

Singing on Testosterone: A Handout for Vocal Transition

September 10, 2023

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Abstract

This handout is intended for transgender and non-binary singers who transition with testosterone therapy (“T”), written by a transmasculine voice teacher with 10+ years of experience working with transitioning singers, including one-on-one sessions with 50+ students who use testosterone. The author’s own voice change occurred 15 years ago, and he now sings with a tenor instrument. In this paper, he covers the following topics: frequently asked questions about testosterone therapy and the voice; a comparison of cis male voice change and transgender vocal transition through testosterone therapy; and advice for protecting the voice as it changes as well as developing the new voice as it emerges. This handout promotes the idea that transitioning singers undergo a voice change that is experientially equivalent to cis male voice change in adolescence, and that after transition, transmasculine voices easily blend into the spectrum of cisgender male voice types.

A note about language: This paper avoids using the term “female-to-male” (“FTM”) as that language may obscure or overcomplicate perceptions of vocal transition by framing our discussion in terms of the impact of testosterone on the “female” voice. In reality, it is not helpful or appropriate to imagine that a transmasculine instrument is “female” and then subsequently influenced by testosterone. Instead, we may consider that the transmasculine instrument exists in a “pre-transition,” “in transition,” or “post-transition” state, the same way we conceptualize a “pre-pubescent,” “adolescent,” or “post-pubescent” cis male voice. Furthermore, in this handout, words like “masculine,” “feminine,” “male,” and “female” occasionally appear in quotation marks to signify that these terms are culturally constructed and only have meaning within a specific socio-historical context. These terms reflect our perceptions of gender, rather than a biological reality of gender. For more

information about how culture and society shape our experiences of gender, please consult Judith Butler's seminal book, *Gender Trouble* (2006).

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Let's talk about voice change through testosterone therapy! Many people have questions or concerns about this topic, but testosterone therapy (as it is currently administered by medical practitioners) is generally safe and appropriate for transgender singers who wish to “masculinize” their voices. These singers often find great joy and wholeness after settling into their emerging new voices.

Voice change follows a linear sequence. It's a journey from point A to point B which is different for everyone, but is still a predictable process. If you start testosterone but then stop after 8 or 10 months (or less), then you will arrive at a destination somewhere between point A and point B, partially “masculinizing” but not fully completing “masculinization” through transition with T. (If you then resume testosterone later, your transition will pick back up where it left off, and you'll arrive at point B eventually.)

Case study: Student 1 is a trans musical theater singer who began low dose testosterone therapy at the age of 18. He chose to stop testosterone after about nine months, deciding that he was satisfied by partial masculinization and did not need to continue using testosterone. His range, tessitura, and register transition points had already dropped from soprano to tenor, but his vocal tone (“timbre”) is different from that of a cisgender tenor, with a more gender-ambiguous sound. He expressed an interest in performing roles across the gender spectrum, and I suggested that he could consider himself a hybrid alto/tenor (capable of performing as either of those voice types), and could theoretically audition for both “male” and “female” roles.

Case study: Student 2 is a trans/non-binary singer who began testosterone therapy at the age of 23. After one month of testosterone use, they realized they were unsure if testosterone was the right choice for them. They stopped using testosterone, but their tessitura and register transition points had already dropped from soprano to mezzo-soprano. (It was unclear whether their range was affected, but their tessitura had clearly shifted, and their

vocal tone quality sounded like a mezzo-soprano tone.) After waiting three or four years, they resumed use of testosterone, and their voice change continued. Their new voice has now stabilized as a recognizably tenor instrument, with the range, tessitura, and register transition points of a tenor.

Question: Will testosterone negatively affect my voice?

During transition, several temporary vocal symptoms typically emerge, including a generalized inflammation of the larynx. This can cause a multitude of vocal issues for singers. The inflammation is caused by the body's process of adjusting to new hormone levels. Once the body is adjusted to the new levels (usually within 18 months or less), these temporary symptoms go away on their own. You do not have to do anything to "resolve" or "fix" the vocal issues that specifically arise during transition.

If you stop taking testosterone (for instance, if you've met your transition goals and you do not require further testosterone use), that will also cause your transition-related vocal symptoms to go away. Your body will eventually find a new balance of hormone levels, and vocal functioning will improve as a result.

Singers can experience lingering vocal problems after transition is complete, often due to misunderstandings about how to use their new vocal instrument, and/or from new "bad habits" they picked up during transition (details below). These individuals usually benefit from voice training and/or vocal practices that help them completely relax their voices and orient to their new instrument. Often, this will include learning new singing technique to support successful functioning of their new voice.

Singers who transition often face the same kinds of vocal difficulties. It's important to know that these specific vocal challenges are actually quite common after transition, and that many individuals overcome these issues over time through voice training. Resiliency improves when singers have patience, curiosity, and the humility to exist in a state of "not having it all figured out yet" in the process of retraining their voice after transition.

Case study: Student 3 is a transmasculine singer who began testosterone therapy at the age of 50. When he was 52, he contacted me for voice training because he had severe vocal symptoms that he could not resolve on his own. Symptoms included chronic hoarseness, tension and discomfort in his voice, and frequent vocal fatigue. I began working with him, focusing on relaxing his larynx and developing a less effortful sound production in his lower voice. As he made progress towards these goals, a clearer tone began to emerge, and I could identify that the student has a deep bass-baritone instrument! 3 years later, his voice is now clear, full, and powerful. He is currently preparing a 1-hour solo recital featuring both classical art songs and musical theater solos. Notably, he sings classical music with a skillful chiaroscuro.

Question: Will a “low dose” transition be a better option for my voice?

“Low dose” testosterone is an option that can be gentler on the body and therefore gentler on the voice. In general, vocal functioning may be temporarily compromised by any abrupt changes in hormone levels, so some theorize that taking a low dose is less disruptive because the hormonal changes occur more gradually.

Transition through low dose testosterone still leads to complete masculinization, with the same eventual outcome as a transition on a full dose. (Note: Voice teachers are not medical professionals and cannot dispense medical advice. If you want to learn more about low dose options, including specific dosages and methods of ingestion, please consult a medical provider.)

Question: How long will it take for my voice to change?

Voice change can take anywhere from 2-5 years to complete, with the most dramatic changes typically occurring within the first 12-18 months. The sequence of voice change is always essentially the same, but the length of time each stage takes may be shorter or longer for different individuals. This is due to individual differences in the body’s ability to absorb testosterone and genetic differences in what the body does with that testosterone. (See below for more information about the various stages of voice change.)

Question: If I miss a few doses, or quit testosterone altogether, will my voice change back to my pre-transition voice?

No, voice changes through testosterone are irreversible. If you are inconsistent with your doses, you may experience some (extremely minor) fluctuations in the pitch or sound of your speaking voice as a side effect of changes in the hormone levels in your body. These fluctuations are caused by laryngeal inflammation that may come and go with hormone irregularities, and do not indicate that your voice change is reversing itself.

Question: How does cis male voice change in adolescent boys compare to vocal transition for transgender people who pursue testosterone therapy?

In the chart below, the left column describes cis male voice change in adolescence, as John M. Cooksey outlines in the book *Working with Adolescent Voices* (2005). In the column on the right, I discuss transgender voice change through testosterone, as depicted in a *Journal of Singing* article by Tessa Romano, “Types of Testosterone Therapy and Their Effects on the Voices of Transgender Singers” (January/February 2022). Romano’s research is further supported by my experiences “in the field” teaching singers on testosterone.

<p>Adolescent cis male voice change typically occurs between the ages of 12-15.</p>	<p>Vocal transition via testosterone therapy typically occurs above the age of 16 or 17. For many, transition begins in adulthood.</p>
<p>Hormones and their effects: During adolescence, the individual is exposed to abruptly higher levels of testosterone and growth hormones, which causes a period of accelerated growth and maturation. The individual experiences changes to the body, including significant growth of bone and cartilage, and observable changes to the voice.</p>	<p>Hormones and their effects: Testosterone is administered medically to individuals in their late teens or in adulthood. This causes a period of accelerated changes to the body, including observable changes to the voice. Individuals are not exposed to growth hormone during transition but some minor bone and cartilage growth may occur (for individuals under the age of 30).</p>

<p>Laryngeal growth: Ligaments and laryngeal cartilages grow and develop, often causing an “Adam’s apple” to appear in the front of the neck.</p>	<p>Laryngeal growth: Some minor growth may occur in laryngeal cartilages for younger individuals, but adults who transition typically do not develop a protruding “Adam’s apple.” (Romano’s article references anecdotal evidence that some individuals may still develop an “Adam’s apple” if they are younger than 30 at the time of transition, but this is highly unusual.)</p>
<p>Vocal cord growth: Vocal cords grow thicker, causing vocal range to drop, and cords also grow longer (because the larynx is growing larger)</p>	<p>Vocal cord growth: Vocal cords grow thicker, causing vocal range to drop, but usually do not grow longer (unless laryngeal growth occurs)</p>
<p>Vocal tract: Vocal tract expands in multiple dimensions as the head, neck, and chest grow bigger. This gives the voice a darker, more “masculine” sound due to the emergence of larger resonating cavities.</p>	<p>Vocal tract: Vocal tract may shift and grow, especially for those individuals who experience growth in facial bones and/or a slight reshaping of the face during transition. (This is something I have personally observed in my students.) These types of changes will darken the vocal tone, having a masculinizing effect. Depending on the individual, they may always have a distinctly transmasculine tone quality (“timbre”) to their voice due to the different size and/or shaping of their vocal tract (as compared to an adult cis male). This does not indicate a flaw or limitation in the transmasculine instrument, but simply an aesthetic feature of this instrument type.</p>
<p>Note: If an individual experiences a masculinizing voice change in adolescence, but subsequently wishes to “feminize” their voice, this can be</p>	<p>Note: If a transmasculine individual wishes to further darken and masculinize their voice, they can experiment with techniques that</p>

accomplished through techniques which manipulate and reshape the vocal tract to produce more “feminine” sounds. Many experts in the field of transfeminine voice training are well versed in these vocal strategies. I recommend The Voice Lab in Chicago as a starting place for further inquiries on this topic (thevoicelabinc.com). You can also find resources for transfeminine voice training via the London Trans Choir (londontranschoir.com), led by Stephen Davidson ([@transvoice on Tik Tok](https://www.tiktok.com/@transvoice))

reshape the vocal tract to give speech or singing a more “masculine” color. The resources listed to the left of this column are also suitable for help with “masculinizing” voice training, or you can contact me (peterfullerton.com/trans-resources) for this type of service. Please take great care when pursuing vocal tract manipulation strategies, and be gentle with your vocal instrument.

As a voice teacher for the transmasculine community with over 10+ years working with transitioning voices (serving 50+ singers on testosterone in one-on-one voice training sessions), my hypothesis is: although the cis male voice and the transmasculine voice have physiological differences due to a different process and timeline of maturation, this does not result in a difference in vocal functioning, nor in permanent vocal symptoms after transition. In my experience, any vocal issues that remain after transition can subsequently be corrected through voice training.

Furthermore, as the parent of a 15-year old cisgender boy, having just observed all my son’s friends’ voices changing over the past 3+ years, I believe that transmasculine voice change through testosterone therapy essentially “feels like” the teenage voice change that cis males experience! The biggest difference is in when the voice change occurs within the individual’s lifespan. Ultimately, the increased age at the time of transition suggests that transmasculine singers may have unique inner resources and emotional maturity for navigating the voice change process.

Question: What are the different stages of voice change?

Researcher John M. Cooksey spent decades studying cisgender male voice change in adolescent singers. The information below draws directly from his

work, as published in the book *Working with Adolescent Voices* (2005). This book may be useful as a resource for anyone who wishes to pursue a deeper understanding of voice change (and, at the time of this writing, it is extremely affordable, costing only \$10 USD). It contains the exact information every transitioning singer needs: tips for protecting the voice as it changes, and voice training exercises for developing the new voice as it emerges.

Below, I have summarized and paraphrased Cooksey's model of the 5 stages of voice change, while expounding slightly on some of his ideas on topics that seem particularly significant for the transitioning vocalist. My observations "in the field" observing transitioning singers affirm my belief that voice change via testosterone therapy follows these same 5 stages that Cooksey observed and cataloged. The information below includes identifying features of each phase of voice change, with all of their various inconveniences.

Stage 1: The onset of voice change

- Voice may feel "off" or tender (similar to having a very light cold)
- Singing range decreases
- Possible loss of high range in particular
- High notes may feel tighter and/or breathy
- Voice loses some richness of tone
- For some, Stage 1 may last a relatively long time

Stage 2: Voice begins to drop

- New low notes begin to emerge. This process is widely variable:
 - For some, there is an abrupt complete drop in range, seemingly overnight
 - For some, there are multiple phases of range dropping, commonly by thirds(ish) in each sequential drop
 - For some, it takes a long time for this step to even begin. This can be normal for some individuals, but if it feels like you've been waiting for a long time and nothing's changed, consider talking to your doctor about getting your T levels checked!
- High notes become unstable
- Sometimes high notes unexpectedly break off into head voice/falsetto
- Singer may lose coordination between registers, causing voice

- cracking; increased difficulty with register transitions
- Vocal tone may be thicker, darker in color, and less resonant (this may indicate inflammation in the vocal instrument, which often gets even worse in Stage 3)
- Projection may become more challenging (i.e. “It’s harder for people to hear me in noisy, crowded places”)

Stage 3: Chaos ensues

- Voice changes may start to appear more dramatic
- Vocal stamina may be extremely limited, with voice fatiguing after even short periods of singing
- Difficulties with agility in all parts of the range
- Vocal tone may become huskier, hoarse, or breathier
- Inability to produce a clear tone causes many singers to “push” or try to force the sound out. Pushing or forcing the tone may cause minor short-term damage to the voice, and additionally may cause the singer to develop bad habits that may be hard to unlearn later
- Head voice/falsetto may disappear completely, with the notes just above the break being especially hard to access
- The most comfortable part of the range may be extremely limited (maybe only a half an octave is truly comfortable – this is not unusual)
- Singer may feel distress and/or anxiety due to instability and unpredictability of vocal production (“When I open my mouth to speak/sing, I have no idea what is going to come out!”)
- Fortunately, this is the shortest stage of voice change, typically 1-3 months or less. Low dose transition may decrease the likelihood of severe vocal symptoms during this stage

Stage 4: Stability within a new normal

- The most dramatic vocal changes have concluded by the end of Stage 3
- Voice becomes more stable
- Range is more expanded (as compared to Stage 3)
- Voice quality is clearer but may still sound light and/or thin
- Agility remains compromised and voice may feel clumsy
- Falsetto/head voice may (or may not) come back during this stage

- Some singers develop a spot in their range (right around or above middle C) where no sound can be produced at all — this is not unusual
- The voice feels less powerful than it did before testosterone; some singers may continue to have an urge to push or force the sound to compensate or project
- Stage 4 is also one of the shorter stages

Stage 5: Emerging new voice

- Range, flexibility, and vocal functioning gradually increase
- Voice develops more consistency and is finally less unpredictable
- Head voice/falsetto becomes clearer and more focused
- Lower parts of the range may feel more comfortable
- In fact, in this stage, lower parts of the range may be the MOST comfortable range for sustained singing
- Some of the high range may still be tentative or unstable in Stage 5 but often continues to improve and develop after transition is complete
- Vocal cords have finished growing thicker by this stage
- Vocal tract may still be shifting and/or expanding, causing a subtle darkening of the vocal tone (which may cause further “masculinization” in the sound of the voice)
- Singer may need to adjust speaking voice to a slightly lower pitch range now that voice has fully dropped
- Tension may develop around the larynx if speaking voice has not properly adjusted, and/or if the singer has not figured out how to adjust their singing technique to their new voice

Question: How can I protect/maintain/preserve my singing voice through vocal transition?

Many singers ask this question, but the truth is that most of the vocal symptoms you experience during transition will resolve on their own, without interventions. Indeed, a relaxed “wait and see” attitude may help more than taking concrete actions. With that in mind, here is more specific advice for each phase of voice change:

Voice training advice for Stages 1 & 2

- Don't panic, be patient, and trust in the process. Remind yourself repeatedly that vocal symptoms are TEMPORARY and NORMAL during transition (and do not indicate an emergency or cause for alarm)
- Be prepared for instability, confusion while singing, and bizarre singing experiences
- Listen to body cues that tell you when a specific pitch is uncomfortable, and don't force out notes that are harder to access
- Adapt to the temporary loss of range by restricting most of your singing to the specific range that feels comfortable on any given day
- Let high notes be unstable and resist the urge to "control" them through extra muscle engagement or tension
- Let low notes be quiet — don't try to push for volume or projection
- Learn to be curious from week to week about your still-evolving voice, subtle changes to your range, and changes in register transitions
- Try to release yourself from any expectations of what you think your voice "should sound like" or how singing is "supposed to feel"

Voice training advice for Stages 3 & 4

- You may need to limit the amount of singing you do per day during Stage 3 of voice change. Listen to your body, and learn to recognize when you are at risk of over-singing and need to take a break
- If your voice sounds rough or hoarse, don't push or force your voice to produce a note or to create a clearer tone (hoarse voices need rest)
- Try not to panic, spiral into catastrophizing, or judge yourself harshly during this time. You may truly feel like you've "ruined" your voice, but keep reminding yourself that your vocal symptoms are TEMPORARY and likely will improve soon (with the most severe symptoms often lasting less than 3 months)
- Stick to singing in whatever range feels comfortable, even if that's less than an octave! You may need to transpose songs, octave-jump through a song to stay in your comfortable notes, and/or choose songs that have a very limited range

- Register transition exercises may help with register coordination issues, but don't worry if you feel like you're not getting results from these exercises – you may just need a little more time for your voice to keep stabilizing

Voice training advice for Stages 5 & beyond

- Work on relaxing your larynx and throat and cultivating a relaxed sound production in your speaking voice. This may require you to slightly lower the pitch range of your speaking voice to find greater ease and comfort in your new voice. Experiment and be curious about your most comfortable range for speaking
- Continue to develop healthy singing techniques in the most comfortable parts of your singing range, and use that as a basis for range expansion. (Do not try to push or force notes that are outside of your range — this is not a recommended strategy for gaining range)
- In Stage 5, you may find greatest ease while singing in your lower and middle voice
- Many singers continue to gain high notes in the year or two after transition is complete. It may help to retrain your breath support, since newly thickened vocal cords may require increased breath energy
- Register transition exercises, in frequent application, will accelerate regaining coordination between registers
- Agility exercises will help regain agility in Stage 5 and beyond
- After your voice has changed, it may be useful to identify your new voice type, particularly if you wish to pursue voice training which is specialized for your instrument

Question: What will my voice be like after transition?

After masculinization through testosterone is complete, transmasculine voices typically resemble cis male voices and typically function like cisgender tenors, baritones, and basses. Post-transition, some transgender voices do have a distinctly transmasculine sound (as discussed above), but this unique tone color is merely an aesthetic feature and not a difference in functioning.

Newly emergent voices may feel a bit less powerful in the year or so immediately after transition (which is also frequently true for the newly changed cis male teen voice), but strength, power, and projection will return with time, and can be enhanced through voice training.

In particular, after transition you will likely benefit from voice training specifically designed for male voices, and/or from teachers who deeply understand male voices. For some transmasculine singers, this is especially crucial for understanding how to use their new vocal instrument. Anyone who has extensive training as a classical soprano or mezzo-soprano prior to vocal transition may need a complete overhaul of their singing technique once their voice drops into a “male” singing range. This was certainly true for me personally, and I benefited tremendously from studying vocal pedagogy for classical tenor voices. This included developing my “mixed voice” and incorporating breath support strategies for operatic high tenor singing.

Many voice teachers and choir directors fail to recognize the similarities between transmasculine voices and cis male voices, and consequently treat the transmasculine vocal instrument as if it were something extremely different, unusual, or confusing. This issue of seeing transmasculine voices as profoundly “different” seems to echo a larger cultural problem whereby some people cannot or will not recognize that trans men are men. Ultimately, trans male voices are MALE voices and should be trained as such — not only because trans people deserve affirmation, but also because transmasculine voices actually do function and behave entirely like cis male voices.

Some transmasculine people, especially people who are non-binary, agender, gender fluid, genderqueer, and/or gender nonconforming, prefer to retain “feminine” singing and speaking habits after transition. These individuals can often benefit from studying transfeminine vocal strategies that are designed for voice feminization. It is also possible for an individual to cultivate a range of gendered vocal sounds, any of which they can apply at will depending on the setting and/or circumstance.

Vocal transition is difficult, but the results can be miraculous. Incredible things happen when we follow our hearts!

For more content from Peter Fullerton, or to learn more about his work with transgender singers, please visit peterfullerton.com, or follow PeterFullertonVoice on social media.

For questions about voice training with Peter, or to set up a consultation, contact voice@peterfullerton.com.

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Disclaimer: Voice teachers are not medical providers and cannot give you medical advice because we do not have the necessary training or credentials. If you have any questions about testosterone dosage, methods of ingestion, side effects, long-term impact on the body, or appropriate next steps for your medical transition, please direct those questions to a trusted medical provider. Voice teachers can help you understand testosterone's effects on the voice but do not have specialized insight into other ways that testosterone impacts the body. If you do not trust your primary health care provider to give you accurate, appropriate, or knowledge-based treatment, please seek out another practitioner who can assist with your transition and ensuing care.

[Transgender Pulse](http://transgenderpulse.com) is an online resource directory that can help you find a trans-affirming medical provider, speech and language pathologist, mental health therapist, or other health care specialist:
transgenderpulse.com/resource-locator/

[The National Center for Transgender Equality](http://transequality.org) has compiled some helpful resources for anyone who wishes to learn more about transgender and non-binary people, our needs, and/or our life experiences. This information may be helpful to you or to anyone in your life who would benefit from more education on these topics: transequality.org/about-transgender