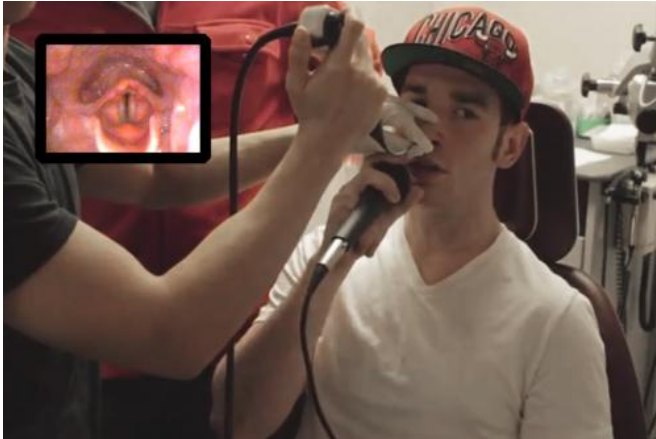


Beatboxing poses little risk of injury to voice

23 December 2013



A laryngoscope images what the vocal apparatus is doing as a beatboxer performs. Credit: H. Steven Sims

You might think that beatboxing, with its harsh, high-energy percussive sounds, would be harder on the voice than the sweet song of a soprano. But according to new research by voice expert Dr. H. Steven Sims of the University of Illinois Hospital & Health Sciences System, beatboxing may actually be gentler on the injury-prone vocal cords. His findings were published Dec. 23 online in the *Journal of Voice*.

"While there are lots of data on how the [voice](#) is used and can be injured in singers, little is known about the structures involved in beatboxing and if it poses a risk of injury to the vocal tract," said Sims, UIC associate professor of otolaryngology and director of the Chicago Institute for Voice Care at UI Health.

Beatboxing, which first became popular in the 1980s, is a type of vocal percussion in which performers imitate drum sounds with the voice, often accompanied by rapping or singing. The number of amateur performers taking part in national and international competitions is

increasing.

Sims imaged the vocal tracts of four male beatbox artists using a flexible fiber optic endoscope threaded through the nose and positioned just above the vocal apparatus. Another camera recorded the artists as they performed various isolated and combination beatbox sounds. Side by side, the videos show which vocal structures are engaged as the artists riff.

Sims found that beatboxers use the whole vocal tract to produce a range of sounds, spreading the energy among several structures and minimizing wear on any single part. They also tended to keep the glottis – the space between the vocal cords – open.

"Keeping the glottis open means that beatboxing may actually be protective of the vocal folds," Sims said. The beatboxers also employed the pharyngeal muscles to elongate the vocal tract to produce higher pitch sounds, Sims said, which takes some stress off the vocal cords.

"Singers rely almost exclusively on the vocal cords themselves to produce their sounds," Sims said. "So all the energy involved with singing is concentrated on these structures, which can develop scar tissue with overuse." Sims says that some of the techniques beatboxers use could help singers relieve stress on their [vocal cords](#). For instance, using muscles to elongate the [vocal tract](#), he said, could help singers "get themselves a little closer to that high note, before engaging the vocal folds."

The technique could be useful for Broadway singers who have up to eight shows a week and need to compete in sound volume with an orchestra. Sims hopes to follow up this research by studying female beatboxers.

"Women use their voices differently, in part

because their larynxes are smaller and are shaped differently than men's. So the results could be very interesting."

Provided by University of Illinois at Chicago

APA citation: Beatboxing poses little risk of injury to voice (2013, December 23) retrieved 18 September 2020 from <https://medicalxpress.com/news/2013-12-beatboxing-poses-injury-voice.html>

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