

Who Believes What? Singers' Belief in Vocal Health Information and Misinformation

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A PLETHORA OF INFORMATION

AS THE READERSHIP OF THIS JOURNAL IS AWARE, singers come in all shapes, sizes, ages, levels of formal instruction, and preferred musical genre. Let's add two more variables: what singers *know* about the singing voice and how optimally to care for it. Although evidence-based recommendations for voice care are available, misconceptions about voice care likewise abound. In addition, many as yet untested but generally accepted practices of vocal health exist. Tips from this broad continuum of advice are passed along from singer to singer based on personal experience or what they've heard from other singers, voice teachers, or choral conductors. The advent of the internet has created an avenue of unprecedented information sharing; thus, a preponderance of information available to singers has not yet been vetted by scientific rigor or peer review. Even well educated singing teachers may not base their admonitions on anatomic-physiologic reality, and instead pass along anecdotal evidence and what "works best" for them. A recent article in this column described the perils of "teaching in a post-truth society."¹ This article reports on a survey of belief in vocal health practices that was distributed in 2013. Since then, the authors have continued their engagement in the field of vocal health, and can attest to the ongoing proliferation or plethora of information, but not to an improved aggregate of advice. In fact, misinformation from 2013 remains on the internet today. What is a voice teacher or vocologist to do in such an environment when it comes to vocal health? We hope that our continued thoughts on this topic, using the data from our study as a springboard, can help realize some direction in helping our students through this maze of information.

Many voice care practices cause no harm unless their use precludes a physician visit or other better practices, but they may not help, either. While the information source is often not known, it seems much of it has been passed down from generation to generation of singers. We don't really know how widespread voice care "myths" are, nor who actually believes them. In many instances, we also don't know actually what is true. Our perceptions on voice care practices have changed in the professional realm over time

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TABLE 1. Demographics of singers.

	N	Ave age	Age range	Amateur	Semiprofessional	Pro
Silent Generation	25	74	69–78	14	3	8
Baby Boomer	133	58	49–66	64	36	33
Generation X	71	31	33–48	23	23	25
Millennials	149	23	18–32	85	43	21
Total	378		18–78	186	105	87

as new empirical evidence provides clarification. And yet another caveat: Some voice care practices can be beneficial for one singer, but detrimental for another.

THE SURVEY

In order to have a better understanding of “who believes what,” we sought information from singers 18 years and older, self-categorized as Amateur, Semiprofessional, or Professional. Post-hoc, we categorized participants by their reported birth year into the generational categories of: Silent Generation (born from 1928 and 1945); Baby Boomers (born from 1946 to 1964); Generation X (born from 1965 to 1980); and Millennials (born from 1981 to 1995). At the time, members of Generation Z were not yet old enough to participate.

The task of study design was incorporated into a senior seminar, Care of the Professional Voice, offered in the Department of Communication Disorders at Truman State University. To create the survey items, students searched sources on vocal health practices regardless of whether or not they were peer reviewed. They also asked singers they knew personally about their vocal health practices in an effort to broaden the scope of vocal health beliefs. When these practices did not align with printed works, internet sources such as blogs and websites were searched to determine if an online resource could be located. Based on the literature search and pavement pounding quest, 50 statements were developed for the survey. The statements represented a range from absurd to generally supported by the professional voice community. (All the statements are given in Tables 2–5; note that the statements were not presented in the survey in the same order as they appear in the Tables.)

For the responses, we determined 6 possible options:

Yes, I’ve heard of this before and I agree.

Yes, I’ve heard of this before and I neither agree nor disagree.

Yes, I’ve heard of this before and I disagree.

No, I’ve not heard of this but I find it believable.

No, I’ve not heard of this but I find it somewhat believable.

No, I’ve not heard of this but I do not find it believable.

Following IRB approval we sent out the survey using Toluna Quicksurvey. A total of 378 singers responded. We provide a breakdown of generation and professional status in Table 1. Singers participated in a wide range of musical settings and genres.

The first thing we learned in our analysis of the data from our first ever survey attempt was that good survey questions are difficult to write and revised wording of some statements might have brought forth more clear-cut information. An example is the statement, “A good remedy for hoarseness or vocal fatigue is total voice rest, i.e., not speaking or singing.” The statement does not specify a duration for the voice rest, and some singers might interpret singing as “performing” and not cease vocalise or singing practice. There were also survey statements that are not literally true, but one could make a case for the “gist” of the information, like “Gargling lemon juice clears mucus off the vocal folds,” or “Alcohol is toxic to the larynx and therefore bad for the singing voice.” Suffice it to say, we don’t know if the singer participants interpreted our statements literally or figuratively. We derived the wording from actual sources, then finessed some statements to (hopefully) enhance clarity. Nevertheless, intended meaning and

TABLE 2. GAB (Generally Accepted Beliefs) statements. Values represent the percent of those singers who gave that response. Amateurs were statistically significantly different from Professionals; bold numbers indicate a 10 or more point spread between these two groups. Semiprofessionals were not statistically different from the other two groups.

Statements	Amateur			Semiprofessional			Professional		
	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis
Engaging in vocal cool-downs after a performance is beneficial to the singing voice.	25	52	23	38	41	21	40	35	26
Insufficient sleep negatively affects the singing voice.	78	19	3	91	8	2	99	1	0
Eating light meals of high energy, nutritious food improves the singing voice.	39	48	14	53	39	8	54	37	9
When getting sick, drinking green tea with honey soothes a sore throat.	76	23	2	58	38	5	55	38	7
Decongestants dry the throat, which negatively affects the singing voice.	46	42	13	51	38	12	71	24	5
Guaifenesin, the key ingredient in Mucinex, can be used without ill effects on the singing voice.	13	59	27	29	51	21	26	58	16
Antihistamines dry the throat, which negatively affects the singing voice.	39	48	14	48	45	8	70	23	7
Doing vocal warm-ups before performance is good for the singing voice.	96	4	0	99	1	0	99	1	0
Humidifiers hydrate the vocal folds.	52	41	7	56	38	6	59	30	12
Recreational drug use immediately before a performance negatively affects the singing voice.	68	25	7	76	22	2	76	23	1
Smoking cigarettes immediately before a performance negatively affects the singing voice.	89	9	2	83	16	1	87	11	2
When getting sick, drinking herbal tea soothes a sore throat.	78	21	1	71	27	3	68	28	5
Habitual recreational drug use negatively affects the singing voice.	75	21	4	77	23	0	83	15	2
Smoking cigarettes habitually negatively affects the singing voice.	98	4	2	93	5	2	93	7	0

A/B = Agree/Believe Uns = Unsure Dis = Disagree/Disbelieve

interpreted meaning will not always align. Sometimes our statements specified that a given practice affected “singing,” the “singing voice,” or the “vocal folds.” This intentionally imposed variety of terms may well have resulted in ambiguity for our singers as they determined/contemplated their responses. Something bad for vocal folds is likely bad for singing; however, the converse, that something bad for singing may be bad for vocal folds, is not necessarily true. Certainly, confusion exists regarding the effects of ingested substances on the vocal folds themselves. Two statements provide a case in point: “The liquid we swallow bathes the vocal folds,” and “Eating potato chips lubricates the vocal folds.” If agreed upon or

found believable, poor understanding of the anatomy of the vocal mechanism is revealed. In sum, altered wording of some statements may have given different results. But, even that realization gave us pause in considering what singers hear as advice, how they interpret what they hear, and what they then believe is viable to incorporate into their own approach to vocal health.

CATEGORIES OF SURVEY STATEMENTS

The following categories and category definitions are provided here with an example for each. One could argue that some statements could fit into more than one category, but for clarity of analysis we placed them

TABLE 3. PAB (Previously Accepted Belief) statements. Values represent the percent of that generation’s singers who gave that response. Millennials were significantly different from the Baby Boomers and from Generation X; bold numbers indicate a 10 or more point spread between these three groups. Millennials were not statistically different from the Silent Generation singers.

Statement	Silent Generation			Baby Boomers			Generation X			Millennials		
	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis
Drinking milk is bad for the singing voice because milk coats the throat.	50	35	15	39	35	27	35	32	32	62	30	8
Drinking 64 oz. of water daily promotes optimal singing quality.	39	46	15	56	35	8	68	27	6	79	18	3
Consuming milk before a vocal performance negatively affects the singing voice.	60	24	16	47	38	16	35	43	22	73	20	7
The consumption of dairy products increases mucus production.	62	35	4	55	25	19	54	35	11	64	26	9
Gargling lemon juice clears mucus off the vocal folds.	35	31	35	24	40	36	10	39	51	22	54	24
It is dangerous for singers to use chest voice.	8	12	81	5	18	77	11	24	65	8	32	59
Caffeine is dehydrating, which negatively affects the singing voice.	50	23	27	52	38	10	70	24	6	66	27	6
Birth control pills cause swelling in the vocal folds.	4	39	58	6	39	55	11	51	38	3	52	46
Alcohol is dehydrating, which negatively affects the singing voice.	73	19	8	54	36	10	75	21	4	71	24	5
A good remedy for hoarseness or vocal fatigue is total voice rest, i.e., not speaking or singing.	92	4	4	78	18	5	92	6	3	74	22	5
Eating before singing interferes with breath support.	46	35	19	36	41	23	38	34	28	39	37	24

A/B = Agree/Believe Uns = Unsure Dis = Disagree/Disbelieve

where we felt they fit best. Many of our thoughts on pedagogy related to these categories and the statements assigned therein.

- *Generally Accepted/Advocated Belief* (GAB, 14 questions)

Definition: These statements were gauged to be believed and advocated by medical professionals whether or not supported empirically.

Example: The statements, “When getting sick, drinking green tea with honey soothes a sore throat,” and “When getting sick, drinking herbal tea soothes a sore throat,” may not have empirical evidence as support, but plenty of anecdotal evidence that warm beverages may calm painful throat sensations, if only temporarily. Note, neither of these statements are specific to vocal folds or the singing voice. That level

of specificity would be harder to advocate. Others of the GAB statements are well verified in research and clinical practice.

- *Previously Accepted Belief* (PAB, 11 questions)

Definition: These statements were once held to be true, but newer knowledge refuted the earlier held beliefs; i.e., vestigial truths.

Example: Decades ago the hormone levels in birth control pills resulted in vocal fold edema, whereas current hormone levels are less likely to have this side effect.² Thus, the belief that birth control pills cause swelling on the vocal folds, a vestigial truth, could certainly be held true by many, especially those who are now older as they were actively singing when birth control pills were likely to have that effect.

TABLE 4. MLB (Misconception Likely Benign) statements. Values represent the percent of that generation’s singers who gave that response. Millennials were significantly different from the Silent Generation, the Baby Boomers, and from Generation X. Bold numbers indicate a 10 or more point spread between the Millennials and other three groups.

Statement	Silent Generation			Baby Boomers			Generation X			Millennials		
	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis
Consuming soda before a vocal performance negatively affects the singing voice.	19	46	35	30	39	30	45	32	23	70	23	7
Consuming alcohol before a vocal performance negatively affects the singing voice.	46	42	12	44	42	14	52	30	18	58	33	9
Consuming sugary substances thickens mucus in the throat.	38	42	19	40	33	27	42	41	17	61	35	4
Spicy foods inflame the throat, which negatively affects the singing voice.	15	62	23	17	43	39	13	48	39	28	54	18
Inhaling steam into the throat relaxes the vocal folds.	35	42	23	37	43	20	41	38	21	44	44	12
Carbonated drinks dry out the throat, which negatively affects the singing voice.	12	38	50	23	43	34	35	35	30	49	39	11
A woman’s menstrual cycle causes change in vocal quality.	31	27	42	32	32	35	54	31	15	35	41	24
Yoga improves the singing voice.	23	54	23	37	45	17	31	48	21	29	44	28
Drinking apple juice clears mucus in the throat.	8	50	42	6	49	45	3	35	62	10	52	38
The consumption of foods with natural beta blockers (such as bananas) allows singers to control nerves.	8	38	54	11	42	47	15	54	31	11	56	33
Dry foods, such as peanuts, popcorn, and crackers, absorb liquid in the throat and oral cavity, making it harder to sing.	35	46	19	31	40	29	23	45	32	37	50	13
Allergy pills cause swelling in the vocal folds.	12	38	50	9	45	45	13	51	37	8	56	36
Gargling warm salt water reduces irritation to improve the singing voice.	46	46	8	33	54	13	37	47	17	39	47	14
The neck must be kept warm during cold weather to protect the singing voice.	35	42	23	28	44	29	23	54	23	29	50	22

A/B = Agree/Believe Uns = Unsure Dis = Disagree/Disbelieve

- *Misconception, Likely Benign* (MLB, 14 questions)

Definition: These statements reflect practices that are unlikely to be of help, but are also unlikely to promote harm if followed. There are also statements that are true for some singers, but not necessarily all.

Example: The statement, “The neck must be kept warm during cold weather to protect the singing voice” has no empirical evidence, yet there are those who will wrap their necks in scarves when singing in a cold environment. Likewise, when singers feel they

may be coming down with a head cold, they may follow the same practice. We don’t know that it makes any difference, but it is not likely to cause a problem, and may provide a psychological benefit.

- *Misconception, Potentially Consequential* (MPC, 11 questions)

Definition: These statements, if believed, reflect misconceptions of anatomy and physiology that may or may not affect one’s ability to care optimally for the voice.

TABLE 5. MPC (Misconception Potentially Consequential) statements. Values represent the percent of that generation’s singers who gave that response. Millennials were significantly different from the Baby Boomers and from Generation X; bold numbers indicate a 10 or more point spread between these three groups. Millennials were not statistically different from the Silent Generation singers.

Statement	Silent Generation			Baby Boomers			Generation X			Millennials		
	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis	A/B	Uns	Dis
Alcohol is toxic to the larynx and therefore bad for the singing voice.	28	40	32	18	36	46	20	42	38	30	53	17
Drinking a teaspoon of vegetable/olive oil lubricates the vocal folds, which positively affects the singing voice.	8	15	77	5	27	68	8	32	59	12	45	42
Tapping on different parts of the body during a warm up allows those areas to resonate better during singing.	12	12	77	7	18	75	6	17	77	5	31	65
Drinking cold water undoes vocal warm-ups.	12	46	42	19	34	47	13	32	55	17	45	39
The liquid we swallow bathes the vocal folds.	39	35	27	29	34	37	20	23	57	30	36	34
Caffeine is toxic to the larynx and therefore bad for the singing voice.	15	31	54	8	34	58	13	35	52	19	46	35
Liquids should be room temperatures so that drinking them will not harm the vocal folds.	31	39	31	25	40	35	21	37	42	33	41	26
Whiskey is good for the throat and has a positive effect on the singing voice; other alcohols are bad.	4	12	85	2	15	83	10	8	82	1	19	80
Eating potato chips lubricates the vocal folds.	0	0	100	1	8	91	0	7	93	5	7	88
Long distance running negatively affects the singing voice.	4	15	81	2	27	71	3	27	70	7	24	69
Smoking cigarettes immediately before a performance relaxes the vocal folds.	8	12	81	2	12	86	4	11	85	4	7	90

A/B = Agree/Believe Uns = Unsure Dis = Disagree/Disbelieve

Examples: No evidence could be found to support the supposition that “cigarette smoke can *relax* the vocal folds.” Medical literature supports that cigarette smoking is associated with development of laryngeal cancer.³ Therefore, those who believe this statement may choose a practice that is ultimately detrimental.

DATA ANALYSIS

Statistical analyses were performed to determine if the various groups of singers (Generations or Performances Statuses) differed from one another on the four categories of statements.⁴ Responses were collapsed into three

statistical categories, regardless of whether or not the statements had been heard: Agreed/Believed, Unsure, and Disagreed/Disbelieved. Response data are presented in Tables 2–5. Each Table represents a statement category. Note that Table Two shows the differences between the Performance Statuses, and the others show differences between the Generations. It is important to realize for both our formal statistics and the ensuing discussion that we do not have balanced numbers in our groups (Table 1). There are many more singers in the Baby Boomers and Millennials categories, and more Amateur singers than Professional or Semiprofessional. Balanced group sizes may have revealed different findings.

THE ALARMING, AND NOT SO ALARMING FINDINGS

It was comforting to find that few singers believed the most ludicrous of the statements such as “Eating potato chips lubricates the vocal folds,” or “Whiskey is good for the throat, other alcohol is bad.” Most of the singers believed *Generally Accepted Belief* statements such as cigarettes being bad and warm-up being good. We encourage you to look through Tables 2–5 for some contrasting or surprising responses. We found it necessary to rein in our desire to conjecture the “why” of the response patterns, reminding ourselves frequently that the study was not designed to address many questions that came to us. We offer a similar caution. A good case in point is the responses to the warm-up and cool-down statements. Nearly everyone had heard “Doing vocal warm-ups before performance is good for the singing voice,” and believed it. By contrast, only 40% of singers had heard “Engaging in vocal cool-downs after a performance is beneficial to the singing voice.” Those who had heard were far more likely to believe it. Generation X and Millennial singers were more likely to have heard it than the two older generations. Professionals were twice as likely to have heard it as Amateurs, with Semi-professionals in the middle. Perhaps the percentage of singers who had heard of vocal cool-downs would be larger today than when the survey was sent out several years ago (2014), as more information is available on the benefits of vocal cool-down.⁵ It is also possible to speculate that this information came from largely trusted, reputable sources. However these are simply conjectures that are not answered by this study.

DIFFERENCE BY PERFORMANCE STATUS: AMATEURS VS. PROFESSIONALS

While the *Generally Accepted Belief* (GAB) statements were the only ones that revealed no difference between the Generations, they were also the only statements that were different between the Performance Statuses: statistically, Amateurs were different from Professionals (see Table 2). Overall, Amateurs seemed less likely to believe generally accepted good vocal health practices, or the effects of substances (good or bad) on singing. The biggest difference between the two was on the statements that antihistamines and decongestants dry the

throat (widely believed by Professionals and by the voice pathology community). Professionals may have been more likely to discover the veracity of that statement over their careers, having more experience caring for their voices in some systematic way. Similarly, Professionals overwhelmingly believed that insufficient sleep negatively affects the singing voice; amateurs much less so.

Another factor may be that the Amateur group had a higher percentage of choral singers, whose conductors, in some cases, may have had less background in voice care, or just less time to impart the information. Therefore they had less opportunity to learn the *Generally Accepted Beliefs*. Though we cannot be sure, it stands to reason that experience drives these responses more than the source of the information.

DIFFERENCE BY GENERATION: ARE MILLENNIALS REALLY DIFFERENT?

Statistically, Millennials differed from the other three generations on *Misconception Likely Benign* (MLB) statements (Table 4) and from Baby Boomers and Generation X only for *Previously Accepted Belief* (PAB) statements (Table 3), and *Misconception Potentially Consequential* (MPC) statements (Table 5).

For the MPC statements there was a trend for Millennials to be less likely to disbelieve things that they really should disbelieve; or at least more likely to be unsure. For example, they were less likely to disbelieve, and more likely to find somewhat believable, statements about: alcohol and coffee being toxic to the larynx; cold water undoing warm-ups; liquid bathing the vocal folds; liquids needing to be room temperature. Some of these statements may seem reasonable at first hearing, but actually represent a lack of understanding of the vocal mechanism, especially in the separation between the airway (larynx) and the GI tract (esophagus). The fact that Millennials did not seem to recognize statements that they should disbelieve may indicate their poorer understanding of the vocal mechanism, compared to the other generations. These respondents were aged 18–32 (average age was 23) at the time of the survey, and largely Amateur. Therefore, it may be reassuring that they were most willing to choose the “I don’t know” response.

Across the statement categories, Millennials overall seemed to be more unsure about certain things being bad

for singing (e.g., carbonation, spicy foods, dry foods), although they were also less likely to believe that Yoga is good for singing. In an interesting contrast, Millennials were much more likely to believe that consuming soda before a performance negatively affects performance, than that consuming alcohol before a performance negatively affects performance. All this could be interpreted as Millennials being less likely to think that certain things are bad for singing, or alternatively that they're unsure that any of these external factors actually affect the voice.

WHO ACTUALLY HEARD?

In assessing the nature of the difference in belief in some statements, it seems prudent to consider whether there is a difference in whether singers, especially Millennials, had actually heard the statements more or less than others. It would be easy to assume that the generation that grew up with the internet had heard more of these statements, especially the more shocking ones. In fact, though, for 23 of the 50 statements, Millennials had heard them similarly to the other generations (within 10 percentage points), and for 11 of the 50, had heard them less (in a few cases only slightly less). For only 6 of the 50 statements had Millennials heard them more. Overall, it was Generation X singers who had heard the statements slightly more than the other three (this group had a larger percentage of Professionals). Otherwise, despite some variability between statements, there was no particular pattern to who had heard the statements more.

IS HEARING BELIEVING ?

When responses were examined taking into account whether singers had or hadn't heard the statement before, it seemed apparent that for many statements, if singers had heard the statements, they were more likely to agree with it. A good example of this is the MPC statement, "Eating potato chips lubricates the vocal folds." The vast majority (326) of singers had not heard this and didn't find it believable. However, of the 35 singers who had heard it, 8 agreed with it and 12 neither agreed nor disagreed. The statement about consuming soda also falls into this category; the percentage of Millennials who had heard was higher, but the percentage who agreed was proportionately much higher.

Two statements dealt with temperature of liquids: "Liquids we drink need to be room temperature so that drinking them will not harm the vocal folds," and "Drinking cold water undoes vocal warm-ups." The first was far more commonly heard, and singers were much more likely to agree with it if they had heard it. Not only had fewer singers heard the second statement, they were far more likely to disbelieve it or choose the unsure response. Both of these "water temperature" statements suggest a lack of understanding of anatomy of the vocal mechanism (and the action of the respiratory mucosa in general), but the second statement is far less ubiquitous than the first. The advice to drink only room temperature water has been given in studios, rehearsal halls, and green rooms for many decades. This may be an example of "hearing is believing" because singers heard this statement from a trusted personal source, and therefore simply accepted it.

Another example is the statement that eating before singing interferes with breath support. A majority of singers had heard this, and either agreed with it or neither agreed nor disagreed. The singers who had not heard this were less likely to believe it. This is another piece of voice lore that has been around since long before the internet, and although there is research evidence refuting the claim,⁶ there may certainly be singers who feel a sense of discomfort in trying to breathe deeply after a big meal.⁷

On the other hand, most singers had heard "The neck must be kept warm in cold weather," but only 22% agreed with it. Twice as many singers had heard and didn't agree as singers who hadn't heard and did believe, so in this case, hearing something does not necessarily lead to believing it. Scrutiny of the response patterns shows that the "hearing is believing" trend is somewhat true for all generations, but that it is not absolutely or overwhelmingly true.

WHAT DRIVES THE DIFFERENCE BETWEEN MILLENNIALS AND OTHERS?

Although there are differences from statement to statement, it does not appear that Millennials had heard the MPC statements more than the other generations. They also did not actually *believe* the statements differently.

Rather, they were overall less likely to *disbelieve* statements, and more likely to choose the unsure response if they hadn't heard. This is especially true in how they differed from the Generation X singers, who had a slight edge in hearing most statements more, and believing them less. It might be possible to interpret this to mean that Millennial singers had a less robust understanding of the vocal mechanism, but their youth and relative inexperience must be taken into account. While it is possible to think they have less critical thinking skill in the area of voice care, they may simply be more openminded, or willing to choose the "I don't know" response. They could be more gullible, or more skeptical, or both. Millennials often have been vilified for their reliance on quick information from the internet, but this study does not necessarily support that. Millennials were statistically different in their responses, but the reason for that cannot be answered by data from this study.

It seems likely that belief in statements about voice care is related to how frequently heard the statement is, and the source of the statement (e.g., hearing once but first hand from a trusted source). In the case of the *Misconceptions Likely Benign* statements, many are probably old tales that have a grain of truth, or are true for some singers. As for *Previously Accepted Beliefs*, there is probably little harm in believing something that has been shown to be not entirely true. It is of more concern if singers believe a statement that cannot be true, such as "Drinking a teaspoon of vegetable/olive oil lubricates the vocal folds, which positively affects the singing voice," because this suggests a lack of understanding of the vocal mechanism that could eventually lead to unsound voice care practices. On the other hand, we must acknowledge that singers have sung successfully for thousands of years without knowing a thing about vocal anatomy and physiology.

THE SINGING TEACHER'S RESPONSIBILITY

What, then, is the role and responsibility of the singing teacher in imparting vocal health and lifestyle information? In a survey of classically trained singers, Petty found that female singers were highly likely to consult with their teachers about any vocal health problems, before consulting a voice care professional, while male

singers were more likely to seek a professional first.⁸ If teachers are often the first stop for voice care information, it behooves them to have a good understanding of factual information on voice care, and to differentiate between accepted fact and what works for them. Teachers are free to relay their own personal experiences and those of others, but that does not mean that those experiences will be true for anyone else. Our job as singing teachers is to persevere in pursuing the best information possible, and imparting it in the most objective manner possible. It is useful to assess where students are getting their voice information, and what they know about their own instrument, in order to prevent the development of poor information consuming practices.

How can we enable the flow of accurate and helpful information to all singers? The accreditation standards for the National Association of Schools of Music (NASM) includes required health or wellness education for music students, so vocal performance majors and minors, and music education students, should be exposed at least to some basic concepts of vocal health within an undergraduate music curriculum. But that is only a fraction of the singer population; the majority of singers are avocational, and have no prescribed way of gaining information about their instrument.⁹ NATS teachers can even help singers who do not formally study voice, by sharing sources of factual information, like Vocapedia.info and their own websites, to other voice professionals such as choral directors, theater directors, and singing coaches.

SURVEY RESULTS: THE BOTTOM LINE AND CAUTIONARY TALE

While examining the data for each statement offers rich fodder for conjecture, imagining the reasons behind the responses doesn't get us to the overall message that we must become judicious consumers of information ourselves, examine our beliefs and how we convey them to students, and do our best to provide an environment for easy access to solid factual information to singers of all stripes.

It seems that the blogosphere has morphed into a space in which anyone can be an expert. The amount of disinformation is staggering. The blog with the potato chip reference is still there, and continues to generate

discussion. Although vocal myths didn't start in the "post-truth" era, McCoy makes the case that there may be a greater tendency now to cling to misinformation even in the face of contradictory fact.¹⁰ Regarding voice care, if we are to advocate for evidence-based practice, we must become accepting of new evidence and be willing to change our dearly held beliefs and superstitions, especially recognizing that what is true for us isn't necessarily true for everyone. We should also consider whether nonfactual advice is *Likely Benign* or *Potentially Consequential*, so that as professionals we are careful to *do no harm*. Especially to the extent that hearing is believing, it is important that what our students hear is not "fake news."

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NOTES

1. Scott McCoy, "Teaching Singing in a Post-Truth Society," *Journal of Singing* 77, no. 2 (November/December 2020): 201–204.
2. Jennifer P. Rodney and Robert T. Sataloff, "The Effects of Hormonal Contraception on the Voice: History of Its Evolution in the Literature," *Journal of Voice* 30, no. 6 (November 2016): 726–730; Ofir Amir and Liat Kishon-Rabin, "Association Between Birth Control Pills and Voice Quality," *The Laryngoscope* 114 (June 2004): 1021–1026.
3. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm.
4. Key data were presented by Julia D. Edgar and Deirdre D. Michael, "Who Believes What? Singers' Belief in Vocal Health Information and Mis-Information," 43rd Annual Symposium: Care of the Professional Voice (Philadelphia, PA, 2014). Data and full results will be supplied to the interested reader.
5. Kari Ragan, "The Efficacy of Vocal Cool-down Exercises," *Journal of Singing* 74, no. 5 (May/June 2018): 521–526.
6. Julia D. Edgar, "The effects of eating on trained and untrained singers for select pulmonary and voice tasks," *Journal of Voice* 22, no. 6 (November 2008): 721–726.
7. Julia D. Edgar and Raymond Daniloff, "Effects of eating a meal on trained singers for a variety of pulmonary and voice

tasks," 30th Annual Symposium: Care of the Professional Voice (Philadelphia, PA, 2001).

8. Brian E. Petty, "Health Information-Seeking Behaviors Among Classically Trained Singers," *Journal of Voice* 26, no. 3 (May 2012): 330–335.
9. 73% of the singers in our survey had taken formal voice instruction, with 37% having more than 5 years, but we did not ask if they were currently studying. It is unknown who had heard any of the statements from a teacher, but the high percentage suggests the importance of teachers in imparting voice care information.
10. McCoy.

Julia D. Edgar, PhD is currently Associate Professor of Communication Disorders at Truman State University. After receiving her PhD from the University of Minnesota in 1994, she completed postdoctoral studies at the National Institutes of Health in the Voice and Speech Lab. Her areas of expertise include voice, respiration, and swallowing. She has a special interest in manifestation of aging in voice and swallowing as well as preservation of these functions throughout the lifespan. Merging her avocational love of singing with her professional interests, Dr. Edgar co-authored an article entitled, "The role of choral singing in speaking voice preservation of aging adults" and engaged in a series of studies examining the effects of eating on singing.

Deirdre D. ("D.D.") Michael has been a singer all her life, a singing teacher for over 40 years, and a speech language pathologist since 1991. She has a BA in music, MA in speech-language pathology, and PhD in communication disorders, specializing in voice science, both advanced degrees from the University of Minnesota. She is an Assistant Professor in the Department of Otolaryngology at the University of Minnesota's Medical School, and co-director of the department's Lions Voice Clinic. There she treats patients with a wide range of voice disorders, specializing in care for professional singers. She also co-directs the voice research and education programs. She is a member and former chair of the Voice Science Advisory Committee for NATS, and the first moderator for the Vocapedia website. Michael continues to teach both voice and piano, and performs in a variety of venues.

Through the cold aftermath of centuries,
Cecilia's music dances in the skies;
lend us a fragment of the immortal air,
that with your choiring angels we may share,
a word to light us thro' time-fettered night,
water of life, or rose of paradise,
so from the earth another song shall rise
to meet your own in heaven's long delight.

U. Vaughan Williams, "A Hymn for St. Cecilia," 3