reproductive Health," can increase inclusivity. Other primary care specialties like family medicine, internal medicine, and pediatrics also care for TGD patients and often already practice in clinics with gender-neutral names. Augmenting primary care provider comfort with contraception counseling and provision for TGD patients will further increase access to these services.

2.12. How can a provider's language influence contraceptive counseling with TGD patients?

TGD individuals often find it difficult to reveal their gender identity to health care providers [90], with only 40% of TGD patients being "out" to their medical providers [4]. Hesitancy to reveal TGD experience is not without cause; a 2011 study found that discrimination increased if medical providers were aware of a person's transgender status [91]. Compared to patients whose transgender status was not disclosed to their medical providers, patients who were out to their providers were more likely to be denied service altogether (23% vs. 15%) and were more likely to be physically attacked or assaulted in the medical setting (2% vs. 1%) [91]. Additionally, 24% of TGD patients have needed to educate their providers about needed health care and 23% have postponed medical care when they were sick or injured due to fear of mistreatment or discrimination, which included refusal of care, harassment and violence in medical settings, and lack of provider knowledge [4]. Nevertheless, TGD individuals have an interest in maintaining their physical health despite the emotional challenges to receiving care [90].

In order for effective counseling to occur, patients must feel safe disclosing information. In addition to providing a welcoming space, considerate conversations are needed. Providers should familiarize themselves with terminology used within TGD communities and not rely on patients as their only source of information [87] [GRADE 1C]. Many definitions have been included in this guideline. For additional definitions, please see the "LGBTQIA+ Glossary of Terms for Health Care Teams" by the National LGBT Health Education Center, which can be found at https://www.lgbthealtheducation.org/publication/lgbtqia-glossary-of-terms-for-health-care-teams/ [92]. Other suggestions for using language to help establish rapport with patients include:

- Assess and use patients' names and pronouns consistently [87]. It is important to note that they are not simply "preferred" pronouns; they *are* the patients' pronouns.
- Ask patients what words they use for specific body parts and mirror the language of the patient [30]. For example, some patients use *genital opening, frontal pelvic opening, front hole,* or *internal canal* when talking about their vagina; some patients use *internal organs* when talking about their uterus and ovaries.
- Use non-assumptive language, such as asking about the body parts involved in sexual contact instead of solely asking about the gender of their partner(s) [93]. For example, for those who engage in sex, "What are the gender or genders of your partners? Which of your body parts touch other people's body parts? What goes where?".
- Avoid asking unnecessary questions that do not pertain to the current visit [41].
- Acknowledge when mistakes in language occur, apologize, and try to avoid repeating the same mistake [30].

Providers have a responsibility to prevent patients from experiencing discrimination within the health care setting. Using considerate language that does not marginalize patients will help to create an inclusive space conducive to meaningful conversations and effective counseling.

2.13. What strategies are recommended when performing pelvic exams on TGD patients?

Exams can cause significant distress for some TGD patients [67]. Discomfort may be due to a variety of reasons including a disconnect between gender identity and sex assigned at birth, the high frequency of sexual trauma, and/or previously insensitive and uncomfortable pelvic exams [94]. In addition to emotional discomfort, pelvic exams may be more physically painful for TGD individuals on testosterone therapy because of a thinner vaginal lining,

less lubrication, and vaginal atrophy [30,45,67]. Therefore, it is recommended that providers discuss patients' feelings and comfort regarding pelvic exams and, when counseling about contraception, inform patients of those methods that require a pelvic exam [67].

The trauma informed care (TIC) approach should be used when examining all patients, including TGD patients [GRADE 2C]. The basic principles of this strategy include asking patients about history of sexual trauma before the exam while the patient is clothed and seated in a way that is non-triggering and, during the exam, listening to the patient, anticipating each step of the procedure, and affirming the patient's control of the exam [95]. It furthermore aims to minimize emotional triggers and the discomfort during exams and shift the power control from the provider to the patient during this time of heightened vulnerability [67]. Prior to the exam, ideally before the patient undresses, allow them time to express their concerns [41,67]. Despite best efforts, some patients may not feel emotionally or physically ready for a pelvic exam and need to be given the option of rescheduling for a later date. Other strategies that have been proposed to ease the emotional and physical discomfort of pelvic exams for these patients include:

- Allow the patient to choose the gender of the provider if preferred (and logistically possible) [95].
- Pretreat with two weeks of vaginal estrogen for patients with vaginal atrophy on testosterone therapy [66,67]. Offer various estrogen formulations to meet patient preference in mode of administration (*e.g.,* intra-vaginal cream, tablets, or ring).
- Consider conscious sedation for patients who feel that would be beneficial, being aware that for some the sensation of loss of control may be distressing [96].
- Offer to describe the steps of the pelvic exam, including showing the patient the instruments ahead of time. Ask if they would like to be told about each step of the exam shortly before it happens.
- Assure the patient that they will have control over the pace of the exam and then ensure that they do in fact have that control. Continue to ask permission each step of the way by asking, for example, "Is it alright if I continue?".
- Allow the head of the exam table to be raised, so the patient can see the provider and anticipate next steps of the exam.
- Encourage relaxation techniques such as diaphragmatic breathing, visualization, and verbal distraction.
- Mirror the patient's language for how they describe what is typically referred to as a vagina in cisgender women [67].
- Use topical lidocaine prior to speculum placement [67].
- Allow the patient to place the speculum and apply lubricants or lidocaine themselves [68].
- Replace words like *panties*, *bed, stirrups*, *spread, sheet,* and *insertion* with words that have less sexual and gendered connotations, such as *underwear, table, foot rests*, *separate, drape,* and *placement* [67]. Avoid providing instructions using words that a sexual perpetrator may have used. For example, avoid telling patients to "open your legs" or "just relax/relax your bottom/relax and it won't hurt as much" or "the more still you can be, the sooner this will be over."

After the exam, continue to use non-gendered language when warning about bleeding and offering "absorbent products"; avoid words such as *periods, menstruation, pads,* and *tampons* [67]. Make sure that patients for whom exams are particularly distressing have a post-exam self-care plan [67]. When scheduling follow-up, consider ways to minimize the number of return visits, such as prescribing additional refills of medication or performing telephone follow-up instead of in-office visits, and ensure that all people with whom the patient might have phone contact will use correct names and pronouns.

3. Conclusions

Providers should engage in conversations with their TGD patients about their fertility goals. For patients who want to avoid pregnancy, appropriate contraceptive counseling can help individuals match their contraceptive use with their family planning values and reproductive goals. All current contraceptive options can be considered for TGD people capable of becoming pregnant who engage in sexual activities involving sperm. There are challenges to applying data from one patient population to another, but the lack of published literature about efficacy, effectiveness, and acceptability of various contraceptive methods for TGD people requires that we extrapolate from what is known about current contraceptive methods for cisgender women. Patient-provider partnerships and frank values-based conversations describing what is known and unknown about contraceptive methods will help TGD patients meet contraceptive goals and preferences. These conversations will be further aided by improving training for providers, who can help provide spaces that are welcoming to and affirm the identities of TGD patients, while acknowledging the spectrum of identities and experiences within this community as they relate to contraceptive needs. By improving contraceptive care and counseling for TGD individuals, researchers and clinicians can help support a marginalized and underserved population.

3.1. Recommendations

Please see Appendix A for a key regarding the GRADE system. Fig. S1

The following recommendations are based primarily on moderate- or low-quality scientific evidence:

- Testosterone should not be used as a contraceptive [GRADE 1B].
- Progestins can be used to limit bleeding and dysmenorrhea for TGD patients on testosterone [GRADE 1B].

The following recommendations are based primarily on consensus and expert opinion:

- For patients taking gender-affirming testosterone therapy, providers should extrapolate from what is known about testosterone and these contraceptive methods separately to make decisions about how their interactions might affect patients [GRADE 2C].
- The psychological benefits of testosterone outweigh the relatively uncommon deleterious side-effects [GRADE 1C].
- When amenorrhea is desired but not achieved after six months of initiating testosterone therapy, in addition to a standard evaluation for abnormal uterine bleeding, providers should assess a mid-injection serum testosterone level and, if lower than physiologic cisgender male levels, consider increasing the patient's testosterone regimen [GRADE 2C].
- Patients who prioritize effectiveness when choosing a method of contraception should be counseled based on available data for cisgender women, with discussion on testosterone's additional effect on one's ability to become pregnant [GRADE 2C].
- All currently available contraceptive methods can be considered for use in TGD patients, including those currently or previously on gender-affirming testosterone therapy, with consideration for commonly accepted medical contraindications in cisgender women [GRADE 1C].
- Continuous administration of estrogen-containing contraceptives can be considered for patients who prefer to avoid bleeding [GRADE 2C].

- Prior to permanent contraception, patients should be counseled about the limited data on fertility treatments in TGD patients with unpredictable success rates, even if fertility preservation treatments have previously been performed [GRADE 1C].
- Providers should engage in shared decision-making when counseling TGD people about their contraceptive needs, acknowledging the spectrum of identities and experiences within these communities [GRADE 1C].
- To help create a welcoming environment, clinics should ensure that gender identity and sex assigned at birth are elicited and clearly documented in the medical record, as well as patients' correct names and pronouns [GRADE 1C].
- Providers should familiarize themselves with terminology used within TGD communities and not rely on patients as their only source of information [GRADE 1C].
- The trauma informed care (TIC) approach should be considered when performing pelvic exams [GRADE 2C].

4. Recommendations for future research

Researchers should include information on gender identity distinct from sex assigned at birth for all research subjects, especially in areas of sexual and reproductive health. These efforts will provide data to guide evidence-based care and help close the recognized health disparities of sexual and gender minority people including those of transgender experience. Specific areas of research that are needed include:

- Epidemiological research describing current contraceptive use, pregnancy incidence, and pregnancy outcomes for fetus and gestational parent.
- Research describing the alterations in anatomy, histology, and functionality of the cervix, uterus, ovaries, and fallopian tubes in the setting of gender-affirming testosterone use.
- The age and treatment dose-related fertility of TGD people who have used gender-affirming hormones after the onset of puberty.
- The age and treatment dose-related fertility of TGD people who have used puberty blockers and then either stop puberty blockade and undergo endogenous puberty or who after puberty blockade start gender-affirming hormones and then stop those hormones.
- The contraceptive risks and benefits – both physical and psychological – of various widely used contraceptive methods for those using gender-affirming testosterone who were assigned a female sex at birth.
- The contraceptive efficacy and effectiveness of various widely used contraceptive methods for those using gender-affirming testosterone who were assigned a female sex at birth. Data on both typical use and perfect use for these patients are needed.
- The acceptability of various contraceptive methods for TGD people.
- The facilitators and barriers to use of various contraceptive methods for TGD people.
- Testing and structuring of counseling guidelines and protocols for TGD people.

5. Sources

The articles included in this guideline were obtained from a PubMed search of literature published before August 1, 2019. The following MeSH terms and text words were used: Transgender Persons; Health Services for Transgender Persons; Sexual and Gender Minorities; Gender Identity: Gender Diverse; LGBTQ; Contraception; Contraceptive Counseling; Family Planning Services; Patient-Centered Care; Vulnerable Populations. The "related articles" search in PubMed was used frequently to identify similar studies that were not included in the original search. Reference lists of identified studies were also hand-searched for additional publications. Articles not published in English were excluded. Select pertinent articles that were published after the initial literature search were included during the revision process. Given the paucity of data on some of the topics included, sources of information also include anecdotal experiences of expert providers of TGD health care.

6. Intended audience

We anticipate this Clinical Recommendation will be used by primary care providers, reproductive health care providers, and all those who work with TGD patients in any aspect of their health or health care. Although this evidence-based review can be used to guide medical decision making, it is not intended to dictate care.

7. Authorship

This Clinical Recommendation was prepared by Adam Bonnington, MD; Shokoufeh Dianat, DO, MAS; Jennifer Kerns, MD, MS, MPH; Jen Hastings, MD; Mitzi Hawkins, MD; Gene De Haan, MD; and Juno Obedin-Maliver, MD, MPH, MAS, and approved by the Board of the Society of Family Planning (SFP) with endorsement from the World Professional Association for Transgender Health (WPATH) after review and preparation with SFP. We would also like to acknowledge Philip Darney, MD, MSc, for his valuable review and input.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.contraception.2020.04.001.

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