

What is a mix?

NATS Chat with Dr. Ingo Titze of The National Center for Voice and Speech (NCVS): - October 2, 2011

Tara Rising: Hi Dr. Titze, I am wondering if you have any typical approaches to different types of singers that you find are most effective?? For instance, opera versus pop... In terms of voice therapy, that is?

Ingo Titze: I would say in all cases it is important to find the "mixed voice" first, and to be firmly grounded in that

Heather Nelson: Could you please define the "mixed voice?" I've been reading lately that it's not possible to actually "mix" the registers in a purely physiological sense, but rather, it's a product of psychoacoustics.

Ingo Titze: Mixed Voice: has to do with vocal fold adduction, the bottom of the vocal fold is adducted half-way. It is not dominated by TA contraction, and also not dominated by CT contraction.

Ingo Titze: Mixed voice is best obtained when we practice with semi-occluded vocal tracts such as lip trills, tongue trills, humming, and using flow-resistant straws.

Heather Nelson: Is mixed voice limited to a particular frequency range, or can you achieve that on any pitch, as long as the folds aren't fully adducted?

Ingo Titze: Classical singer using mixed...virtually all classical singers use mixed voice or mixed register. In particular, in the range from E4 to C5, males as well as females Yes, mixed register can be achieved in virtually all pitches.

Ingo Titze: Mixed voice lies exactly between head and chest voice, and the feel should always be that you are half-way between chest voice and falsetto.

Craig Tompkins How much of what we hear as mixed voice is vocal fold dependent and how much is resonance based?

David Sabella-Mills: With recent research are we now considering mix to be a mixture of registration AND resonance, and not a mixture of purely registrative qualities?

Ingo Titze: Yes, there is always a chance that the balance is not maintained and that we drift more towards falsetto or more towards chest. Therein lies the importance in the technique, it must always maintain balance so that you get the feel that you can go in both directions.

Heather Nelson: In regards to David's question, is mixed voice a register all it's own?

David Sabella-Mills: And to further my question, can we consider that the VT reactance has a lot to do with acquiring a mix sound?

Ingo Titze: Mixed voice can be reinforced with vocal tract resonance and again the semi-occluded vocal tract techniques help to do that. They produce an inertance effect that helps the vocal folds in sustaining their vibration.

Ingo Titze: Is mixed voice a register on it's own?...that has been debated for many decades if not centuries. I like to think of it simply as the mix between the two primary laryngeal registers.

Ingo Titze: There will be a positive pressure in the vocal tract when you semi-occlude it at the lips. This net positive pressure helps to keep the vocal folds slightly separated so that there is not a strong collision between the vocal folds. That in and of itself is beneficial and allows one to use full lungs pressure and a full range of pitches without incurring any injury.

Ingo Titze: There are two effects from semi-occluded vocal tract techniques. The first effect is the steady back pressure throughout the entire oral and pharyngeal cavity. That pressure spreads the vocal folds apart to avoid excessive collision and keeps the amplitude of vibration small.

Ingo Titze: The second effect is an acoustic one, which depends on the inertance of the combined straw with the vocal tract. This inertance lowers the phonation threshold pressure and assists the vocal folds in their self-sustained vibration.

Ingo Titze: Yes, you're absolutely correct that in the super belt above C5, there will be narrowing in the pharynx and in the epilarynx tube so that the entire vocal tract assumes a trumpet shape and this will raise the first formant to an extreme value so that the second harmonic can remain reinforced up to these high pitches. thank you