

How noise pollution is affecting our health

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Noise-wise, India is one of the most polluted countries in the world. The data on noise pollution is scarce, but whatever little exists for [India shows that in most cities the noise reaches dangerous levels.](#)

Sound levels or noise levels are described in decibels (dB) with a logarithmic increasing scale and they double up with every 10 dB increase. Thus, the noise loudness level at 40 dB is twice as that at 30 dB.

Sound level of normal human conversation is between 40-50 dB and that of rock or loud music concert is on an average 140 dB. Thus, the rock music is approximately 500 times louder than the human conversation!

Recent data shows that some of the [Indian cities have noise levels greater than 75 dB](#) and in the peak traffic jam the deafening sound of horns blowing can reach 100-120 dB! Poor traffic sense, lax patrolling by police and bad roads exacerbate the noise pollution further. Medical data also shows that around [6-7% of India's population is deaf](#) though the actual numbers maybe much higher since most people never get tested for deafness.

Effect on health

Scientists have shown that all [sound levels greater than 85 dB are dangerous to human health.](#) In the long run they [damage hearing](#) and increase the level of stress. Large scale studies all over the world have shown that increased sound levels cause elevated blood pressure, loss of sleep, increased heart rate, cardiovascular constriction and changes in brain chemistry.

I feel the increase of anger and aggression in the city population is probably due to stress caused by noise pollution. This is further attested by medical studies done all over the world

where they have shown that deafness (even partial) in early life (teen years) leads to aggressive behavior and dementia later in life.

We hear sound through our ears where the pressure waves (sound) are converted into electrical signals and these signals are processed in the auditory centers of the brain. However, when the sound is loud enough it also has the ability to pass through the human skull - the thinnest among all animals, and reach the brain directly.

Various scientific studies worldwide have shown [the effect of mechanical forces on the working of brain](#). Under various mechanical stresses brain chemistry gets altered, thus affecting neuron communications and general functioning of the brain. Loud noise vibrations passing through the skull can therefore easily affect the brain - the softest tissue in human body. In some ways, the effect of very loud sound may be similar to head trauma injury.

Nature has evolved so as to take into account all the forces impinging on a body and I am sure that this pressure wave passing through the skull affects the brain directly. Medical studies have also shown that with partial deafness, brain starts using its other parts to compensate for this loss of input. This reduces the working memory for processing higher thought functions like cognition and analytical abilities leading to dementia and other brain disorders.

Music-which is a sound, affects humans profoundly. [Great music lifts the mood, is a balm to the soul](#) and can have profound effect on the wellbeing of humans in the long run. We still are not sure how music affects the whole brain since the auditory centers occupy only a small portion of brain. However sound vibrations creating mechanical stresses in the brain may provide an answer.

Similarly, “ugly and loud” sound may affect the whole brain and in the long run may have profound detrimental effects on human health. Even music, which may be soothing at low volumes, becomes cacophonous when played loudly.

Loud music has the [same detrimental effect on nerves as multiple sclerosis](#). It destroys the insulation of nerve cells which go from ear to the brain. It is not necessary that only loud

music heard in the open-air affects our health; even headphones with loud music has the same effect.

I feel the stress, foul mood and general aggressiveness comes from continuously being exposed to loud music. The young population which is constantly chatting or hearing music via headphones is very susceptible to this phenomenon.

Another way by which sound pollution affects our health is by creating sleep deprivation. Because of sound pollution at night, we do not get deep sleep. Studies world over have shown that [without deep sleep the detoxification of brain does not take place](#); thereby creating long term stresses which affects all aspects of mental and physical health.

Studies have also shown that not only human but also [animal health has been adversely affected by sound pollution](#). The beaching of whales and dolphins has been linked to Sonar experiments during various military exercises in oceans around the world. Similarly, biologists have found urban noise pollution affects adversely the communication signals of songbirds.

What can be done?

The most important thing in fighting noise pollution is getting good data on it. Today there are innumerable sound-meter apps which can be downloaded on smart phones. This can make every person a mobile sound meter who can measure sound levels at any place.

Thus, wherever we go and find the noise levels loud enough we should record them on our smart phones and upload them to a suitable centralized site. This can very rapidly help create a sound- pollution map of the country.

Based upon this map good noise abatement legislation can be formulated with very strict laws to limit the sound levels. The Indian judicial system takes ages to bring to justice cases and thus a much faster mechanism needs to be developed to curb the noise pollution. Maybe heavy fines on the spot will deter noise polluters. I am sure other effective methods can be devised to curb this pollution once all of us become aware of this nuisance.

Last year we celebrated our 72nd Independence Day. However, I feel the true independence will be when we get freedom from noise pollution. Then only will we get on the path of emotionally happy and sustainable living in India.

Suggested reading

1. Times of India, “Mumbai noisiest city, Delhi at number 4; Central Pollution Board”, 26 April 2016. <http://timesofindia.indiatimes.com/india/Mumbai-noisiest-city-Delhi-at-number-4-Central-Pollution-Control-Board/articleshow/51985961.cms>
2. Ron Chepesuik, “Decibel Hell : The Effects of living in a Noisy World”. Environmental Health Perspectives, Vol. 114, No. 1, January 2005. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1253729/>
3. World Health Organization estimates of deafness in the world. http://www.who.int/pbd/deafness/WHO_GE_HL.pdf
4. S. Garg, et.al., “Deafness : Burden, Prevention and Control in India”, Natl. Med. J. India, 2009, March-April; 22 (2) : 79-81. <http://www.ncbi.nlm.nih.gov/pubmed/19852345>
5. W. J. Tyler, “The Mechanobiology of Brain Function”, Nature Reviews – Neuroscience, Vol. 13, December 2012, 867-878. <http://www.ncbi.nlm.nih.gov/pubmed/23165263>
6. Anil K. Rajvanshi, “Music, Meditation and Happiness”, Editorial Article in Times of India, 10 April 2002. <http://www.nariphaltan.org/music.htm>
7. Anil K. Rajvanshi, “Good sleep is essential for your mind and body”, The Quint, 8 April 2012. <https://www.thequint.com/health-fitness/2016/04/08/good-sleep-is-essential-for-your-mind-and-body-heres-why>
8. Loud Music Damages Nerves; <http://www.hear-it.org/loud-music-damages-nerves-brain> , 22 April 2014.
9. Bart Kosko, “Noise”, Book Published by Viking, 2006; ISBN: 0-670-03495-9. <https://www.amazon.com/Noise-Bart-Kosko/dp/0670034959>
10. Candy Sagon, “Hearing Loss May Speed up Dementia”. January 2013. <https://blog.aarp.org/healthy-living/hearing-loss-may-speed-up-dementia>
11. Ohio State University, “Subtle hearing loss while young changes brain function”. May 2018. <https://www.sciencedaily.com/releases/2018/05/180522123246.htm>