# Transgender and Gender Diverse Health Care in the US Military: What Dermatologists Need to Know

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#### PRACTICE POINTS

- Transgender and gender diverse (TGD) health care is multidisciplinary, and both military and civilian dermatologists can serve an important role.
- Although dermatologists do not directly perform gender-affirming surgeries or hormone management, there are a number of dermatologic procedures and medical interventions that can enhance a TGD person's desired appearance.
- Dermatologists also can help manage possible adverse effects from gender-affirming interventions.

The US Military has made considerable strides in providing quality health care to transgender and gender diverse service members (TSMs). Current policies ensure continued military readiness and allow TSMs to receive gender-affirming care while continuing to serve. Dermatologists play an important role in the multidisciplinary medical team required for medical gender transition; however, there is considerable discord between medically necessary procedures for dermatologic gender-affirming care and insurance-covered benefits. Within the scope of dermatology, many of the available procedures currently are not covered by insurance. This article seeks to discuss how military and civilian dermatologists can contribute to gender-affirming care. We also review existing disparities in health care and identify potential areas of improvement.

eople whose gender identity differs from the sex assigned at birth are referred to as transgender. For some, gender identity may not fit into the binary constructs of male and female but rather falls between, within, or outside this construct. These people often consider themselves nonbinary or gender diverse. As the terminology continues to evolve, current recommendations include referring to this patient population as transgender and gender diverse (TGD) to ensure the broadest

inclusivity. <sup>1</sup> In this article, the following terms are used as defined below:

- The terms *transgender woman* and *trans feminine* describe persons who were assigned male gender at birth but their affirmed gender is female or nonmasculine.
- The terms *transgender man* and *trans masculine* describe persons who were assigned female gender at birth but their affirmed gender is male or nonfeminine.

The US Military's policies on the service of TGD persons have evolved considerably over the past decade. Initial military policies barred TGD service members (TSMs) from service all together, leading to challenges in accessing necessary health care. The first official memorandum explicitly allowing military service by TGD persons was released on June 30, 2016.<sup>2</sup> The intention of this memorandum was 2-fold: (1) to allow TGD persons to serve in the military so long as they meet"the rigorous standards for military service and readiness" by fulfilling the same standards and procedures as other military service members, including medical fitness for duty, physical fitness, uniform and grooming, deployability, and retention, and (2) to direct the establishment of new or updated policies to specific departments and prescribe procedures for retention standards, separation from service, in-service transition, and medical coverage.<sup>2</sup> Several other official policies were released following this initial memorandum that provided more specific guidance on how to implement these policies at the level of the force, unit, and individual service member.

Modifications to the original 2016 policies had varying impacts on transgender health care provision and access.<sup>3</sup> At the time of publication of this article, the current policy—the Department of Defense Instruction 1300.28<sup>4</sup>—among others, establishes standards and procedures for the process by which active and reserve TSMs may medically, socially, and legally transition genders within the military. The current policy applies to all military branches and serves as the

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framework by which each branch currently organizes their gender-affirmation processes (GAP).<sup>4</sup>

There currently are several different GAP models among the military branches.<sup>5</sup> Each branch has a different model or approach to implementing the current policy, with varying service-specific processes in place for TSMs to access gender-affirming care; however, this may be changing. The Defense Health Agency is in the process of consolidating and streamlining the GAP across the Department of Defense branches in an effort to optimize costs and ensure uniformity of care. Per the Defense Health Agency Procedural Instruction Number 6025.21 published in May 2023, the proposed consolidated model likely will entail a single central transgender health center that provides oversight and guidance for several regional joint-service gender-affirming medical hubs. Patients would either be managed at the level of the hub or be referred to the central site.5

Herein, we discuss the importance of genderaffirming care and how military and civilian dermatologists can contribute. We also review disparities in health care and identify areas of improvement.

#### Benefits of Gender-Affirming Care

Gender-affirming procedures are critical for aligning physical appearance with gender identity. Physical appearance is essential for psychological well-being, operational readiness, and the safety of TSMs.<sup>6</sup> It is well documented that TGD persons experience suicidal ideation, depression, stigma, discrimination and violence at higher rates than their cisgender peers.<sup>7,8</sup> It is important to recognize that transgender identity is not a mental illness, and these elevated rates have been linked to complex trauma, societal stigma, violence, and discrimination.<sup>1</sup> Other studies have suggested that increased access to gender-affirming interventions may ameliorate these mental health concerns.<sup>1,7-9</sup>

The major components of gender-affirming care include hormone therapy, gender confirmation surgery, and mental health care, if needed. These are covered by TRICARE, the health care program for military service members; however, at the time of publication, many of the dermatologic gender-affirming procedures are not covered by TRICARE because they are considered "cosmetic procedures," which is a term used by insurance companies but does not accurately indicate whether a procedure is medically necessary or not. Newer literature has demonstrated that gender-affirming care positively affects the lives of TGD patients, strengthening the argument that gender-affirming care is a medical necessity and not just cosmetic.<sup>1</sup>

### Aesthetic Procedures in Gender-Affirming Care

Surgeons, including those within the specialties of otolaryngology, oral and maxillofacial surgery, urology, gynecology, and plastic surgery, provide major gender-affirming interventions; however, dermatologists may offer less invasive solutions that can serve as a temporary experience prior to undergoing more permanent procedures. Hormonally driven disorders including acne, hair loss, and melasma also are managed by dermatologists, along with scar treatment following surgeries.

Because human variation is expansive and subjective, what is considered feminine or masculine may vary by person, group, culture, and country; therefore, it is imperative to ask patients about their individual aesthetic goals and tailor their treatment accordingly. *Feminine* and *masculine* are terms that will be used to describe prototypical appearances and are not meant to define a patient's current state or ultimate goals. The following procedures and medical interventions are where dermatologists can play an important role in TGD persons' GAPs.

Botulinum Toxin Injections—Botulinum toxin injection is the most common nonsurgical aesthetic procedure performed around the world. 10 The selective paralysis afforded by botulinum toxin has several uses for people undergoing transition. Aesthetically, the feminine eyebrow tends to be positioned above the orbital rim and is arched with its apex between the lateral limbus and lateral canthus,11 while the masculine eyebrow tends to be flatter and fuller and runs over the orbital rim without a peak. For people seeking a more feminine appearance, an eyebrow lift with botulinum toxin can help reshape the typical flatter masculine eyebrow to give it lateral lift that often is considered more feminine. The targeted muscle is the superolateral orbicularis oculi, which serves as a depressor on the eyebrow. This can be combined with purposefully avoiding total lateral frontalis paralysis, which leads to a "Spock" brow for extra lift. Conversely, a naturally arched and higher eyebrow can be flattened and lowered by selectively targeting areas of the frontalis muscle.

Broad square jawlines typically are considered a masculine feature and are another area where botulinum toxin can be used to feminize a patient's facial features. Targeting the masseter muscle induces muscle weakness, which ultimately may result in atrophy after one or more treatment sessions. This atrophy may lead to narrowing of the lower face and thus may lead to a fuller-appearing midface or overall more heart-shaped face. Every individual's aesthetic goals are unique and therefore should be discussed prior to any treatment.

Dermal Fillers—Dermal fillers are gel-like substances injected under the skin for subtle contouring of the face. Fillers also can be used to help promote a more masculine or feminine appearance. Filler can be placed in the lips to create a fuller, more projected, feminine-appearing lip. Malar cheek and central lower chin filler can be used to help define a heart-shaped face by accentuating the upper portion of the face and creating a more pointed chin, respectively. Alternatively, filler can be used to masculinize the chin by placing it where it can increase jawline squareness and increase anterior jaw projection. Additionally, filler at the angle of the jaw can help accentuate a square facial shape and a more defined jawline. Although not as widely practiced, lateral brow filler can create a heavier-appearing and broader forehead for a more masculine appearance. These procedures

can be combined with the previously mentioned botulinum toxin procedures for a synergistic effect.

Deoxycholic Acid—Deoxycholic acid is an injectable product used to selectively remove unwanted fat. It currently is approved by the US Food and Drug Administration for submental fat, but some providers are experimenting with off-label uses. Buccal fat pad removal—or in this case reduction by dissolution—tends to give a thinner, more feminine facial appearance. Peducing fat around the axillae also can help promote a more masculine upper torso. The safety of deoxycholic acid in these areas has not been adequately tested; thus, caution should be used when discussing these off-label uses with patients.

Hair and Tattoo Removal—Hair removal may be desired by TGD persons for a variety of reasons. Because cisgender females tend to have less body hair overall, transgender people in pursuit of a more feminine appearance often desire removal of facial, neck, and body hair. Although shaving and other modalities such as waxing and chemical depilatories are readily available at-home options, they are not permanent and may lead to folliculitis or pseudofolliculitis barbae. Laser hair removal (LHR) and electrolysis are modalities provided by dermatologists that tend to be more permanent and lead to better outcomes, including less irritation and better aesthetic appearance. It is important to keep in mind that not every person and not every body site can be safely treated with LHR. Patients with lighter skin types and darker hair tend to have the most effective response with a higher margin of safety, as these features allow the laser energy to be selectively absorbed by the melanin in the hair bulb and not by the background skin pigmentation. 14,15 Inappropriate patient selection or improper settings for wavelength, pulse width, or fluences can lead to burns and permanent scarring. 14,15 Electrolysis is an alternative to hair removal within tattoos and is more effective for those individuals with blonde, red, or white hair. 16

Another novel treatment for unwanted hair is eflornithine hydrochloride cream, which works by blocking ornithine decarboxylase, the enzyme that stimulates hair growth. It currently is approved to reduce unwanted hair on the face and adjacent areas under the chin; however the effects of this medication are modest and the medication can be expensive.<sup>17</sup>

Cosmetic hair and tattoo removal are not currently covered by TRICARE, except in cases of surgical and donor-site preparation for some GAPs. Individuals may desire removal of tattoos at surgery sites to obtain more natural-appearing skin. Currently, GAPs such as vagino-plasty, phalloplasty, and metoidioplasty—often referred to by patients as "bottom surgeries"—include insurance coverage for tattoo removal, LHR, and/or electrolysis.

# Management of Hormonal Adverse Effects

*Acne*—Individuals on testosterone supplementation tend to develop acne for the first several years of treatment, but it may improve with time. <sup>18</sup> Acne is treated in individuals receiving

testosterone the same way as it is treated in cisgender men, with numerous options for topical and oral medications. In trans masculine persons, spironolactone therapy typically is avoided because it may interfere with the actions of exogenous testosterone administered as part of gender-affirming medical treatment and may lead to other undesired adverse effects such as impotence and gynecomastia.<sup>1</sup>

Although acne typically improves after starting estrogen therapy, patients receiving estrogens may still develop acne. Most trans feminine patients will already be on an estrogen and an antiandrogen, often spironolactone. Spironolactone often is used as monotherapy for acne control in cisgender women. Additionally, an important factor to consider with spironolactone is the possible adverse effect of increased micturition. Currently, the military rarely has gender-inclusive restroom options, which can create a challenge for TSMs who find themselves needing to use the restroom more frequently in the workplace.

If planning therapy with isotretinoin, dermatologists should discuss several important factors with all patients, including TGD patients. One consideration is the patient's planned future surgeries. Although new literature shows that isotretinoin does not adversely affect wound healing, <sup>19</sup> some surgeons still adhere to an isotretinoin washout period of 6 to 12 months prior to performing any elective procedures due to concerns about wound healing. 20,21 Second, be sure to properly assess and document pregnancy potential in TGD persons. Providers should not assume that a patient is not pregnant or is not trying to become pregnant just because they are trans masculine. It also is important to note that testosterone is not a reliable birth control method.1 If a patient still has ovaries, fallopian tubes, and a uterus, they are considered medically capable of pregnancy, and providers should keep this in mind regarding all procedures in the TGD population.

Another newer acne treatment modality is the 1762-nm laser, which targets sebaceous glands. This device allows for targeted treatment of acne-prone areas without systemic therapy such as retinoids or antiandrogens. The 1762-nm laser is not widely available but may become a regular treatment option once its benefits are proven over time.

Alopecia and Hyperpigmentation—Androgens, whether endogenously or exogenously derived, can lead to androgenetic alopecia (AGA) in genetically susceptible individuals. Trans masculine persons and others receiving androgen therapy are at higher risk for AGA, which often is undesirable and may be considered gender affirming by some TGD persons. Standard AGA treatments for cisgender men also can be used in trans masculine persons. Some of the most common anti-AGA medications are topical minoxidil, oral finasteride, and oral minoxidil. Although Coleman et al¹ recently reported that finasteride may be an appropriate treatment option in trans masculine persons experiencing alopecia, treatment with  $5\alpha$ -reductase inhibitors may impair clitoral growth and the development of facial and body hair. Further

studies are needed to assess the efficacy and safety of  $5\alpha$ -reductase inhibitors in transgender populations.<sup>1</sup> Dutasteride may be used off-label and comes with a similar potential adverse-event profile as finasteride, which includes depression, decreased libido, erectile dysfunction, ejaculation disorders, and gynecomastia.

Conversely, AGA tends to improve in trans feminine persons and others receiving estrogen and antiandrogen therapy. Natural testosterone production is suppressed by estrogens and spironolactone as well as in patients who undergo orchiectomy.<sup>1</sup> Although spironolactone is not approved for acne, AGA, or hirsutism, it is a standard treatment of AGA in cisgender women because it functions to block the effects of androgens, including at the hair follicle. Finasteride may be used for AGA in cisgender women but it is not recommended for trans feminine persons.<sup>1</sup>

There are many other modalities available for the treatment of AGA that are less commonly used-some may be cost prohibitive or do not have robust supporting evidence, or both. One example is hair transplantation. Although this procedure gives dramatic results, it typically is performed by a specialized dermatologist, is not covered by insurance, and can cost up to tens of thousands of dollars out-of-pocket. Patients typically require continuous medical management of AGA even after the procedure. Examples of treatment modalities with uncertain supporting evidence are platelet-rich plasma injections, laser combs or hats, and microneedling. Additionally, clascoterone is a topical antiandrogen currently approved for acne, but it is under investigation for the treatment of AGA and may become an additional nonsystemic medication available for AGA in the future.23

Melasma is a hyperpigmentation disorder related to estrogens, UV light exposure, and sometimes medication use (eg, hormonal birth control, spironolactone).24 The mainstay of treatment is prevention, including sun avoidance as well as use of sun-protective clothing and broad-spectrum sunscreens. Dermatologists tend to recommend physical sunscreens containing zinc oxide, titanium dioxide, and/or iron oxide, as they cover a wider UV spectrum and also provide some protection from visible light. Once melasma is present, dermatologists still have several treatment options. Topical hydroquinone is a proven treatment; however, it must be used with caution to avoid ochronosis. With careful patient selection, chemical peels also are effective treatment options for dyspigmentation and hyperpigmentation. Energy devices such as intense pulsed light and tattoo removal lasers-Q-switched lasers and picosecond pulse widths—also can be used to treat hyperpigmentation. Oral, intralesional, and topical tranexamic acid are newer treatment options for melasma that still are being studied and have shown promising results. Further studies are needed to determine long-term safety and optimal treatment regimens.24,25

Many insurance carriers, including TRICARE, do not routinely cover medical management of AGA or melasma. Patients should be advised that they likely will have to pay for any medications prescribed and procedures

undertaken for these purposes; however, some medication costs can be offset by ordering larger prescription quantities, such as a 90-day supply vs a 30-day supply, as well as utilizing pharmacy discount programs.

### Scar Management Following Surgery

In TSMs who undergo gender-affirming surgeries, dermatologists play an important role when scar symptoms develop, including pruritus, tenderness, and/or paresthesia. In the military, some common treatment modalities for symptomatic scars include intralesional steroids with or without 5-fluouroruacil and the fractionated CO<sub>2</sub> laser. There also are numerous experimental treatment options for scars, including intralesional or perilesional botulinum toxin, the pulsed dye laser, or nonablative fractionated lasers. These modalities also may be used on hypertrophic scars or keloids. Another option for keloids is scar excision followed by superficial radiation therapy.<sup>26</sup>

## **Mental Health Considerations**

Providers must take psychological adverse effects into consideration when considering medical therapies for dermatologic conditions in TGD patients. In particular, it is important to consider the risks for increased rates of depression and suicidal ideation formerly associated with the use of isotretinoin and finasteride, though much of the evidence regarding these risks has been called into question in recent years.<sup>27,28</sup> Nonetheless, it remains prominent in lay media and may be a more important consideration in patients at higher baseline risk.<sup>27</sup> Although there are no known studies that have expressly assessed rates of depression or suicidal ideation in TGD patients taking isotretinoin or finasteride, it is well established that TGD persons are at higher baseline risk for depression and suicidality.<sup>1,7,8</sup> All patients should be carefully assessed for depression and suicidal ideation as well as counseled regarding these risks prior to initiating these therapies. If concerns for untreated mental health issues arise during screening and counseling, patients should be referred for assessment by a behavioral health specialist prior to starting therapy.

#### **Future Directions**

The future of TGD health care in the military could see an expansion of covered benefits and the development of new dermatologic procedures or medications. Research and policy evolution are necessary to bridge the current gaps in care; however, it is unlikely that all procedures currently considered to be cosmetic will become covered benefits.

Facial LHR is a promising candidate for future coverage for trans feminine persons. When cisgender men develop adverse effects from mandatory daily shaving, LHR is already a covered benefit. Two arguments in support of adding LHR for TGD patients revolve around achieving and maintaining an appearance congruent with their gender along with avoiding unwanted adverse effects related to daily shaving. Visual conformity with one's affirmed gender has been associated with

improvements in well-being, quality of life, and some mental health conditions.<sup>29</sup>

Scar prevention, treatment, and reduction are additional areas under active research in which dermatologists likely will play a crucial role. As more dermatologic procedures are performed on TGD persons, the published data and collective knowledge regarding best practices in this population will continue to grow, which will lead to improved cosmetic and safety outcomes.

## **Final Thoughts**

Although dermatologists do not directly perform gender-affirming surgeries or hormone management, they do play an important role in enhancing a TGD person's desired appearance and managing possible adverse effects resulting from gender-affirming interventions. There have been considerable advancements in TGD health care over the past decade, but there likely are more changes on the way. As policies and understanding of TGD health care needs evolve, it is crucial that the military health care system adapts to provide comprehensive, accessible, and equitable care, which includes expanding the range of covered dermatologic treatments to fully support the health and readiness of TSMs.

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# REFERENCES

- Coleman E, Radix AE, Bouman WP, et al. Standards of care for the health of transgender and gender diverse people, version 8. Int J Transgend Health. 2022;23(suppl 1):S1-S260. doi:10.1080/26895269.2022.2100644
- Secretary of Defense. DTM 16-005—military service of transgender service members. June 30, 2016. Accessed June 17, 2024. https://dod.defense.gov/Portals/1/features/2016/0616\_policy/DTM-16-005.pdf
- Office of the Deputy Secretary of Defense. DTM 19-004—military service by transgender persons and persons with gender dysphoria. March 17, 2020. Accessed June 17, 2024. https://health.mil/Reference-Center/Policies/2020/03/17/Military-Service-by-Transgender-Persons-and-Persons-with-Gender-Dysphoria
- Office of the Under Secretary of Defense for Personnel and Readiness. Department of Defense Instruction (DODI) 1300.28. in-service transition for transgender service members. September 4, 2020. Accessed June 17, 2024. https://health.mil/Reference-Center/Policies/2020/09/04/Military-Service-by-Transgender-Persons-and-Persons-with-Gender-Dysphoria
- Defense Health Agency Procedural Instruction Number 6025.21, Guidance for Gender-Affirming Health Care of Transgender and Gender-Diverse Active and Reserve Component Service Members, May 12, 2023. https://www.health.mil/Reference-Center/DHA-Publications/2023/05/12/DHA-PI-6015-21
- Elders MJ, Brown GR, Coleman E, et al. Medical aspects of transgender military service. Armed Forces Soc. 2015;41:199-220. doi:10.1177/0095327X14545625.
- Almazan AN, Keuroghlian AS. Association between gender-affirming surgeries and mental health outcomes. JAMA Surg. 2021;156:611-618.
- Tordoff DM, Wanta JW, Collin A, et al. Mental health outcomes in transgender and nonbinary youths receiving gender-affirming care. JAMA Netw Open. 2022;5:E220978. doi:10.1001/jamanetworkopen.2022.0978
- Olson-Kennedy J, Warus J, Okonta V, et al. Chest reconstruction and chest dysphoria in transmasculine minors and young adults: comparisons of

- nonsurgical and postsurgical cohorts. *JAMA Pediatr.* 2018;172:431-436. doi:10.1001/jamapediatrics.2017.5440
- Top non-invasive cosmetic procedures worldwide 2022. Statista website. February 8, 2024. Accessed June 13, 2024. https://www.statista .com/statistics/293449/leading-nonsurgical-cosmetic-procedures/
- Kashkouli MB, Abdolalizadeh P, Abolfathzadeh N, et al. Periorbital facial rejuvenation; applied anatomy and pre-operative assessment. J Curr Ophthalmol. 2017;29:154-168. doi:10.1016/j.joco.2017.04.001
- Thomas MK, D'Silva JA, Borole AJ. Injection lipolysis: a systematic review of literature and our experience with a combination of phosphatidylcholine and deoxycholate over a period of 14 years in 1269 patients of Indian and South East Asian origin. J Cutan Aesthet Surg. 2018;11:222-228. doi:10.4103/JCAS\_JCAS\_117\_18
- Jegasothy SM. Deoxycholic acid injections for bra-line lipolysis. Dermatol Surg. 2018;44:757-760. doi:10.1097/DSS.000000000001311
- Dierickx CC. Hair removal by lasers and intense pulsed light sources. Dermatol Clin. 2002;20:135-146. doi:10.1016/s0733-8635(03)00052-4
- Lepselter J, Elman M. Biological and clinical aspects in laser hair removal. *J Dermatolog Treat*. 2004;15:72-83. doi:10.1080/09546630310023152
- Yuan N, Feldman AT, Chin P, et al. Comparison of permanent hair removal procedures before gender-affirming vaginoplasty: why we should consider laser hair removal as a first-line treatment for patients who meet criteria. Sex Med. 2022;10:100545. doi:10.1016/j.esxm.2022.100545
- Kumar A, Naguib YW, Shi YC, et al. A method to improve the efficacy of topical eflornithine hydrochloride cream. *Drug Deliv.* 2016;23:1495-1501. doi:10.3109/10717544.2014.951746
- Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an endocrine society clinical practice guideline. J Clin Endocrinol Metabol. 2017;102:3869-3903.
- Hatami P, Balighi K, Asl HN, et al. Isotretinoin and timing of procedural interventions: clinical implications and practical points. *J Cosmet Dermatol*. 2023;22:2146-2149. doi:10.1111/jocd.15874
- Rubenstein R, Roenigk HH Jr, Stegman SJ, et al. Atypical keloids after dermabrasion of patients taking isotretinoin. J Am Acad Dermatol. 1986;15(2 pt 1):280-285.
- Zachariae H. Delayed wound healing and keloid formation following argon laser treatment or dermabrasion during isotretinoin treatment. Br J Dermatol. 1988;118:703-706.
- Goldberg D, Kothare A, Doucette M, et al. Selective photothermolysis with a novel 1726 nm laser beam: a safe and effective solution for acne vulgaris. J Cosmet Dermatol. 2023;22:486-496. doi:10.1111/jocd.15602
- Sun HY, Sebaratnam DF. Clascoterone as a novel treatment for androgenetic alopecia. Clin Exp Dermatol. 2020;45:913-914. doi:10.1111/ced.14292
- Bolognia JL, Schaffer JV, Cerroni L. Dermatology: 2-Volume Set. Elsevier; 2024:1130.
- Konisky H, Balazic E, Jaller JA, et al. Tranexamic acid in melasma: a focused review on drug administration routes. J Cosmet Dermatol. 2023;22:1197-1206. doi:10.1111/jocd.15589
- Walsh LA, Wu E, Pontes D, et al. Keloid treatments: an evidence-based systematic review of recent advances. Syst Rev. 2023;12:42. doi:10.1186/s13643-023-02192-7
- Kridin K, Ludwig RJ. Isotretinoin and the risk of psychiatric disturbances: a global study shedding new light on a debatable story. J Am Acad Dermatol. 2023;88:388-394. doi:10.1016/j.jaad.2022.10.031
- 28. Dyson TE, Cantrell MA, Lund BC. Lack of association between  $5\alpha$ -reductase inhibitors and depression. *J Urol.* 2020;204:793-798. doi:10.1097/JU.000000000001079
- To M, Zhang Q, Bradlyn A, et al. Visual conformity with affirmed gender or "passing": its distribution and association with depression and anxiety in a cohort of transgender people. J Sex Med. 2020;17:2084-2092. doi:10.1016/j.jsxm.2020.07.019
- Fernandes MG, da Silva LP, Cerqueira MT, et al. Mechanomodulatory biomaterials prospects in scar prevention and treatment. *Acta Biomater*. 2022;150:22-33. doi:10.1016/j.actbio.2022.07.042
- Kolli H, Moy RL. Prevention of scarring with intraoperative erbium:YAG laser treatment. J Drugs Dermatol. 2020;19:1040-1043. doi:10.36849/ JDD.2020.5244