

FROM THE EDITOR

People communicate with each other using various methods such as speech, writing, pictures, sign language, and body language. Among them, speech is the most effective and direct way in delivering our message. Good voice is vital in making our speech impressive, inspirational and persuasive.

What is good voice? Good voice is clear and sustaining. The pitch suits the speaker and is not off-key. To maintain your good voice, it is crucial to adopt a healthy lifestyle and avoid abusing or misusing it.

In this issue, the author of our feature article, “Voice Health Care for Children and Adolescents”, leads us through various ways of establishing good voice. Mr. Ho chi-tak, our audiologist, has worked in the Hospital Authority as a speech therapist. He is going to share with us the fruits of his ample experience in this article. From the basics of voicing to the ways of protecting good voice, Mr. Ho gives us the keys to success in future if you possess a voice full of power, appeal, inspiration and persuasiveness.



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Vocal Health Care for Children and Adolescents

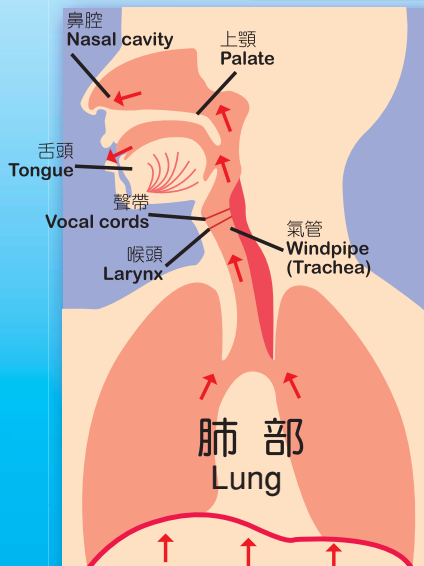


Mr. HO Chi Tak
Audiologist
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Clear and pleasant voices enable us to communicate effectively. It is essential for our social lives. Children and teenagers are susceptible to behavioural and biological risk factors that may cause voice problems. In this article, common voice problems among children and teenagers and their management will be discussed.



Mechanism of Voicing



Resonance and voice projection

Voicing

Breathing

While breathing out, air steam goes through the windpipe, throat and vocal cords. The vocal cords vibrate as the air steam passes through and sound is generated. The sound is shaped into speech by articulation organs in the mouth.



Breathing

Air steam exhaled by the lungs is the driven force of voice: stronger the air steam, louder the voice is. At rest, the length of time for breathing-out is just slightly greater than that for breathing-in. When we speak, breathing-out takes longer time.

Effective speech breathing requires a slow and deep inhalation through nose (to keep the air steam warm and moist). Voicing starts only when you are ready to exhale.



Voicing

Two vocal cords are located inside the thyroid cartilage (i.e. Adam's apple). During inhalation, the vocal cords separate to let air in. During voicing, laryngeal muscles contract and the vocal cords move close to each others. The vibration of vocal cords generates sound.

Laryngeal muscles control the pitch and loudness of voice by varying the tension in vocal cords and the aperture between them. Narrower the aperture, louder the voice is. Persistent loud voice causes fatigue and discomfort in throat. Effortful speech, cough and throat-clearing action would damage the vocal cords. Psychological stress would also lead to abnormal tension in laryngeal muscles. It affects the vibration in vocal cords and results in abnormal voice. Women

and children have short and thin vocal cords so their voices are high in pitch. Whereas male adults have long and thick vocal cords making their voices low in pitch.

A layer of protective mucus forms on the surface of vocal cords to prevent wear and tear. This mucus layer can be damaged by dehydration related to dry weather, smoking (both active and passive smoking) and intake of caffeine drinks (tea, coffee and cola).



Resonance and voice projection


Nasal and oral cavities are the resonance boxes for human voice. With the echoing effect, you can speak loud and clearly without excessive effort. Speaking with mouth widely open and proper articulation makes your speech clear.

That is why your voice becomes vague if you are suffering from nasal congestion.



Highly effective voice production


- ✓ relax muscles of head, neck and shoulders
- ✓ look forward with a leveled head
- ✓ inhale deeply and slowly
- ✓ speak when you are ready to exhale
- ✓ pause and breathe after every sentence
- ✓ speak with a relaxed voice that suits you
- ✓ open mouth widely
- ✓ articulate slowly and clearly
- ✓ short breaks in long speech



Inhale deeply and slowly.



Look forward!



Articulate slowly and clearly.

Speak with a relaxed voice.



Voice Problems



Symptoms for voice problem

Do you have the following symptoms?

- ★ harsh or hoarse voice
- ★ “out of breath” while speaking
- ★ “loss of voice” or “off-key” while speaking
- ★ significant difference in voice quality between morning and evening
- ★ fatigue or sore throat after speaking

If you have one or two of the above, you should pay more attention in caring your voice. If you have three or more, you should seek help from professionals, e.g. ear, nose and throat (ENT) doctors or speech therapists.

Common causes of voice problems include:

1. inappropriate behaviours or habits,
2. biological factors, and
3. puberty-related factor



Inappropriate behaviours or habits

- ✗ shouting or speaking forcefully
- ✗ inappropriate vocal play e.g. imitating machine gun or tank engine with voice
- ✗ effortful cough or habitual throat clearing
- ✗ speaking or singing loudly for a long period of time
- ✗ speaking too fast
- ✗ laughing or crying loudly
- ✗ raising or suppressing the pitch or volume of your voice deliberately
- ✗ failure to rest the voice while having an upper respiratory tract problem e.g. "flu" or sore throat
- ✗ smoking; drinking alcoholic or caffeine drinks; or eating hot and spicy food
- ✗ excessive psychological stress



Management: to establish good vocal habits

- ✓ Allocate time for quiet play activities (e.g. drawing, puzzles and etc) in daily routine to rest your voice
- ✓ Adopt appropriate vocal behaviours: use medium to slow speech rate, pause and breathe after each sentence, relax your neck muscles, use a pitch of voice that is comfortable for you, speak gently with your mouth widely open
- ✓ Lower the background noise at home/classroom e.g. lower the volume of TV set so everyone in the room can avoid speaking loudly
- ✓ Encourage use of non-verbal communication (e.g. eye-gaze and gesture) in noisy situation
- ✓ Have sufficient sleep
- ✓ Keep relaxed
- ✓ Drink plenty of water (ideally warm water) or fresh fruit juice (not sweetened)
- ✓ Avoid caffeine drinks
- ✓ Avoid staying in dry environment
- ✓ Rest your voice while suffering from respiratory problem
- ✓ Avoid throat-clearing, try dry-swallowing or drinking water
- ✓ Use a recording chart to document and modify targeted behaviors:

Recording Chart for Vocal Behaviours

(You can use stickers or ✓ to record the frequency of target behaviour)

Date: _____ to _____

Target behaviour	Mon	Tue	Wed	Thu	Fri	Sat	Sun
I shall speak gently instead of yell or shout this morning							
I shall speak gently and instead of yell or shout this afternoon							
Total number							

You can change the target behaviours according to your needs such as:

"I shall not clear my throat by coughing"

"I shall not make strange sounds while playing"



Biological Factors

- Inappropriate vocal behaviours lead to abnormal vibration of vocal cords. If abnormal vibration sustains over a long period of time, change in vocal cords such as inflammation, edema, nodule, polyp or cyst may arise. It prevents the vocal cords from achieving optimal aperture or causes irregularity on vocal cords, resulting in harsh and hoarse voice.
- Vocal cord paralysis, due to diseases, injuries or operations, causes severe voice problem
- Deformity of vocal cords secondary to cancer, injury or congenital conditions
- Reflux of acid from the stomach
- Upper respiratory tract inflammation related to infection or allergy
- Dry air, dust and smoking (active and passive) causing irritation of vocal cords

Management: seek help and modify environment

- ✓ Seek help from an ENT doctor to treat related diseases.
- ✓ Consult a speech therapist for establishing correct voicing habits.
- ✓ Rest voice and seek help from a doctor while having respiratory tract problem; use medicine according to doctors' or pharmacists' instructions.
- ✓ You may experience dry throat after using nasal decongestants, oral anti-inflammatory drugs or inhalers. Drink more water.
- ✓ Avoid eating two hours before sleep to prevent gastric reflux.
- ✓ Keep home clean.
- ✓ Do not smoke.
- ✓ In very dry days, using humidifier to keep air moist.
- ✓ Place a glass of water near the ventilation outlet while using air conditioner or heater.



Puberty-related factor

Boys in puberty show a drastic pattern of vocal and laryngeal development from age 14 to 18. The pitch of voice changes from 262 Hz (C4 key on the piano) to 131 Hz (C3 key on the piano) in a period of about 6 months. That is equivalent to a change from soprano to baritone. Temporary loss of voice and occasional pitch breaks (involuntary sudden change of pitch) may occur. It becomes stable after laryngeal development has completed.

Owing to maladjustment to their adult voice, some adult males maintain their childhood voice by using falsetto. It causes persistent stress to the vocal cords. They need to consult ENT doctors to rule out disease conditions; and then consult speech therapists for establishing appropriate voice.

Girls in puberty show a relatively steady pattern in vocal and laryngeal development. The pitch of voice changes from 262 Hz (C4 key on the piano) at age 9 to 220 Hz (A3 key on the piano) at age 14. That is equivalent to a change from soprano to alto in 5 years which is less drastic than that of boys. Voice problems of teenage girls are in general related to inappropriate vocal behaviours. During their menstrual periods, vocal cords of some females will be thickened due to hormonal changes. The pitch of the voice will be lowered for a few days and return to normal afterward.



Conclusion

In development of children and teenagers, the common causes of voice problems are inappropriate vocal habits, respiratory tract infections and puberty-related factors. Children should establish good vocal habits.

Teachers and parents may set good examples by adopting appropriate vocal habits; identify and modify factors that may affect their children's voice; and seek help promptly when problems arise.

Everyone would like to have a sweet and beautiful voice which helps expressing oneself and catching others' attention. The essential way to keep a clear and pleasant voice is to protect it through establishing good habits. In this issue, students share their opinions on the topic: "To protect our voice, I will.....". Let's share their views:

To protect our voice, I will.....

I eat healthy food, take less oily food and drink 8 glasses of water everyday.

I will sing softly and not raise my pitch too high.

Do not smoke or drink. Have adequate rest and sleep.

I will speak gently, and not yell or shout.

Avoid speaking loudly in noisy environment.

We should protect our vocal cords as well as other parts of our body. Prevention is always better than cure.

Answer: B

Clear and pleasant voice plays an important role in communication. Hence we have to protect our sound-generating organ - vocal cords. In case of minor problems, we have to take rest, avoid talking too much and drink plenty of water. If the condition persists for a few days, we should seek professional advice.



Friends of Health Box,

Hi, I am a fifteen-year-old boy. I find my voice become rough and hoarse, not as clear as it was. I understand that I am in puberty and so change in voice is normal. However, I could hardly stand my "terrible" voice. I hope that you can help me.

Chun-wai

Dear Chun-wai,

Thank you very much for writing to us.

We are pleased to find that you are a health-conscious boy as you are concerned about your voice problem.

You said you were a boy of fifteen and your voice became unfavourable recently. You knew that you were in puberty and change in voice was normal in this stage. Nevertheless, you felt upset as your voice was rough and hoarse.

Boys in puberty have drastic vocal and laryngeal development that makes their pitch low and unstable during that period. It becomes stable after puberty. However, inappropriate vocal habits, laryngitis and upper respiratory tract infection would also cause hoarseness.

You may consult your family doctor about your health status. Besides, you should not maintain your childhood voice by using falsetto and raising the pitch. It would stress your vocal cords and make your voice hoarser in the long run. When speaking, use a pitch that makes you feel comfortable. Speak in an appropriate volume with medium to slow speed. Relax head and neck muscles, pause and breathe at intervals and articulate gently with your mouth widely open.

Puberty brings many psychological and physical changes. Try to be positive when facing these changes. You may be proud of having a voice of low-pitch, full of power and determination.

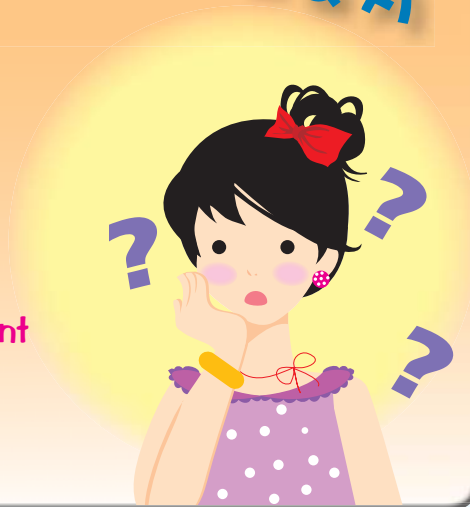
Your friends
Health Box

Interesting Knowledge Q & A

Which is not the cause of voice problem?

- A Talking too fast
- B Too much exercise
- C Talking too much
- D Always speaking in a noisy environment

(The answer can be found in the magazine)



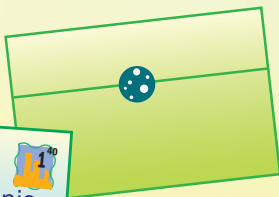
Health Tips

Protection of vocal cord : Iced cold drinks are hazardous to voice. Your throat will get congested if you have spoken for a long time. Cold liquids stimulate your throat adversely, resulting in hoarseness or loss of voice.



For enquiries of student's health problem,
please write to "Health Box"

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99 Kai Tin Road,
Kwun Tong,
Kowloon



Please write your
name & address,
contact tel. no. in
the letter.

