

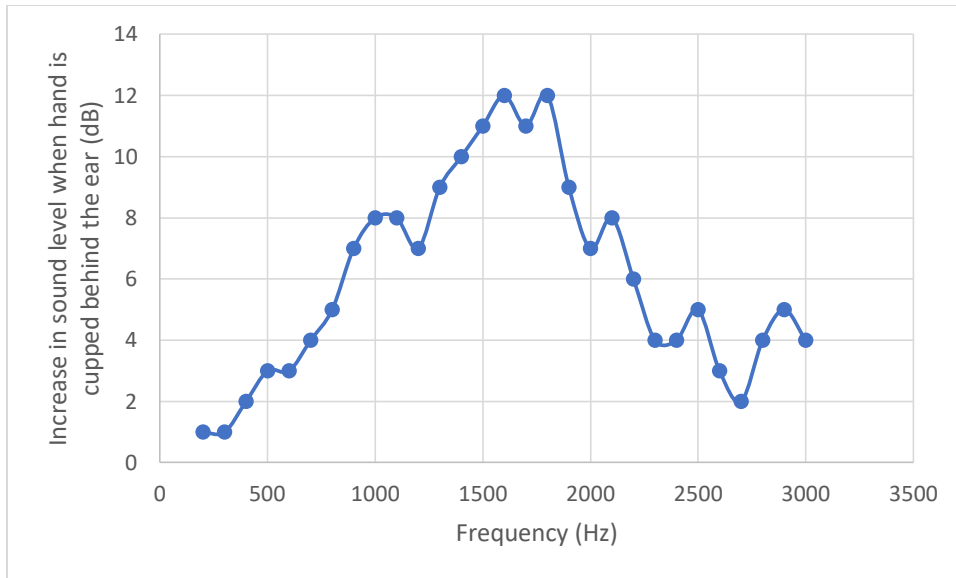
## My favorite Frequency: Back to Basics

I am sure that everyone has their favorite frequency. Many of my colleagues may favor 500 Hz, and others 4000 Hz. However, while these are important numbers, nothing comes even close to 1500 Hz.

Pop singers have been enhancing 1500 Hz in their vocals for more than a decade. In videos and live performances, it is now common-place for singers to cup their hands around the microphone as if they were kissing it. This has several effects, the main one being a 6-8 dB enhancement of sound energy around 1500 Hz. This not only looks good, but more importantly, imparts a sense of warmth to the amplified sound. Of course, the sound engineer could have just increased the gain in the 1500 Hz region but that wouldn't have looked as good on camera. More on this performance feature can be found at <https://www.dpamicrophones.com/mic-university/proper-hand-placement-on-a-vocal-mic>



The improvement in speech intelligibility by enhancing the 1500 Hz region has been known for years and is the main effect when someone cups their hand around their ear to hear better, especially in noisy social environments. This ear-cupping serves to increase the 1500 Hz energy by up to 12 dB.



Adapted from: Barr-Hamilton RM The cupped hand as an aid to hearing. *British Journal of Audiology*, 1983;17(1):27-30. doi:10.3109/03005368309081479.

And Keith Richards of the Rolling Stones, in his autobiography (Bochris, 1992), has something to say about this as well. During the 1960s and 1970s, the only tape cassette that the Rolling Stones would allow their music to be published on was the AGFA 467 tape. This tape had the interesting property that the tape media itself had a bump of greatest sensitivity in the mid-range around 1500 Hz by about 4-6 dB. Mr. Richards and the Rolling Stones felt that this provided the listener with the warmest and best quality sound. This was in contrast to the other commercially available cassette tapes of the era- Ampex 456 cassette with a slight low frequency enhancement and the Scotch 250 cassette with an enhanced high frequency boost. There is something warm sounding with a slight mid-range (1500 Hz) sound enhancement.

And finally, and this is an area for further research, for unexplained reasons, once the targets for a hearing aid fitting have been met, especially for audiometric configurations with good acuity below 1000 Hz, an increase in gain and output in the 1500 Hz region will add a sense of “warmth” to the hearing aid fitting especially for music programs.

#### References:

1. <https://www.dpamicrophones.com/mic-university/proper-hand-placement-on-a-vocal-mic>
2. Barr-Hamilton RM The cupped hand as an aid to hearing. *Br J Audiol*. 1983;17(1):27-30. doi:10.3109/03005368309081479
3. Victor Bochris. Keith Richards: The Biography, Da Capo Press, 2003, ISBN 0306812789.