



Voice Feminization

Dr. Haben's goals for voice feminization surgery are to produce results that:

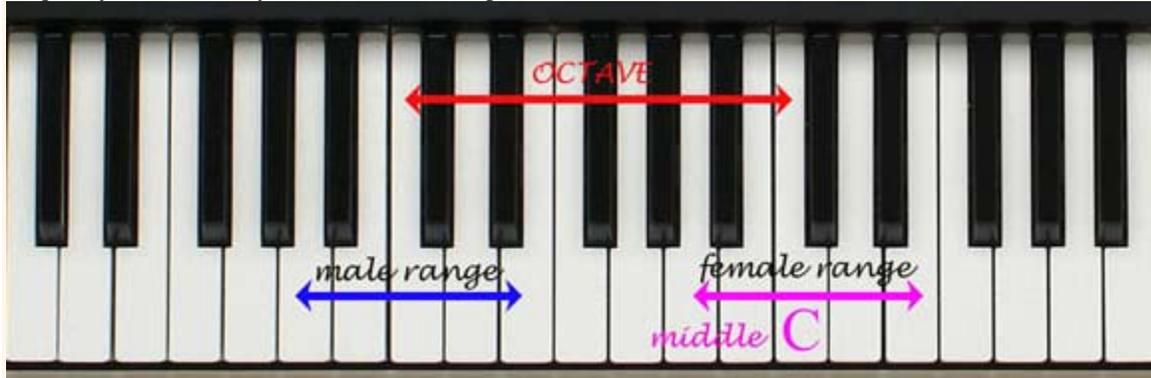
sound natural
effortless voice production ...
without "thinking about it", placing the voice or worrying about "slip-ups"
prevents clients from being misgendered

Feminization voice surgery can be performed on both pre and post GRS transgendered clients, biologic females and gender-neutral individuals.

Surgery to raise the pitch of the voice is relatively straight forward in most patients in experienced hands. Having the final voice perceived as being female, instead of just a higher pitched male voice, goes well beyond pitch-raising surgery. The first step is understanding the differences between "pitch" versus "voice" versus "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 male 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 would sound 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, can not be changed in feminization laryngoplasty. Even gender reassignment surgery and/or facial feminization cosmetic surgery can not change these resonators. Assessing these areas pre-operatively are vital to predicting how the voice might sound, and be perceived, afterwards.

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 is why the brain of someone listening to you will subconsciously perceive the voice as being female versus a high-pitched male voice. (Visual cues are also very important, but for the purposes of this discussion, visual cues are assumed absent, such as during telephone conversation). Prosody can not be changed with hormones or surgery. It must be learned, the way an actor would acquire the skills to take on another's personality of sorts. It requires a speech therapist who is very, very experienced in transgender voice changes. For most, years of practice are required to perfect female prosody

and have it sound natural and effortless. Perfecting female prosody is 50% of the final result. This is why a genetic female with a very low speaking voice is still perceived as female, even when in the male speaking fundamental frequency (such as many female television reporters).



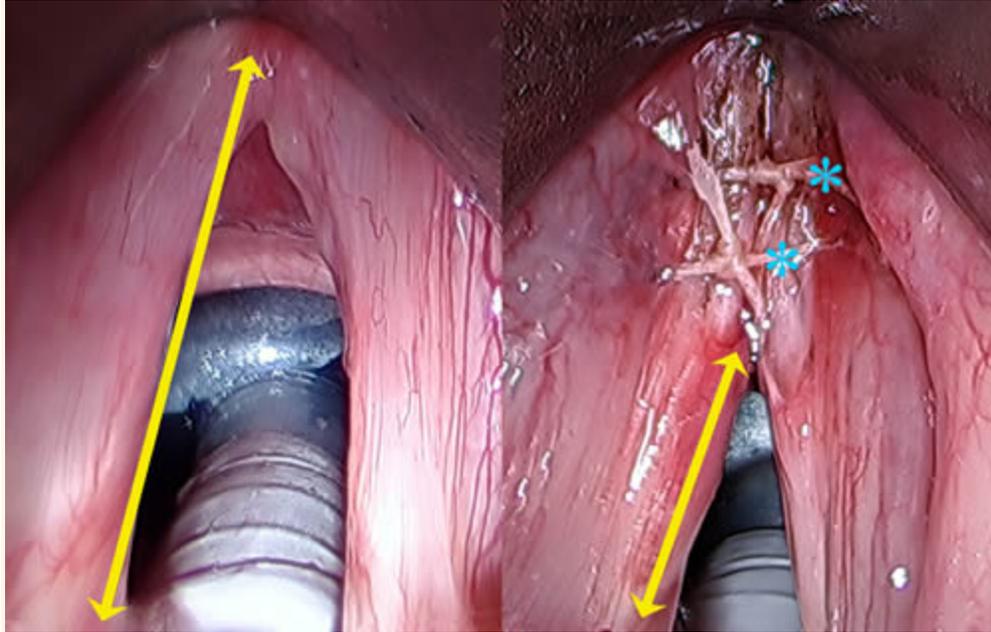
The average female speaking fundamental frequency is right around middle "C" on a piano (the normal range is within the pink arrows). The average male SFF is in a range about an octave lower than female, within the blue arrows in the picture. An octave is 12 notes on the piano (including the black keys!). **EXAMPLE**

Pitch can be raised 2/3 of an octave, or 8 notes, on average and in most cases. Some patients may get as little as 1/2 of an octave (6 notes) and others more than a full octave (12-14 notes). The goal, however, is to end up with a SFF in an appropriate part of the normal female range. There are many things that help predict the degree of expected pitch elevation, such as whether you ever smoked; have vocal fold polyps or scarring from voice abuse; limited range to begin with; age, or a shorter, fatter neck. In general, the lower your voice starts, the lower you will likely end up. A thorough pre-operative, in-person evaluation will help predict the degree the voice could be raised under ideal conditions. Please review the FAQs below.

If you look at a real piano, the higher notes have the shorter, thinner, tighter strings. This is what feminization laryngoplasty aims to achieve with your vocal cords. There are several surgical techniques available, alone or in combination, to achieve the purpose of shorter, tighter and thinner vocal cords aiming for a SFF within the normal female range. These include techniques that are endoscopic ('through-the-mouth') and open ('with an incision').

"Minimally-Invasive" Feminization Laryngoplasty Endoscopic Suture Glottoplasty Laser-Assisted Vocal Fold Webbing Anterior Commisure Retrodisplacement

These are different terms for shortening the vocal cords via an endoscopic, minimally-invasive, laser-assisted procedure, which can be done as a stand-alone surgery, or with a Crico-Thyroid Approximation ("CTA"), and/ or thyroid chondroplasty, a "triple" or a "double" as described below. The terms are descriptive and essentially synonymous in intent, which is to shorten the functional length of the vocal cords, thereby raising the pitch. The laser assists in controlling the degree of webbing, as well as the amount of anterior commisure retrodisplacement, and the final vibratory length of the vocal cords.



INTRA-OPERATIVE pre and post views of the minimally-invasive, laser-assisted glottoplasty. Notice how much shorter the functional length of the post-op vocal folds (yellow arrows) are on the right. The blue asterisks mark the two sutures. The sutures will dissolve in 2-3 months, however, the vocal fold shortening is considered permanent and irreversible.



CLINIC images before and 6 months after glottoplasty alone. Notice the controlled webbing where the yellow arrow is pointing, and that the sutures have dissolved. (Note: images in the clinic are flipped 180 degrees from those in the operating room.)

PROS of endoscopic feminization (glottoplasty) laryngoplasty alone?

No incision in the neck

Pitch is still raised 75 hz, 7-7-1/2 semitones, or just under 2/3 of an octave on average

Less time in the O.R., therefore less expensive

More dynamic range, important for those who sing

CONS of endoscopic feminization (glottoplasty) laryngoplasty alone?

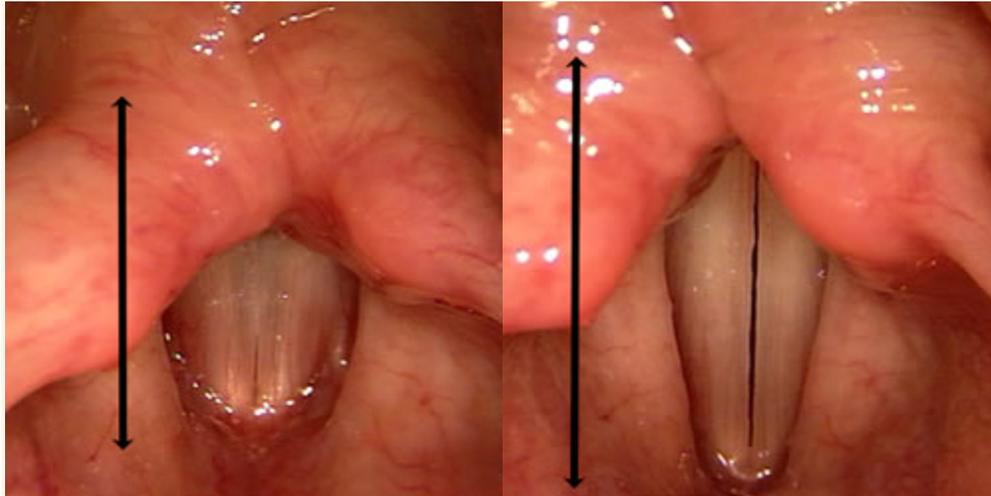
Less pitch elevation in former smokers, or those with low pre-operative SFF

Procedure shortens vocal cords, but can not stretch, tighten or thin (think rubber band)

More of the natural lower range is preserved, undesirable to some clients

Can not perform thyroid chondroplasty ("tracheal shave") endoscopically

"Open" Feminization Laryngoplasty Crico-Thyroid Approximation "CTA"



The vocal cords are stretched and thinned by making a small incision in a skin crease in your neck and tightening the cartilages that now allow you to go from a regular to a falsetto voice. A "CTA" mimics contraction of the "singer's muscles", the crico-thyroids. When contracted the cricothyroids raise the pitch the way you could now if you engage your falsetto or "mixed" voice. Through the same incision and at the same setting I can shave the Adam's Apple, a procedure termed thyroid chondroplasty (aka tracheal shave). If you have had prior facial feminization with a "tracheal shave", the tracheal shave would need to be re-done (see FAQ) if you have a CTA. The neck incision is about 2-3 inches long and is hidden as best as possible in a skin crease. Notice in the before and after pictures above how much thinner and more taut the vocal cords become. A CTA can be done with or without the thyroid chondroplasty, but is only rarely done alone without the endoscopic portion. Average pitch elevation with a CTA + endoscopic feminization is 80-85 hz , 8-8-1/2 semitones, or > 2/3 of an octave on average.

PROS of the CTA added to the endoscopic glottoplasty?

Recommended in former smokers, and/ or those with low pre-operative SFF

Raises pitch more effectively and higher than the endoscopic procedure alone

Stretches and thins the vocal cords, in addition to shortening their functional length

Better eliminates the lower baritone range

CONS of the CTA added to the endoscopic glottoplasty?

Speech is somewhat more effortful for the first few months

Incision takes 6 months to mature. Longer if a prior tracheal shave had been done

Takes longer in the O.R., therefore more expensive

Not recommended in those where the singing voice is very important, decreases lower range

CAN you do the minimally-invasive AND a tracheal shave without a CTA?

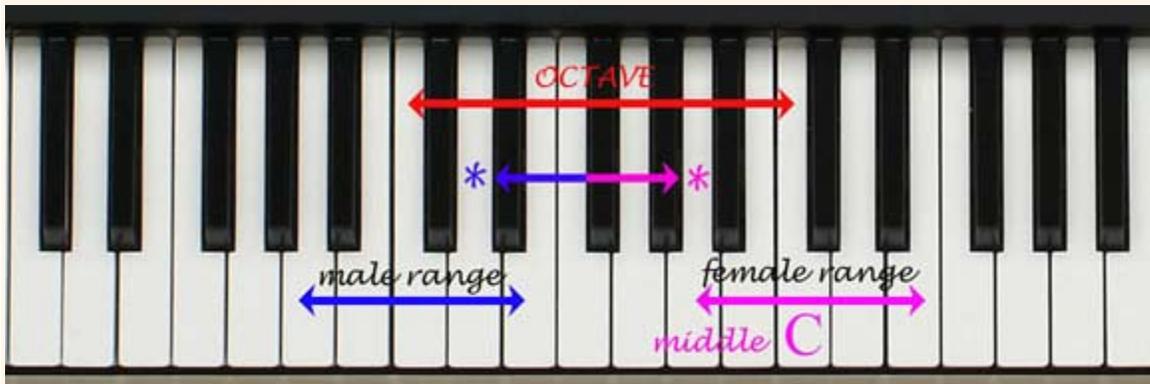
Yes! It is considered a "DOUBLE." The incision for the tracheal shave is hidden under the chin in this case instead of being placed lower in the neck as is required for the CTA. This option is frequently chosen by singers who do not want a CTA or those who do not want an incision lower in the neck. The time in the O.R. and therefore the associated costs are the same as the "triple."

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 have questions or concerns regarding which procedure(s) is/are best for you, 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).

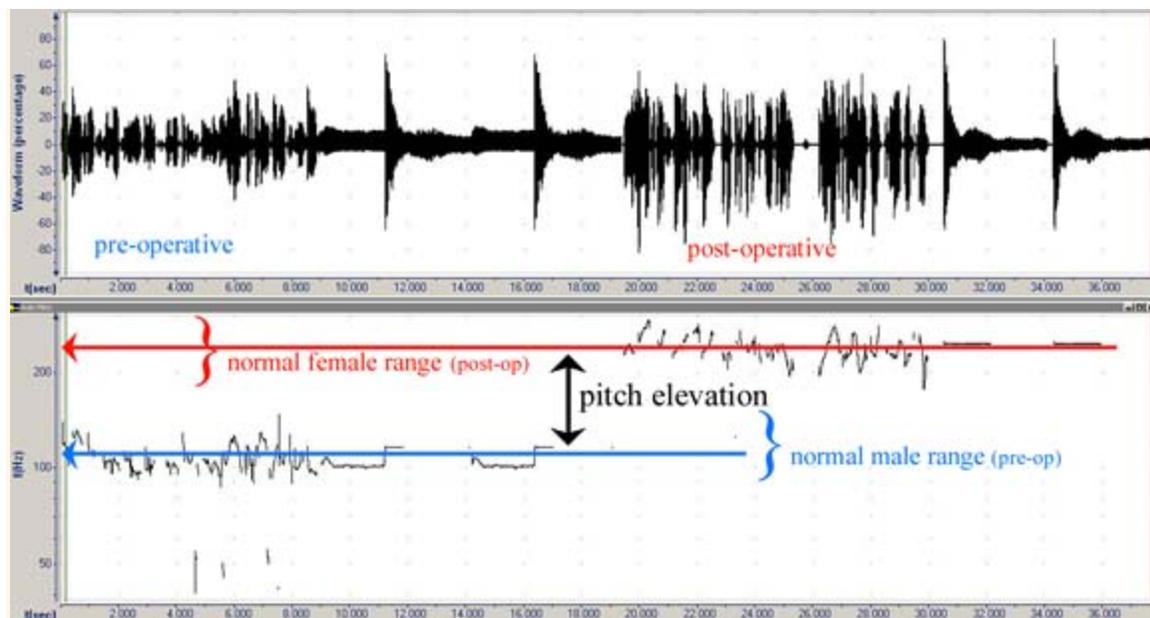
Examples

The following examples represent AVERAGE results in a TYPICAL client having undergone the "triple procedure" and what is achievable with the minimally-invasive glottoplasty alone (aka "single"). These examples aim to provide potential clients with realistic, achievable and reasonable expectations.



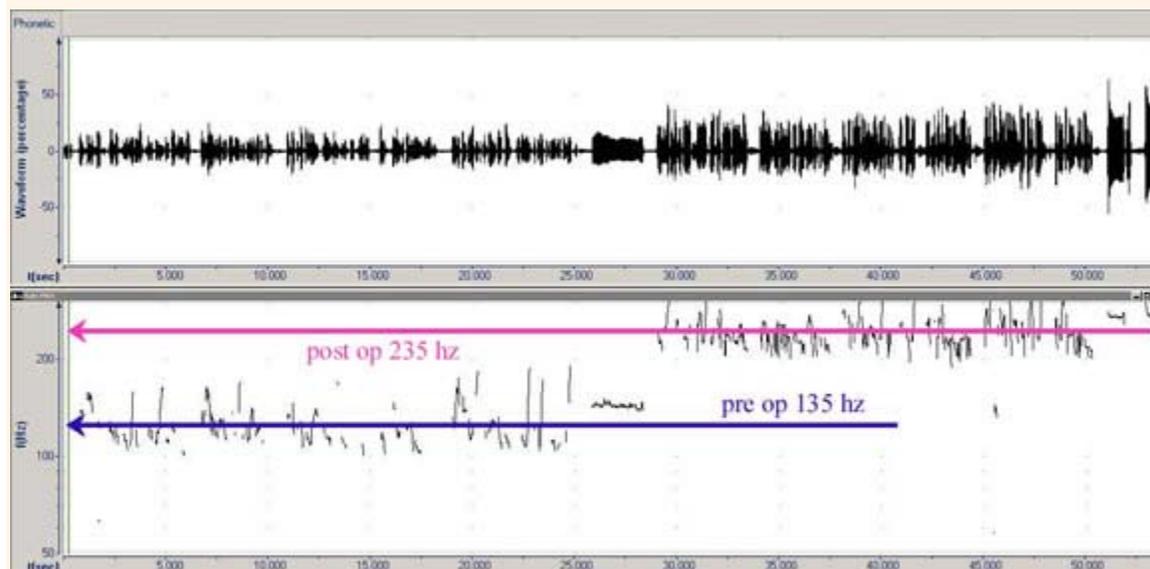
A typical example:

The patient's speaking fundamental frequency is centered on D in the male range * 3 months after feminization laryngoplasty, the pitch is centered at A in the female range * which is 2/3 of an octave higher, or 8 notes, which is average. **EXAMPLE**



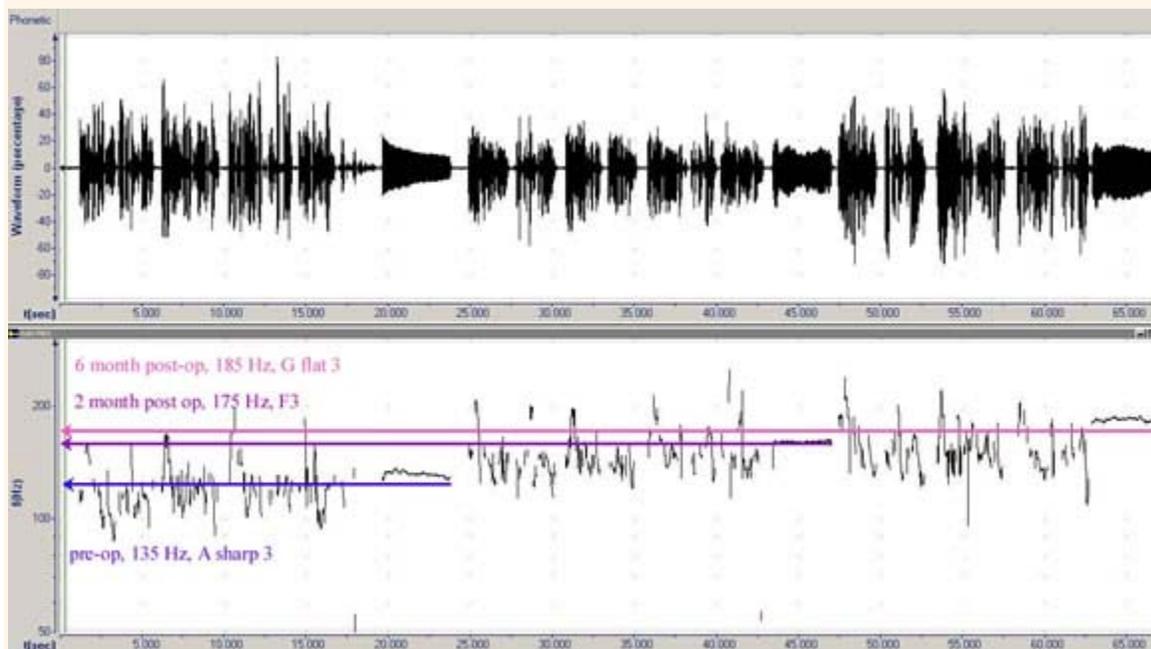
A second typical example:

This time using acoustic analysis above on a different patient, Pre-operatively the speaking voice is centered around 110 hz, or A2 on a piano, middle average for a biologic male. Post-operatively the voice is now nicely centered around 240 hz, or C4 "middle C" in the center of the female range, representing more than an octave of pitch elevation. The goal was not for maximal pitch elevation but for a final result that sounds natural and as close to or within the female range as would be suitable for one's body size and baseline anatomy. **EXAMPLE**



A typical example of minimally invasive feminization:

Acoustic analysis above in a patient with a "high average" male baseline speaking voice." Pre-operatively the speaking voice is centered around 135 hz, or about C#3 on a piano. Post-operatively the voice is now centered at 235 hz, representing almost a full octave of pitch elevation and well within the female range. **EXAMPLE**



Pre-op, 2 months and 6 months post-op minimally-invasive feminization.

Notice how the final result edges slightly higher once the healing has completed. In some clients, full healing takes up to 6 months. Be patient! **EXAMPLE**

Additional AVERAGE Pre and Post "TRIPLE" audio examples:	<u>30 year old pre-GRS</u>
	<u>26 year old post-GRS</u>
	<u>44 year old pre-GRS</u>
Additional AVERAGE Pre and Post "SINGLE" audio examples:	<u>38 year old post-GRS</u>
	<u>51 year old post-GRS</u>
	<u>64 year old post-GRS</u>

Do you have even more examples? Are there former patients that I can contact?

A: We have placed a number of AVERAGE results to give potential clients enough information to make a realistic decision. If you wish to contact a former client, we recommend posting a request on a forum such as SusansPlace.org, where many of our clients are active. NEW FOR 2016: We have begun a FaceBook page for potential, current and former clients to interact and blog about their experiences and questions. We hope that you will friend us and stay up-to-date with the latest information regarding feminization voice surgery.

<https://www.facebook.com/Feminization-Voice-Surgery-1509177442710841>

Cost:

All of the feminization procedures come packaged to include the cost of the surgery, pre-operative consultation, all post-operative visits, ALL hospital charges for outpatient surgery (see below regarding chaperones), all 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 and appropriate taxes. Airport transfers, clinic transfers, meals, entertainment, special testing or additional rooms are not included. The package for the "triple" or "double" is currently \$7,000. The package for the minimally-invasive glottoplasty alone ("single") is currently \$5,250. 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.

Refunds:

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

A: We understand emergencies occur and are happy to reschedule your case 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 been done. Refunds are issued exclusively by check regardless of the initial payment method and will be mailed within 30 days of the request.

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 while they are in the pre-anesthesia area. Your surgery will be postponed until the medical condition is evaluated/corrected and rescheduled for the first available date. There may be some additional hospital costs associated with your postponed surgery and 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 Tuesday 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.

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 is \$500 and will be applied towards the cost of a surgery package if you choose to proceed.

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 complementary voice analysis for everyone. Once a procedure is booked, Dr. Haben is happy to perform voice analysis of the "rainbow passage" (found on the internet) recorded on a smartphone and emailed, for clients too far away to practically travel for a consultation.

Can you decide which procedure is best for me? What if I can't decide?

A: There are many factors to take into consideration, however, Dr. Haben will guide you and not allow you to make a poor or unrealistic decision. If you are uncertain as to how to proceed and have already committed to feminization voice surgery, Dr. Haben recommends booking the "triple." When you come in for your consultation we can always change it to the minimally-invasive and refund the balance. It is easier from a scheduling standpoint to 'simplify' a procedure rather than arranging for something longer and requiring additional resources.

What if I have only the minimally-invasive procedure and then later want a CTA and/ or a tracheal shave?

A: There is a \$500 discount off the total package price offered to clients who choose or need a second procedure for any reason in the future.

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 laryngoplastic surgeries and thousands of voice surgeries. The different techniques involved in feminization voice surgery have been developed 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 in-patient 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 a 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 are available 4-6 weeks in advance.

Do you accept Medicare or private insurance for feminization? 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: Feminization laryngoplasty is an elective cosmetic procedure whether or not thyroid chondroplasty is performed. We do not accept Government or private insurance for the procedure, nor will submit any forms to the 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 is 31599 whether the "minimally-invasive" or "triple" is performed.

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

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

How will we communicate?

A: It is vitally important that we have an accurate e-mail, telephone number and current 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 can not "hold" a date without payment and strongly advise against booking travel until you receive confirmation of your surgery 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 for international airtravel if having the "triple" or "double" procedure. International clients having the minimally-invasive procedure are required to stay an additional 4 days. Clients from Alaska and Hawaii are considered "international" in this case due to the distance of airtravel. 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: the night before and the night of the procedure. The hospital can arrange additional nights/ rooms at the hospital's pre-arranged discounted rates of approximately \$160 per night at present.

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, anyone coming by air internationally or with connecting flights is strongly recommended to arrive MONDAY. Flight delays and cancellations are common in the North-East USA, especially during winter. Please plan accordingly.

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 can not guarantee transportation.

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.

Any other advice for foreign travellers?

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 the Adam's Apple shave 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, 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. 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 feminine 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 can not 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. An audio file of what *could* be achieved in an average client over 60 years old may be found above.

I am/was a smoker. Does this matter?

A: Overall, former smokers heal worse and start off with much lower pitched voices 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. Former smoking does not prevent successful feminization. Current and/ or post-operative smoking (or extensive second-hand smoke exposure) can negatively impact success.

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

A: Following feminization 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 come in 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 feminization voice surgery. The timing of feminization voice surgery relative to GRS is personal.

Do you perform feminization voice surgery on biologic females?

A: Yes. All of the information contained here is otherwise applicable.

Operation and Technique:

I have had a prior Adam's Apple/ Tracheal Shave ("thyroid chondroplasty"), can you take off more? Does this complicate the feminization procedure?

A: A prior thyroid chondroplasty does make the CTA procedure a bit more complicated because of the scar tissue that develops in everyone. A prior successful thyroid chondroplasty will generally need to be revised if a CTA is done because the "Adam's Apple" is tipped forward as part of the CTA. The thyroid chondroplasty will be revised to be as cosmetic as possible; however, we are sometimes limited by the anatomy and previous scarring. Reasonable post-operative expectations are carefully explained during the pre-operative consultation. Approximately 20% of our clients have had a prior thyroid chondroplasty, so this is not an unusual situation.

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

A: In general, a prior scar can not 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: Feminization does not give anyone a singing voice that did not exist before. Nor does it give additional upper range. Feminization raises the speaking pitch, without adding upper range. An external CTA will reduce overall range (on the bottom end). This occurs because the "singers muscles", the "crico-thyroid muscles, are permanently in a contracted position in a CTA. As such, singers, or those where lower dynamic range is very important, are recommended for the endoscopic glottoplasty alone.

How much can you raise the pitch?

A: The average is 8 semitones, or 2/3 of an octave or roughly 80 hertz for a combination of glottoplasty and CTA. Glottoplasty alone averages 7 semitones, or roughly 72 hertz of pitch elevation. The uppermost degree is limited by one's anatomy. Larger, stocky individuals tend to have less favorable anatomy than those more petite. Longer,

thinner necks are easier to operate than shorter, thicker ones. The same is true for the glottoplasty. Thinner higher-pitched male voices are easier to operate than lower, thick, scarred, smokers, low pitched vocal cords.

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, which 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: The endoscopic glottoplasty takes about an hour. The external CTA is an additional hour (without thyroid chondroplasty) or 1.5 hours (with thyroid chondroplasty) if performed. Clients arrive 1-1.5 hours before the surgery and leave 2-3 hours afterwards. Plan on 6 hours start to finish.

Post-operative:

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

A; Once you come off of post op voice rest your voice will sound much, MUCH worse before it gets better. You will likely sound like a truck driver who smokes and yelled all night long. 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.

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: Some clients are placed on mandatory voice rest for up to one month. This is a decision made during the pre-op consultation or just after the surgery and depends on multiple factors. Longer mandatory voice rest is not a bad thing, just sometimes necessary. One week of absolute post-operative voice rest is minimum. 4 weeks is maximum. The longer the voice is rested electively during the first month, the quicker it will heal. Do not rest it more than one month without specific instructions to do so from the Center. The voice is "healed" when it is essentially stable for two weeks. This is when it is safest to resume normal voice use. After the first month minor voice overuse could delay healing but will not affect the final outcome.

Is there much post-operative pain?

A: Although I give codeine-based liquid pain and cough medication post-operatively, most people state that the pain is tolerable and actually controlled well-enough with ibuprofen. 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 may indicate an infection. Patients having an incision will be placed on antibiotics. All patients are placed on 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, by myself whenever possible, or by a medical person in your community for those who can not stay in town. 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. Antiscar creams/ patches, Vitamin E oils, etcetera, may be used after the first month. Scars typically take 6-12 months to mature and heal. 6-12 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.

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 up to a much higher frequency. As such, you will now have to learn to "play" a flute, when you were used to playing a saxophone. The effortful feeling goes away after 3-12 months. It occurs less if CTA is not performed.

The Adam's Apple shave looks good, but now there is somewhat of a prominence lower down?

A: The CTA raises pitch by bringing together the two cartilages, the cricoid and thyroid, which stretch the vocal cords. This is how a singer gets into the falsetto voice. Unfortunately, both are brought together and tilt forward with a CTA, but only the thyroid notch ("Adam's Apple") can be shaved. "Tracheal Shave" is an unfortunate misnomer as NO PART of the trachea (OR cricoid) is or could be shaved or reduced.

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. For those who can not make it back at 3 months, I recommend recording the "Rainbow Passage" (provided in the post-operative instructions) on a smartphone and e-mailing it for analysis and a reply comparing pre and post-operative vocal parameters.

For endoscopic glottoplasty alone, is the post-operative recovery different?

A: There is less post operative discomfort, lifting / showering restrictions, and "downtime" when there is no neck incision. The voice rest, overall recovery and duration until final voice outcome is achieved are a little faster.

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

A: >6 months is ideal. This is the point when a glottoplasty and CTA are deemed permanent. 3 months is minimum, however, you would need to be seen and examined in person before clearance is granted. In cases where it has not healed and clearance is not granted, you need to be prepared to cancel 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 feminization surgery and that they should use a "smaller" breathing tube. If they have questions, they may always call the office to speak with Dr. Haben for specific recommendations.

What is granulation tissue? What does it mean for my healing?

A; Approximately 10% of all patients will develop some sort of what is called "granulation tissue" over the web. This is generally a reaction to the surgery and stitches in the throat. In almost all patients it will resolve without needing to do anything, however the occasional patient will need to have something done. Granulation tissue slows

down the healing process quite a bit, but does not harm the final results. Be patient, granulation tissue could take 6 months to go away. Sometimes the silent reflux medication, additional steroids or even ibuprofen is recommended.

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

A; There are many factors which could lead to premature breakage of the stitches possibly resulting in insufficient pitch elevation. These include severe coughing, excessive early voice overuse, non-compliance with post-operative instructions, silent reflux and smoking. Each of these factors are specifically addressed in the post-operative instructions. Some factors, such as patient healing, excessive post-operative vomiting and uncontrollable issues could lead to pre-mature breakage of the stitches. If the stitches break prematurely, the web may or may not form properly. The pitch may or may not be elevated sufficiently, and the surgery may need to be repeated to achieve the desired results. 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, such as talking in your sleep, slip-ups, single coughs or emergency surgery.

When is the tracheal shave and incision finally healed? Can I have scar revision?

A: The thyroid chondroplasty and incision are not matured for a full year (= final result). It is not recommended to consider any scar revision before a full year has elapsed.

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.

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 such as "Susan's Place." 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.

We have, however, begun a FaceBook page for potential, current and former clients to interact, contact and blog about their experiences. We hope that you will join, friend us and stay up-to-date with the latest information regarding feminization voice surgery.

<https://www.facebook.com/Feminization-Voice-Surgery-1509177442710841>

"Thank you very much for offering your services to our community. I love what you have done with my voice and you've made my life much less stressful! I have not been misgendered since my voice surgery! And I totally credit your work for that!"

"C." from Michigan, USA

"I really now sound like I feel inside and my neck is totally flat!"

"A" from Melbourne, Australia

"Merci Docteur Haben!!! I don't have to think about my voice anymore. It is natural. Merci encore!!!"

"W", from Paris, France

"You did an amazing operation when no one else would even have me as a patient. I can't thank you enough times!"

"S" from Hong Kong

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Founding member of the American Board of Medical Specialties (ABMS)