



## Voice Masculinization

Dr. Haben aims to create a voice for you that:

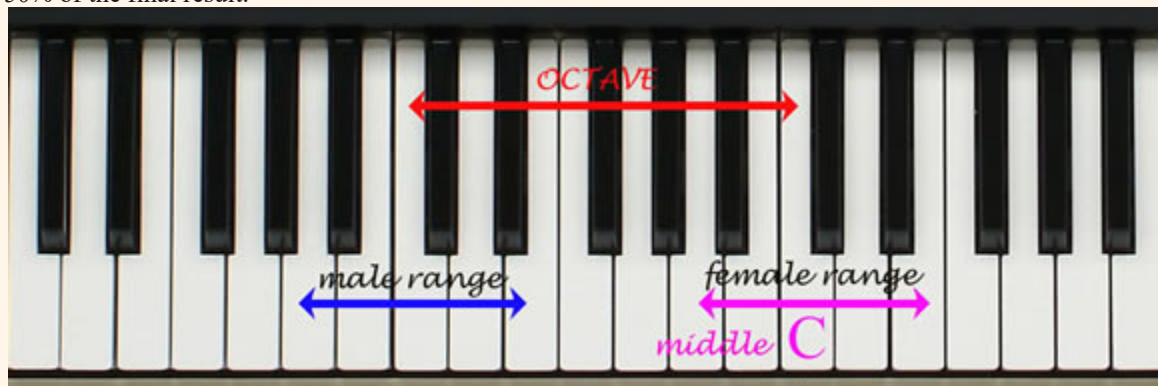
**sounds natural**  
**more commanding**  
**avoids being misgendered**

**PLEASE** read through **EVERYTHING** carefully.

PITCH LOWERING masculinization voice surgery is performed far less frequently than voice feminization surgery for several reasons. The most important one is that 75% of people can masculinize their voice using testosterone therapy whereas feminizing hormones such as estrogen and/or testosterone blockers have virtually no impact on feminine alteration of pitch. Masculinization voice surgery can be performed on both pre or post GRS FTM transgendered clients, biologic males, cis-males and gender-neutral individuals seeking lower pitched voices. It is intended for those who have tried and failed or cannot have testosterone therapy for whatever reason.

The DEGREE of pitch reduction is finite and largely determined by the size, shape and mass of someone's larynx. Surgery to lower the pitch of the voice is relatively straight forward for most patients in experienced hands. Having the final voice perceived as being male, instead of just a lower pitched female voice goes well beyond pitch lowering surgery. The first step requires understanding of the differences between "pitch", "voice" and "speech." The vocal cords are simply 'sound generators'. Pitch is the rate at which the vocal cords vibrate and determines the frequency of a sound produced. Pitch is essentially ALL that the voicebox (larynx) does. The pitch at which we speak is called the speaking fundamental frequency (SFF) and the array of pitches that our larynx can produce is range. An untrained voice usually has a little over an octave of range, which are 12 notes on a piano. Voice is what results as we mold that sound. Voice is shaped by the size and shape of our throats, mouth, nose and sinuses, giving it resonance, just like the size and shape of a piano gives that sound character. The "voice" or sound of an upright piano is different than that of a concert grand piano even if the same note is being played. It is important to understand that the resonators of your voice, the shape of the throat, mouth, and sinuses cannot be changed in voice

masculinization surgery. Even gender reassignment surgery and/or facial masculinization cosmetic surgery cannot significantly change these resonators. Assessing these areas pre-operatively are vital to predicting how the voice might sound and be perceived post-operatively. Biologic female resonators are very different from biologic males. Next, voice is shaped into words and sentences. This is speech. A genetic female uses a different part of the brain to produce speech than a genetic male and has a certain sing-song quality called prosody. Prosody and resonators are why the brain of a *blinded* listener (therefore no visual cues) could subconsciously perceive a voice as being female instead of a male voice even if the pitch is in the proper range. Prosody, like resonators, cannot be changed with hormones or surgery. It must be learned, the way an actor would acquire the skills to take on another's speech patterns of sorts. It requires a speech therapist who is very, very experienced with these issues. For most, years of practice are required to perfect male prosody and have it sound natural and effortless. Perfecting male prosody is 50% of the final result.



The average female speaking fundamental frequency is right around middle "C" on a piano (the normal range is within the pink arrows). The average male SFF is in a range about an octave lower than female, within the blue arrows in the picture. An octave is 12 notes on the piano (including the black keys!). Generally, pitch can be lowered up to 2/3 of an octave, or  $8 \pm 4$  notes, on average and in many cases, although results can never be guaranteed in anyone. The goal is to end up with a SFF in or near the normal male range. There are many things that help predict the degree of expected pitch reduction, such as age (older clients have less predictable healing), whether you ever smoked; have (or had) vocal fold polyps or scarring from voice abuse; and where your natural SFF lies. A thorough pre-operative, in-person evaluation will help predict the degree the voice could be lowered under ideal conditions. Please review the FAQs below.

## Surgery

If you look at the strings of a real piano, the lower notes have strings that are thicker, longer and less tension (think of relaxing a rubber band). Human vocal cords vibrate in much the same way. The goal of masculinization voice surgery is to make the vocal cords act thicker, longer and less tension to vibrate at a slower frequency which equates to a lower pitch. To achieve this, voice masculinization surgery requires both an endoscopic ("through the mouth") and transcervical ("incision in a neck crease") component and takes about 2-2.5 hours in the operating room under general anesthesia. Endoscopic-only surgery is not effective.

# Questionnaire

Please fill out the medical and voice questionnaire E-MAIL at the top of the page AFTER having read through all of the important information here. Please specify if you are or ever were a smoker, have a chronic medical condition such as diabetes, take blood thinners, or ever had surgery on your vocal cords (for any reason).

## Examples

The following examples represent AVERAGE results that a TYPICAL client undergoing voice masculinization could achieve. These examples aim to provide potential clients with realistic, achievable and reasonable expectations in most cases. In each example the client is first reading the “rainbow passage” (pre-operative) and then re-reading the same passage at least 3 months post-operative. 90% of the final surgical result depends on how one heals and the degree to which post-operative instructions are followed. As such, final results can never be guaranteed.

INSERT MASCULINIZATION EXAMPLE 1

INSERT MASCULINIZATION EXAMPLE 2

INSERT MASCULINIZATION EXAMPLE 3

INSERT MASCULINIZATION EXAMPLE 4

## Cost:

All of the masculinization procedures come packaged to include the cost of the surgery; pre-operative consultations and all post-operative visits; ALL hospital charges for outpatient surgery including associated anesthesia fees, as well as MediCab transportation to and from the hotel and hospital on the day of surgery; 2-nights Marriott Hotel stay for you and your chaperone as well as all appropriate taxes. Overnight hospital observation is mandatory for those travelling without a chaperone; airport and clinic transfers; meals; entertainment; special testing or additional rooms are not included. Post-operative medications are not included, however, your private insurance may cover these costs. The package for open and endoscopic masculinization voice surgery is currently \$7,250. The hospital requires payment of a 50% deposit to secure a confirmed surgery date. Unfortunately, we do not participate in Care Credit or have payment plans available. PLEASE read the sections on REFUNDS, GUARANTEES and REVISIONS carefully.

## Refunds:

**What is the policy regarding refunds? Can surgery be rescheduled?**

A: We understand emergencies occur and are happy to reschedule your surgery at no additional cost. If you decide to cancel your surgery altogether you will be assessed a non-refundable \$500 fee to cover the Center's expenses in setting up your surgery, even if an in-person consultation has not yet been done. Refunds take 5-10 business days to process.

**What if my case is cancelled/postponed for a medical reason?**

A: It is very important that you disclose any medical condition well before surgery. Should you develop a severe cough, cold, flu, illness or breathing problem the week before surgery you must call the office at once. Your surgery will likely be rescheduled. Rarely, patients are not cleared for surgery due to an undisclosed medical condition after they have travelled to New York and are awaiting their surgery. Your surgery will be postponed until the medical condition has been evaluated/ corrected and rescheduled for the first available date. There may be some additional hospital costs if additional testing is required. No reimbursement is possible for the transportation expenses incurred and hotel nights used.

**What if I miss my pre-operative consultation the day before surgery?**

A: The pre-op consultation on the day or two before surgery is mandatory even if you have had a prior in-person consultation. If you miss this appointment your surgery will be rescheduled even if it was missed due to travel delays / bad weather or circumstances beyond your control. We recommend anyone travelling during the winter months, having a connecting flight, or coming internationally arrive a day early.

## Guarantees:

**Are my results or degree of pitch reduction guaranteed? Am I paying for a surgery or a specific result?**

A: You are paying for a surgical procedure which has inherent risks, including that of non-healing, surgical failure and suboptimal results. The degree of pitch reduction is finite and largely determined by the size, shape, age, condition and mass of your larynx. Additionally, most of the final surgical result is determined by factors out of the surgeon's control, including how well clients heal, as well as how carefully post-operative instructions are followed. As such, there can be no outcome guarantees, implied or expressed except that Dr. Haben will use all his expertise and experience for every client.

**What is your metric of success? Is pre or post-operative speech therapy necessary?**

A: The best metric for surgical success is NOT how much the pitch is lowered, but rather how often one is misgendered over the telephone to an unknown, blinded listener. Remember, speech therapy is a vital component of the final result. Working with a trans-qualified speech therapist pre-operatively and resuming no sooner than 3 months post-operatively is important. The best place to look for a trans-qualified speech therapist is through recommendations from others in the community.

## REVISIONS:

**Can the surgery be revised if I wish for more pitch reduction? Is there a cost?**

A: It is unusual for voice masculinization surgery to require revision at our Center. Unfortunately, the pitch is usually lowered to the greatest amount allowed by one's anatomy and significant further pitch reduction is not physically possible, unless previously done elsewhere. Rarely, this is not the case and revision surgery could be considered. As with procedures paid for by private or government insurance, revision surgery will incur a charge, although Dr. Haben will petition for the greatest amount of cost reduction permissible.

## FAQ:

**What if I would like to come in just for a consultation?**

A: Consultations are one hour and include voice analysis, physical examination, a scope of the voicebox and a lengthy discussion regarding expectations. The charge of \$500 will be applied towards the cost of the surgery package.

**Can't I just send you a voice recording?**

A: The Center gets dozens of requests daily for voice analysis. It is impractical as well as unfair to those who have taken the time and expense to travel for an in-person consultation to do complimentary voice analysis for everyone. Additionally, voice analysis is only a small part of determining whether a client is a good candidate for voice surgery and cannot replace an in-person consultation.

**Where is the incision?**

A: The incision is made in a skin crease in the middle of the neck. The incision is hidden as best as possible in a skin crease and closed using plastic surgery technique. Prior incisions cannot usually be used.

**Do you create or augment the Adam's Apple?**

A: Yes, although the masculinization procedure is intended to be functional not cosmetic, however, a surgical implant to increase the projection of the Adam's Apple is done.

**Can I get a letter of support for name/gender change legal petitions?**

A: Absolutely, once you are at least 1 month post-operative voice masculinization.

## General:

**How many surgeries does the Center perform? Is the surgeon Board Certified? Fellowship trained?**

A: The Center is dedicated to laryngeal (voicebox) surgery. Dr. Haben has performed hundreds of pitch alteration surgeries and thousands of voice surgeries. The different techniques involved in masculinization voice surgery have been developed by Dr. Haben and continue to be perfected at the Center over the last 10+ years. Dr. Haben is Board Certified in Otolaryngology and Fellowship trained in laryngology and voice surgery, as well as earning a Master's Degree for his research in voice and laryngology. Dr. Haben routinely lectures and publishes research on voice surgery and related topics.

**Why is a chaperone needed after the surgery? What if I do not have one?**

A: It is mandatory hospital, State and Federal guidelines that any patient undergoing general anesthesia MUST have a responsible adult with them for 24 hours after surgery. An acceptable chaperone must be 18 years or older and known to the client for at least one year. It is UNACCEPTABLE to "meet" a chaperone while in Rochester, "bunk" with another client having surgery the same day, or "hire" someone to stay with you. If you are not accompanied by an acceptable chaperone, you will be required to spend the night in the hospital. There is an additional cost of \$650 for overnight hospital observation; however, you will be credited the second hotel night against that charge.

**Do you accept Care Credit? How much is required to confirm a surgery date? What payments are accepted?****What happens if I need to change the surgery date at the last minute? How far in advance do you book?**

A: The practice does not accept Care Credit. Credit cards are the preferred method of payment. Surgery may only be booked and confirmed once the 50% deposit is made. Personal checks are accepted ONLY from US clients with checks drawn from a US bank and surgery dates are not confirmed until the check clears, typically 10-20 business

days depending on the origin of the check. Changes are permitted without penalty, as long as the policy is not repetitively abused. Most non-peak surgery dates book 2-3 months in advance.

**Do you accept Medicare or private insurance for masculinization? Do I get any forms that can be submitted to my insurance? Or to my accountant for taxes? Is there a procedure (CPT) code for the surgery?**

A: Masculinization voice surgery is an elective cosmetic procedure. We neither accept Government or private insurance for the procedure nor will submit any forms to government or private insurance. A receipt of payment is provided; however, we are not responsible for insurance reimbursement, tax rebates or credits. Receipts can NOT be altered, modified or amended under any circumstance to meet any requested criteria. The procedure (CPT) code used for "open and endoscopic masculinization laryngoplasty with thyroid chondroplasty" is 31599.

**All your surgery dates are on Wednesdays. Do you operate any other day?**

A; No. All surgeries occur on a Wednesday and the Center cannot accommodate special requests.

**How will we communicate?**

A: It is vitally important that we have an accurate e-mail, telephone number and current mailing address. ALL confirmations and instructions occur via e-mail and it will be your responsibility to check your e-mail often as your surgery date approaches.

## Travel:

**Can I book my travel first and then call for a surgery date?**

A: No. Surgery dates are not confirmed until the deposit is paid. We cannot "hold" a date without payment and strongly advise against booking travel until you receive confirmation of your surgery date by e-mail.

**I am coming internationally. Does this change anything?**

A: International clients, *except* those from Ontario and Quebec, Canada, are required to stay an additional 7 days post-operatively before being cleared to return home. Clients from Alaska and Hawaii are considered "international" in this case due to the distance of air travel. Additional hotel days may be arranged through the hospital at a discounted rate.

**I need more days in the hotel or more total rooms. How is this arranged?**

A: The package comes with a two-night hotel stay for two adults: the night before and the night of the surgery. The hospital can arrange additional nights/ rooms at the hospital's pre-arranged discounted rates of approximately \$160-180 per night (subject to change without notice depending on availability).

**Can I book my own hotel?**

A: Yes, however, if you are only in town for the two nights, we recommend using the hotel as part of the package. If you are required to stay longer/ arrive earlier, you may choose to make your own arrangements. A credit of approximately \$160 will be discounted from the total package price for each of the 2 hotel nights not used. If you book your own hotel, we cannot offer transportation on the day of surgery.

**What if I am local and do not need the hotel or transportation?**

A. A discount for any unused hotel nights or transportation will be issued by the hospital. Please note that a chaperone is still required, even if you are local.

**When should I arrive?**

A: Pre-operative consultation is mandatory even if you have previously had an in-person consultation. These occur on the Tuesday before Wednesday's surgery. If you miss your Tuesday consultation for any reason, including travel delays, your surgery will be rescheduled. For this reason, clients coming by air internationally or with connecting flights are strongly recommended to arrive MONDAY. Flight delays and cancellations are common in the North-Eastern United States, especially during winter. Please plan accordingly.

**Any other advice for foreign travelers?**

A: We recommend informing your credit card company of your travels and having a back-up just in case. Remember, you will be on voice rest post-operatively and can NOT have a "discussion" with your credit card company or bank if your card is declined for any reason.

## Medical Questions:

**Is there pre-operative testing required? I have heard that some surgeons require a CT scan before to prevent damage to the vocal cords.**

A: In general no, unless you have a chronic medical condition, such as diabetes, or a history of heart problems, etcetera. Sometimes medical clearance from your Primary Care Physician is required. If you have a question or concern please contact our office before you make any arrangements. The hospital will make a pre-operative telephone call to you the week before the surgery and make any necessary testing or clearance recommendations. You MUST arrange to be available for the anesthesia call or your surgery could be CANCELLED. A CT scan is not required. A surgeon that requires a routine CT scan in every patient to better understand the anatomy of the voicebox well enough to avoid damaging the vocal cords probably should not be doing this sort of surgery. This is not true for facial feminization, where CT scans are generally recommended.

**Should I see my primary care physician first? What if I have a chronic medical condition?**

A: In most cases it is not necessary, however, if you have a chronic medical condition such as asthma or heart problems; have not seen a doctor in many years; are concerned about your ability to undergo general anesthesia or are over age 60 a visit to your PCP is advised.

**Do you perform the surgery on someone under 18? Older than 60?**

A: Clients under 18 must have parental permission, be accompanied by a parent or legal guardian and have a letter of support from a qualified psychologist or psychiatrist. There is no "maximum age" however, the expectations for achieving a truly masculine sounding voice decreases with age due to reduced plasticity, hardening of the cartilages, stiffening of the vocal cords, and less optimal healing compared to younger individuals. Results, and correspondingly expectations, should be more modest in older individuals. This does not mean that very good results cannot be achieved, just that they are harder to accomplish due to factors that are out of our control. Reasonable expectations will vary from client to client and can only be accurately determined at the time of consultation and examination with voice analysis.

**I am/was a smoker. Does this matter?**

A: Overall, former smokers heal worse than nonsmokers. Current or recent smokers fare much worse than former smokers. Of course, the amount and duration of smoking matters a lot. I do not test for recent or current smoking, relying on patients to tell the truth. Failure to disclose prior/ recent/ current smoking status inevitably results in

suboptimal outcomes, frustration and disappointment. Current and/ or post-operative smoking (or extensive second-hand smoke exposure) will have a significantly negative impact on success. Former smoking does not automatically prevent successful surgery.

**I have not yet had gender reassignment surgery (GRS). How did this impact my voice? Is it better to have GRS first?**

A: Following masculinization voice surgery clients are not permitted to have any elective surgery under general anesthesia ("with a breathing tube") for 6 months. Some clients will heal fast enough to reduce this restriction to 3 months; however, they are required to present to the clinic in-person at 3 months for an examination and clearance. If the vocal cords have not fully healed, clearance is not granted. This possibility must be taken into consideration when timing this and other associated surgeries. Pre versus post GRS does not otherwise impact the success of masculinization voice surgery.

**Do you perform masculinization voice surgery on biologic males, cis-males or gender-neutral individuals?**

A: Yes. As long as potential clients have had some speech therapy and tried, or been deemed not a candidate for, testosterone therapy. All of the rest of the information contained here within is otherwise applicable.

## Operation and Technique:

**Can you re-use a prior scar? Do you use a "plastic surgery" type closure?**

A: In general, a prior incision cannot be re-used because they are under the chin and too far away. Incisions are as small as reasonably possible without compromising the surgery; are hidden to the greatest extent possible in a skin crease; and are closed using plastic surgery technique.

**I am a singer. How does this impact things?**

A: Pitch-lowering masculinization voice surgery does not give anyone a singing voice that did not exist before. Nor does it give additional baritone or bass range. The surgery is intended to lower SFF pitch and not positively impact singing range or capabilities.

**How much can you lower the pitch?**

A: The average is  $8\pm 4$  notes on a piano, or  $2/3$  of an octave or roughly 80 hertz in many clients. Not every client will achieve the average pitch reduction and results can never be guaranteed.

**I hear there is a risk for a chipped or broken tooth or teeth?**

A: The endoscopic portion of the procedure is "trans-oral" (= through-the-mouth). Every precaution is taken with the teeth, however clients with smaller mouths, larger tongues, sleep apnea, limited neck extension, baseline poor dentition or extensive dental work are at an increased risk. Overall, there is roughly a 2-3% risk for intra-operative dental trauma. If you have had extensive dental work, have bad dentition or are concerned about the risk of dental trauma, you may contact your local dentist to create a SOFT, UPPER custom tooth guard. In ALL patients, a standard toothguard is used during surgery.

**How long is the surgery? How long am I in the hospital?**

A: 2-2.5 hours in the operating room. Clients arrive 1-1.5 hours before the surgery and leave 2-3 hours afterwards. Plan on 6 hours start to finish.

**I have changed my mind and want my old voice back, can the procedure be reversed?**



A: No. Just so that I am clear: no.

## Post-operative:

### **Once I come off of voice rest, what will my voice sound like? Will it be masculine?**

A: Once you come off of post-operative voice rest your voice will sound much, MUCH worse before it gets better. Expect to be quite hoarse and rough sounding. This is due to 'surgical laryngitis' from the procedure and can last from a few weeks to months depending on how you heal. Do not worry, this is normal and expected. The surgical laryngitis usually resolves by 12 weeks however the final result could take 6 months when all healing has finished.

### **Do some clients get longer voice rest? Is there a benefit for longer voice rest? I use my voice a lot for my work. When can I resume my normal voice usage without harming my voice?**

A: All clients are placed on mandatory voice rest for two weeks. Additional voice rest is not required. Once you complete the voice rest, you may use your voice to an average, reasonable amount. Do not yell for 6 months. Do not whisper for 6 months. Speak normally but expect a raspy hoarse voice for the first 2-3 months.

### **Is there much post-operative pain?**

A: No. Most people state that the pain is tolerable and actually controlled well-enough with ibuprofen + Tylenol at the same time. Having a little more or a little less pain is not a sign of "something wrong" unless the pain is increasing day after day which could indicate an infection. All patients are placed on post operative antibiotics and steroids.

### **Can I use anti-scar cream or patches? What about the stitch removal?**

A: The neck incision is as small as possible, hidden in a skin crease and closed with plastic surgery technique. All but one suture is absorbable. The one (blue) stitch on the outside is removed on the seventh post-operative day either by myself (whenever possible) or by a medical person in your community. If your local medical professional has any questions regarding removal of the stitch, they are encouraged to call the office. Clients may not remove their own suture. Once the suture is removed, you may start to shower. Pat, do not rub, the incision dry after showering for the first month. If going out doors, use a >30 SPF sunscreen, or cover the incision with a scarf. Anti-scar creams/patches, Vitamin E oils, etcetera, may be used after the first month. Scars typically take 12 months to mature and heal. 12 months. Be patient.

### **Any other advice for the incision/scar?**

A: Yes! After the stitch is removed, take a towel and wet it with water as hot as you can comfortably stand. Hold it over the incision like a compress for 20 minutes, 3-times a day until one month. This helps it heal.

### **It is somewhat effortful to produce voice for the first few months even though it sounds great. Why?**

A: Your larynx, your "instrument" has been tuned to a much lower frequency. As such, you will now have to learn to "play" a cello, when you were used to playing a violin. The effortful feeling goes away after about 12 months.

### **How many times am I seen post-operatively? Can I get voice analysis of the final product?**

A: All clients are seen the day after surgery and cleared for travel. International clients are seen on the first and seventh post-operative days before being cleared for travel. All clients are recommended to return at 3 months for an examination and voice analysis. All post-operative care is included in the package, even if you have questions or concerns YEARS down the road. For those who cannot make it back at 3 months, I recommend recording the

"Rainbow Passage" (found on the internet) on a smartphone and e-mailing it for analysis. You will receive a reply comparing pre and post-operative vocal parameters, a copy of both pre and post recordings as well as the voice analysis in 4-6 weeks.

**When can I have other elective surgery without harming my throat? When are things permanent?**

A: >6 months. 3 months is minimum however you would need to be seen and examined in person before clearance could be granted. In cases where it has not healed, and clearance is not granted, you need to be prepared to delay the elective surgery. In cases of emergency surgery, you will proceed and we will deal with whatever happens afterwards if necessary. Always tell your anesthesiologist that you have had voice masculinization surgery and that they should use a "smaller" breathing tube and give steroids. If they have questions, they may always call the office to speak with Dr. Haben for specific recommendations.

**I am concerned about the stitches in my throat? Can they break? What about coughing?**

A; In general, patients should ONLY be concerned with factors that they have direct control over, such as compliance with the post-operative instructions and taking their medications, and NOT WORRY about factors which they have little to no control over such as talking in your sleep, slip-ups, single coughs or emergency surgery.

**I misplaced the post-operative instructions, where can I get a copy?**

A: Here. [INSERT PDF of post op masculinization instructions here.](#)

## Testimonials:

**Can I contact any of your prior patients? Can you send me more before/after examples?**

A: The Center does not use clients for advertising, nor provide client contact information, even with their permission. Many clients, however, are active on several transgender websites and blogs. Frequently, if you post a request to contact someone who has had a procedure at the Center, you will find a former client willing to speak with you. We take patient confidentiality and HIPPA very seriously.

American Board of  
**Otolaryngology** Certified  
Founding member of the American Board of Medical Specialties (ABMS)