

## MUSICAL HALLUCINATIONS

Some forty years ago one of my patients had an unusual complaint. He was a healthy middle-aged businessman whose work often required him to fly to Europe. In order to combat jet-lag, he habitually swallowed a single pill of Dalmane (flurazepam) — then a commonly prescribed sedative/hypnotic. But whenever he did, he'd imagine hearing pleasant folksongs that he remembered from his childhood in Sicily. The trouble was that these could persist for hours and were extremely distracting.

Because I was unable to account for this phenomenon, I wrote to the famous neurologist Oliver Saks who graciously replied that transient visual or aural hallucinations are not uncommon in people taking various medications. Sad to say, I didn't save Dr. Saks' handwritten letter, but he elaborated in his book *MUSICOPHILIA Tales of Music and the Brain* (2007) in which he explained how catchy tunes can subject us to hours of mental replay and how a surprising number of people acquire nonstop musical hallucinations that assault them night and day. In my patient, presumably some drug-related mechanism had released long-suppressed memories and the problem was resolved by stopping the pill.

In a footnote in his book, Saks referenced a 1983 *New York Times* article written by Donal Henaman, *Did Shostakovich Have A Secret?* It speculated that the famous Russian composer may have carried a piece of German shrapnel in his brain for the last 34 years of his life and each time he turned his head in a certain direction, his mind would fill with melodies — different each time — which he made use of when composing. Moving his head back and the music would immediately stop. Although skeptics doubted this narrative, Shostakovich allegedly relied on this trick and was reluctant to have the shrapnel removed. (<https://www.nytimes.com/1983/07/10/arts/music-view-did-shostakovich-have-a-secret.html>)

The first reports on musical hallucinations were published in 1849 and 1846, and the first scientific descriptions in 1900 and 1907. They are thought to be under-reported; in a sample of older patients with audiological problems, 2.5% reported musical hallucinations when asked and it is likely that these are under-reported because of patients being concerned about seeming 'crazy', or because the hallucinations were not bothersome. (SEE ADDENDUM BELOW)

When my mother was nearing 90 and still cognitively intact, she suffered from severe macular degeneration — and when she began imagining that a strange man was sitting at the end of her bed, we figured that something serious was amiss. A brain scan revealed a mass just above the pituitary gland but when a benign cyst was surgically removed that didn't solve the hallucination. Her ophthalmologist wasn't aware of a variant of a condition known as Charles Bonnet Syndrome that's been estimated to occur in no less than 50% of people with significant visual loss.

In his book *Phantom Voices, Ethereal Music and Other Spooky Sounds* (2011) Nell Bauman cited “greater than 280 drugs, herbs and chemicals” that may cause what he calls “musical ear syndrome.” It's also sometimes referred to as Oliver Saks Syndrome. Perhaps my mother's brain surgery could have been averted if only her doctors were aware of this not uncommon condition. Are you?

MICHAEL NEVINS

---

## ADDENDUM

### **Auditory Charles Bonnet syndrome: case report.**

Charlotte Kukstas. *Br J Gen Pract.* 2019

Jul;69(684):362–363. doi: [10.3399/bjgp19X704537](https://doi.org/10.3399/bjgp19X704537)

### MUSICAL HALLUCINATIONS

Musical hallucinations are auditory hallucinations experienced by a patient in the absence of an external auditory stimulus.<sup>1</sup> Patients can perceive the music either continuously or intermittently.<sup>2</sup> In the literature this condition is also reported as Oliver Saks syndrome, musical ear syndrome, and musical hallucinosis. The first reports on musical hallucinations were published in 1849 and 1846, and the first scientific descriptions in 1900 and 1907.<sup>3</sup> They are thought to be under-reported; in a sample of older patients with audiological problems, 2.5% reported musical hallucinations when asked. It is likely that these are under-reported because of patients concerned about seeming 'crazy', or because the hallucinations are not bothersome.

Interestingly, many famous composers have been reported to have had musical hallucinations. Robert Schumann was said to have incorporated musical hallucinations into his Violin Concerto in D Minor and Bedřich Smetana reported his musical hallucinations were in the form of two male voices in G major. Later on, Smetana developed severe hearing loss, thought to be secondary to syphilis, and experienced further musical hallucinations such as a chord in A's major that can be heard in the last movement of his second string quartet. The most commonly accepted predisposing condition for the development of musical hallucinations, in up to 67% of patients, has been shown to be hearing impairment. The hallucinations have been shown to be more intense when the background noise is low. General risk factors include advanced age, social isolation, and female sex (up to 70–80%). Aside from a hearing deficit, there have been other neurological and psychiatric conditions reported to cause musical hallucinations. These include:

- psychiatric disorders (obsessive compulsive disorder, depression, schizophrenia);
- medication;
- cerebral lesions (for example, vascular cerebral diseases, tumours, demyelinating disease);
- general brain atrophy;
- epilepsy of the temporal lobe;
- Parkinson's disease;
- infectious process of the central nervous system; and
- withdrawal from intoxication.

Despite many studies, the aetiology is still unclear. Similar to the classic Charles Bonnet syndrome in which patients with impaired sight have visual hallucinations, patients with hearing impairment have musical hallucinations. Many believe that both visual and musical hallucinations represent a release phenomenon, that is, the sensory deprivation stops input into the auditory system causing spontaneous activity to occur. As musical hallucinations are more intense when the surrounding noise is low, they can be interpreted as a deafferentation phenomenon and it has therefore also been suggested that they must exclusively be associated with an inner-ear disease leading to a *hyperactive state of the ear*. Another theory is that, as patients commonly hear familiar songs, musical hallucinations are derived from memory and spontaneously released in the absence of a specific brain stimulus.

#### CLINICAL PRESENTATION

Normally they consist of well-known music to the patient, such as pop or religious songs, and are generally non-psychotic in nature. However, there are some reports of patients hearing unfamiliar songs. Usually the music is familiar to the patient and the hallucinations are unilateral. Musical hallucinations can occur either acutely or gradually and are commonly perceived as frightening, rather than pleasant. As mentioned earlier, the majority of patients are both cognitively and psychiatrically normal. Therefore they are often not associated with other types of hallucinations or concerns about mood, memory, capacity, or perception.

-However, any psychiatric or neurological causes for the hallucinations should be ruled out. Interestingly, a recent study looking through the literature found that the cause of the musical hallucinations had an impact on the type of music heard. In patients with an auricular or neurodegenerative cause, the songs heard mainly related back to childhood, for example, religious or cultural songs. Patients with structural lesions commonly heard modern music, for example, country or rock, and patients with psychiatric causes tended to hear more sad or scary music.

## MANAGEMENT

For patients with musical hallucinations, the treatment of the underlying cause normally leads to resolution of the symptoms, for example, hearing aids, treating underlying psychiatric disorders, stopping suspected causative medication, and treating epileptic seizures.<sup>4</sup> Medications noted to trigger musical hallucinations are antipsychotics (olanzapine and quetiapine), antidepressants (clomipramine), antiepileptic medications (carbamazepine and valproate), and donepezil. In Charles Bonnet syndrome, treatment of hearing impairment normally leads to resolution of the symptoms. Where the hearing deficit cannot be rehabilitated, listening to ambient background noise, for example, white noise, nature sounds, and the television, can help improve symptoms. The use of psychotropic drugs rarely helps. It is worth noting that recent research has suggested that patients with Charles Bonnet syndrome are more at risk of developing Lewy body dementia, and screening for any cognitive impairment should be undertaken.

Musical hallucinations (also known as auditory hallucinations, auditory Charles Bonnet Syndrome, and Oliver Sacks' syndrome ) describes a neurological disorder in which the patient will hallucinate songs, tunes, instruments and melodies. These hallucinations are not correlated with psychotic illness.

---

---

- 
-