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SUDDEN SENSORINEURAL HEARING LOSS AND COVID-19

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Abstract:

Sudden sensorineural hearing loss (SSNHL) is an auditory condition that happens rapidly and may result in a permanent hearing impairment. Increasing evidence suggests a potential link between SSNHL and viral infections, including COVID-19. This review examines the association between sudden sensorineural hearing loss and COVID-19 by synthesizing past literatures to identify pathophysiological mechanisms, clinical outcomes and management implications. While some studies supported the association between COVID-19 and SSNHL, others report conflicting findings, highlighting the need for further investigation. Hence, understanding this link is pertinent for improving diagnostic and treatment strategies for SSNHL, with broader implications for the post COVID-19 era.

Keywords:

Sudden Sensorineural Hearing Loss, Viral Infection, COVID-19, Literature Review, Hearing Impairment, Pathophysiological Mechanism

Background

Sudden sensorineural hearing loss (SSNHL) is a subset of sensorineural hearing loss that meets certain audiometric characteristics, especially a decline in hearing of 30dB over at least three consecutive frequencies that occurs within 72 hours (Chandrasekhar et al., 2019). This condition is often alarming for patients due to its abrupt onset and potential for a permanent hearing impairment. Although most cases of SSNHL have been reported as idiopathic (Meng et al., 2022), a growing body of knowledge suggests the association between SSNHL and viral pathogens such as COVID-19 (Kim et al, 2024; Yamada et al., 2022).

According to Hu et al. (2022), the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a pathogenic virus in 2019 has caused a global pandemic known as coronavirus disease (COVID-19). During this global pandemic, various cases of SSNHL were reported and researchers began to question its impact on auditory health. Further elaborated by Hu et al. (2022), COVID-19 is primarily associated with respiratory symptoms such as fever, cough and chest discomfort but may extend to other organ systems. Preliminary reports and case studies suggest that COVID-19 may contribute to SSNHL, either directly through viral-mediated damage or indirectly through immune-mediated responses (Jeong & Choi 2021; Qaloosiraqia & Al-Karawi, 2022).

Therefore, this review aims to critically analyze the association between SSNHL and COVID-19 by synthesizing existing literature on the suggested pathophysiological mechanisms, clinical representations and the outcomes. This paper also seeks to provide a comprehensive understanding of how SARS-CoV-2 may influence the onset of SSNHL, as well as the suggested applications for the management of SSNHL in the post COVID-19 pandemic era.

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Methodology

A comprehensive literature search was conducted across various electronic databases, including JSTOR, PubMed, and Google Scholar, to obtain the relevant sources published between January 2020 and December 2024. The search used keywords and phrases related to the association between sudden sensorineural hearing loss (SSNHL) and COVID-19, such as "SSNHL" and "COVID-19". Boolean operators (AND, OR) were employed to refine the search results, ensuring a targeted collection of literature.

Inclusion and Exclusion Criteria

The inclusion criteria were original studies, systematic reviews, or case reports examining the association between SSNHL and COVID-19. All selected articles focus on patients with COVID-19 infection, either during or after illness, and have had vaccinated or unvaccinated. Irrelevant topics that do not specifically discuss the association between SSNHL and COVID-19, non-English language, lack of full-text availability on the SSNHL diagnosis, or the correlation with COVID-19 were excluded.

Data Extraction

Data extraction was conducted using a standardized form developed for this review. The key information that was extracted includes author(s) name, year of publication, SSNHL diagnosis, outcomes measured and key findings. The data compiled into a summary table for easy comparison and synthesis for literature review purposes.

Findings

According to past literature, SSNHL is a critical condition in otology that requires immediate recognition and treatment to reduce the severe consequences on one's life (Peron et al., 2024). During the COVID-19 pandemic, several cases of SSNHL including before and after vaccination have been reported. The association may arise from COVID-19 infection, which can lead to various neurological symptoms such as the effects on the auditory pathway including the cases of SSNHL (Fancello et al., 2022; Jeong & Choi, 2021; Peron et al., 2024). The potential link between SSNHL and COVID-19 cases have raised concerns for further investigation among the researchers. Nonetheless, the association between SSNHL and COVID-19 is still an ongoing debate within the current study.

Most past literature indicates no direct association between SSNHL and COVID-19 infection and the causality remains uncertain (Meng et al., 2022; Thompson et al., 2024; Zoccali et al., 2022). Subsequently, the studies conducted by Beckers et al. (2021) and Peron et al. (2024) have postulated the link between SSNHL and SARS-CoV-2 infection. As evidence, Peron et al. (2024) found a greater incidence of bilateral SSNHL among unvaccinated patients who experienced severe COVID-19 and Beckers et al. (2021) indicated that SARS-CoV-2 is more likely to appear among patients with the downward phase of the infection.

Furthermore, few studies indicated a possible link between SARS-CoV-2 vaccination to SSNHL. As stated by Zoccali et al. (2022), COVID-19 vaccines and host immune cells may contribute to the development of audio-vestibular disorders. Similarly, Jeong and Choi (2021) stated that viral antigens result in immunologic responses that may lead to inflammation in the inner ear. However, few studies found no direct evidence that showed the association between vaccination and SSNHL (Formeister et al., 2022; Jeong & Choi, 2021; Tsetsos et al., 2021).

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The past literature also proposed that viral infection, immune-mediated involvement, and vascular dysfunction may be the prognosis of SSNHL (Beckers et al., 2021; Sciancalepore et al., 2020). Patients with SSNHL have been described as having tinnitus and or vertigo during and following COVID-19 infection (Fancello et al., 2022; Meng et al., 2022; Qaloosiraqia & Al-Karawi, 2022; Thompson et al., 2024; Peron et al., 2024). A study by Sciancalepore et al. (2020) demonstrated that hyperglycemia (diabetes mellitus) may be associated with the increased risk of SSNHL which causes an inflammatory response and leads to microvascular dysfunction.

For SSNHL intervention, Sciancalepore et al. (2020) indicated that most clinicians support the use of steroids as the intervention for SSNHL even if the effectiveness is low. To specify, intratympanic steroids is one of the interventions used for SSNHL, as it may not suppress the immune system and inhibit antibody formation as systemic steroids (Jeong & Choi, 2021; Sciancalepore et al., 2020). To conclude, the existing reports still lack sufficient evidence to establish the connection between SSNHL and COVID-19, as the precise mechanisms impacting the audio-vestibular system remain unclear. Hence, it is suggested for future research to conduct large scale studies and prospective studies across diverse populations to further investigate the long-term effects of the infection in the inner ear. It is also suggested for in-depth research on the potential biomarkers that may enhance the treatment of SSNHL.

Discussion

The existing literature does not provide sufficient evidence to establish a definitive association between sudden sensorineural hearing loss (SSNHL) and COVID-19. Nevertheless, several studies offer possible explanations for the occurrence of SSNHL during the COVID-19 period, particularly involving the auditory and vestibular systems. Qaloosiraqia and Al-Karawi (2022) suggested that SSNHL related to COVID-19 may result from the presence of angiotensin-converting enzyme 2 (ACE2) receptors in the auditory nerve. These receptors may enable viral binding, potentially affecting hearing function, as observed through magnetic resonance imaging (MRI) findings in hospitalised patients. Supporting this hypothesis, Chern et al. (2020, as cited in Meng et al., 2022) reported that the auditory nerve plays a significant role in the development of SSNHL. Proposed mechanisms include reactivation of latent viruses within the spiral ganglia, immune-mediated responses, and direct viral infection of the inner ear (labyrinth) and cochlear nerve. In addition, Beckers et al. (2021) identified vascular factors, such as impaired blood flow, inflammation, or vessel occlusion, as possible contributors to SSNHL.

Some studies have suggested that COVID-19 vaccination, rather than SARS-CoV-2 infection itself, may be associated with the onset of SSNHL. Zoccali et al. (2022) and Tsetsos et al. (2021) reported cases of SSNHL occurring between two- and seven-days following vaccination. However, Tsetsos et al. focused exclusively on the Oxford–AstraZeneca vaccine, limiting the generalisability of their findings to other vaccine types, which may have different physiological effects. Furthermore, neither study included an unvaccinated control group, making it difficult to determine whether vaccination alone can predict the occurrence of SSNHL.

A major limitation across studies examining SSNHL in the context of COVID-19 is small sample size. Meng et al. (2022) noted that reduced hospital attendance during the pandemic, due to concerns about infection risk, may have affected the accuracy and representativeness of

International Journal of Modern Education
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findings. Much of the available evidence is based on case reports or small case series. For example, Jeong and Choi (2021) described three patients from a single healthcare centre, while Zoccali et al. (2022) reported two individual cases. Although these case studies provide detailed clinical observations, they do not allow for broader conclusions regarding a causal relationship between SSNHL and COVID-19. In the study by Jeong and Choi (2021), one patient showed full recovery in the right ear, with hearing improving from 86 dB to 16 dB following salvage treatment and steroid injections, whereas another patient experienced worsening hearing loss despite oral and intratympanic steroid therapy. Such findings highlight individual variability but cannot be generalised to wider populations. Consequently, future research should prioritise large-scale, population-based studies to better determine the potential impact of COVID-19 on SSNHL.

The systematic reviews conducted by Qaloosiraqia and Al-Karawi (2022) and Meng et al. (2022) followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, supporting transparency and methodological rigour. Additionally, Meng et al. (2022) applied the National Institutes of Health quality assessment tool to evaluate included studies, ensuring that only evidence of acceptable quality contributed to their conclusions.

Application to Clinical Practice and Research

The increasing number of idiopathic cases of sudden sensorineural hearing loss (SSNHL) reported during the COVID-19 pandemic is concerning and highlights the need for effective and feasible clinical strategies. Previous studies have proposed a range of interventions, including routine screening for early detection, targeted research initiatives, public education, and improved access to rehabilitation services. A coordinated and multidisciplinary approach has the potential not only to reduce the long-term impact of SSNHL on patients' quality of life but also to strengthen healthcare systems in managing post-COVID-19 complications more effectively.

Early Detection and Audiological Assessment

Findings from existing literature indicate consistent clinical presentations among SSNHL patients, with sudden hearing loss frequently accompanied by tinnitus. Tinnitus has been identified as the primary symptom prompting medical consultation (Elmoursy et al., 2023). In cases of non-isolated SSNHL among COVID-19 patients, bilateral hearing loss with tinnitus has been commonly reported (Fancello et al., 2022). Tinnitus is defined as the perception of sound in the absence of an external auditory stimulus (Beukes et al., 2021). Audiological assessments, including pure tone audiometry (PTA), have revealed reduced low-amplitude responses, suggesting cochlear hair cell damage in affected COVID-19 patients (Chirakkal et al., 2020).

Based on these findings, a key clinical application is the implementation of comprehensive audiological assessments for COVID-19 patients presenting with tinnitus or hearing loss. This should include detailed audiometric testing, careful monitoring of family history, and regular follow-up during routine medical check-ups. Early identification of SSNHL allows ENT specialists to initiate timely and appropriate treatment, thereby reducing the risk of long-term auditory impairment and improving recovery outcomes.

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Longitudinal Monitoring and Diagnostic Imaging

Future research should prioritise longitudinal study designs to explore the long-term effects of SSNHL and its associated symptoms. Ricciardiello et al. (2021) reported clinical improvement in three out of five patients following long-term follow-up, emphasising the importance of continued monitoring. Their study examined one of the largest cohorts of COVID-19 patients presenting with sudden audio-vestibular symptoms, employing timely assessments, imaging, and blood investigations to support a potential direct association with COVID-19.

Additional diagnostic tools, such as speech audiometry, may enhance clinical evaluation by assessing patients' ability to perceive speech and language. Elmoursy et al. (2023) used Ward Discrimination scores and speech reception threshold testing to evaluate phonetic balance and speech perception in adults. Furthermore, magnetic resonance imaging (MRI) can provide valuable evidence of cochlear inflammation, aiding in the identification of SSNHL aetiology. Fancello et al. (2022) emphasised the necessity of combining audiological and radiological assessments, particularly in COVID-19 patients presenting with neurological symptoms alongside hearing loss.

Psychosocial and Rehabilitative Interventions

Hearing loss and tinnitus can significantly disrupt communication and social interaction, leading to emotional and psychological distress. Practical interventions, such as the use of transparent face masks, may facilitate lip-reading and improve communication for hearing-impaired individuals (Beukes et al., 2021). Psychological interventions, particularly Internet-based Cognitive Behavioural Therapy (iCBT), have shown effectiveness in reducing tinnitus-related distress and associated symptoms, including insomnia, depression, hyperacusis, and cognitive difficulties (Beukes et al., 2021). Psychoeducation delivered through iCBT can also help patients understand the social and emotional consequences of SSNHL and develop effective coping strategies.

Williams et al. (2015) reported reductions in anxiety levels among hearing-impaired participants following iCBT, particularly in those experiencing avoidant or anxious social interactions. Such interventions may improve sleep quality, concentration, and overall daily functioning. Additionally, educational initiatives aimed at healthcare professionals and family members can improve caregiving practices and support patients in managing SSNHL-related challenges (Beukes et al., 2021).

Vestibular Dysfunction and Rehabilitation

SSNHL is often associated with vestibular dysfunction, leading to symptoms such as vertigo, nystagmus, imbalance, and impaired spatial orientation. COVID-19-related inner ear damage has been linked to slower recovery in patients experiencing vertigo and dizziness (Pazdro-Zastawny et al., 2022). Proposed mechanisms include biochemical alterations in inner ear fluid or structural damage to vestibular and cochlear components (Fancello et al., 2022). Castellucci et al. (2023) found poorer hearing outcomes in SSNHL patients with vertigo, particularly those presenting with flat-type audiograms.

Vestibular rehabilitation therapy plays a crucial role in managing these symptoms. Gill-Body et al. (1994) demonstrated improvements in balance and vestibular function following bilateral vestibular hypofunction therapy over a 16-week period, measured through posturography and

International Journal of Modern Education
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rotational testing. These findings support the integration of vestibular rehabilitation into SSNHL management plans.

Pharmacological and Assistive Management

Pharmacological treatment remains a cornerstone of SSNHL management. Standard protocols typically include intravenous dexamethasone and glycerol followed by oral steroid tapering (Fancello et al., 2022). In cases of treatment failure, salvage therapies such as intratympanic steroid injections, hyperbaric oxygen therapy, and fibrinogen or LDL-apheresis may be considered. Skarżyńska et al. (2022) reported improved hearing outcomes in patients receiving combined intratympanic and prolonged oral corticosteroid therapy.

Patients with SSNHL accompanied by tinnitus and dizziness are at increased risk of developing insomnia (Yeo et al., 2022). Short-term use of sleep medication may therefore be appropriate, particularly when insomnia is exacerbated by steroid treatment (Leung Bs et al., 2016).

For patients with persistent hearing loss despite medical treatment, assistive technologies and, in some cases, surgical interventions may provide substantial benefit. Hearing aids, cochlear implants, and bone-conduction devices can improve auditory perception and communication. Although hearing aids are effective and widely available, their use remains limited due to delayed diagnosis, patient reluctance, and financial barriers (Ren et al., 2022; Tanna et al., 2023). Cochlear implants, while highly beneficial for individuals with severe-to-profound hearing loss, remain inaccessible to some patients due to cost and variable outcomes.

The Islamic Perspective

The Qur'an contains approximately 135 references to the concept of hearing and its derivatives, underscoring hearing as one of the greatest blessings bestowed upon humanity by Allah SWT. Hearing is frequently mentioned alongside sight, highlighting the importance of these two senses within Islamic teaching (Rajabnejad, 2012, as cited in Rahmat et al., 2018). This emphasis reflects the fundamental role of hearing in human development, knowledge acquisition, and spiritual responsibility.

As stated in **S**urah Al-Insan (76:2) in the Qur'an:

"Indeed, We created humankind from a drop of mixed fluid, to test them, and We made them hearing and seeing."

This verse suggests that hearing is among the earliest faculties granted to human beings. Notably, hearing is mentioned before sight, a sequence that aligns with contemporary scientific evidence showing that the auditory system develops earlier than the visual system during embryogenesis. Research indicates that key auditory structures form early in foetal development and become functional by mid-gestation (Graven & Browne, 2008; Moore & Linthicum, 2007; Helwany et al., 2023). The Qur'anic reference to this developmental order, long before the advent of modern embryology, is often viewed as reflecting its timeless nature. According to the Tafsir Ibn Kathir, the phrase "We made them hearing and seeing" conveys that these faculties are granted so that humans may choose how they are used, either in obedience or disobedience to Allah. This interpretation reinforces the notion that hearing is both a blessing and a responsibility.

International Journal of Modern Education
IJMOE
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Volume 7 Issue 28 (December 2025) PP. 1278-1288
DOI: 10.35631/IJMOE.728088

This theme is further emphasised in Surah Al-Mulk (67:23):

"Say, 'He is the One Who brought you into being and granted you hearing, sight, and intellect. Yet you are hardly grateful.'"

This verse highlights accountability for the use of sensory faculties, particularly hearing, which in Islam is regarded as a primary channel through which divine guidance is received. Listening to Qur'anic recitation, remembrance (dhikr), and beneficial knowledge strengthens spiritual awareness and moral conduct. Conversely, misuse of hearing, such as engaging in harmful or unethical content, is viewed as neglect of a divine trust.

Accountability is further stressed in Surah Al-Isra (17:36):

"Indeed, the hearing, the sight, and the heart – all of these will be questioned."

According to the Tafsir Al-Qurtubi, hearing, sight, and intellect represent the three principal means through which humans acquire knowledge, and individuals will be held accountable for how these faculties are utilised.

In the context of sudden sensorineural hearing loss (SSNHL), these teachings acquire particular significance. SSNHL can result in abrupt and profound loss of hearing, often accompanied by tinnitus, significantly affecting communication, social interaction, and emotional well-being. From an Islamic perspective, the sudden loss of hearing may prompt deeper reflection on the value of this sense, reinforcing gratitude for health and awareness of its fragility. The experience of SSNHL may therefore be understood not only as a medical condition but also as a spiritual trial.

Islam teaches that illness, including conditions such as SSNHL and COVID-19, is a test from Allah SWT and an opportunity for patience, reflection, and spiritual growth. This concept is supported by a hadith narrated by Abu Saʿid Al-Khudri and Abu Huraira, recorded in Sahih al-Bukhari:

"No fatigue, nor disease, nor sorrow, nor sadness, nor hurt, nor distress befalls a Muslim, even even a prick from a thorn, except that Allah expiates some of his sins through it."

This teaching encourages individuals experiencing illness to endure with patience and hope, recognising hardship as a means of spiritual purification. At the same time, Islam emphasises that health is a trust from Allah SWT, and believers are obliged to protect and preserve it (Al Khayat, 1997). Seeking medical treatment for SSNHL, therefore, aligns with Islamic principles rather than contradicting reliance on divine will.

This is reinforced by another hadith narrated by Abu Huraira:

"There is no disease that Allah has created, except that He also has created its treatment." (Sahih al-Bukhari 5678)
In relation to SSNHL, this teaching supports proactive engagement with medical interventions such as early audiological assessment, pharmacological treatment, rehabilitation, and assistive

International Journal of Modern Education
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hearing technologies. Trust in Allah is complemented by responsible action, reflecting the balance between faith and medical practice encouraged in Islam.

Thus, Islamic teachings place profound emphasis on hearing as a divine gift, a means of knowledge, and a source of accountability. When viewed through this lens, SSNHL represents not only a clinical challenge but also a spiritual trial that underscores the importance of gratitude, patience, and responsible healthcare-seeking behaviour.

Conclusion

Reports of sudden sensorineural hearing loss (SSNHL) have increased since the emergence of SARS-CoV-2. However, current evidence remains insufficient to establish a definitive association between COVID-19 and the development of SSNHL, as existing studies have not demonstrated a significant causal effect of the virus. Consequently, future research should place greater emphasis on investigating the pathogenic mechanisms of SARS-CoV-2 and their potential involvement in SSNHL. Expanding the scope of research to include larger, multi-centre, and geographically diverse populations would provide deeper insight into regional variability and the possible influence of genetic factors on susceptibility to SSNHL.

Further clarification is also required regarding the role of COVID-19 vaccination in SSNHL. Future studies should clearly distinguish between different vaccine types and examine their biological characteristics to better understand whether vaccination contributes to an increased risk of SSNHL. A clearer understanding of viral and vaccine-related mechanisms may ultimately inform more effective and targeted treatment strategies within clinical practice.

In addition to medical considerations, this paper highlights the critical role of support systems in the management of SSNHL. Family members and healthcare professionals play a key role in supporting patients' emotional regulation, treatment adherence, and overall quality of life. However, cultural factors should be carefully considered in future research and clinical practice to accommodate variations in family dynamics and beliefs, thereby minimising potential conflict and ensuring culturally sensitive care.

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References

Al Khayat, M. H. (1997*). Health: An Islamic perspective.* World Health Organization, Regional Office for the Eastern Mediterranean.

Beckers, E., Chouvel, P., Cassetto, V., & Mustin, V. (2021). Sudden sensorineural hearing loss in COVID-19: A case report and literature review. *Clinical Case Reports, 9*(4), 2300–2304.

Beukes, E., Ulep, A. J., Eubank, T., & Manchaiah, V. (2021). The Impact of COVID-19 and the Pandemic on Tinnitus: A Systematic Review. *Journal of Clinical Medicine, 10*(13), 2763.

Castellucci, A., Botti, C., Delmonte, S., Bettini, M., Lusetti, F., Brizzi, P., Ruberto, R., Gamberini, L., Martellucci, S., Malara, P., Armato, E., Renna, L., Ghidini, A., & Bianchin, G. (2023). Vestibular assessment in sudden sensorineural hearing loss: Role

International Journal of Modern Education
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IJMOE
Volume 7 Issue 28 (December 2025) PP. 1278-1288
DOI: 10.35631/IJMOE.728088

in the prediction of hearing outcome and in the early detection of vascular and hydropic pathomechanisms. *Frontiers in Neurology, 14.*

Chandrasekhar, S. S., Tsai Do, B. S., Schwartz, S. R., Bontempo, L. J., Faucett, E. A., Finestone, S. A., Hollingsworth, D. B., Kelley, D. M., Kmucha, S. T., Moonis, G., Poling, G. L., Roberts, J. K., Stachler, R. J., Zeitler, D. M., Corrigan, M. D., Nnacheta, L. C., & Satterfield, L. (2019). Clinical Practice Guideline: Sudden Hearing Loss (Update). *American Academy of Otolaryngology-Head and Neck Surgery, 161*(1), 1-45.

Chern, A., Famuyide, A. O., Moonis, G., & Lalwani, A. K. (2020). Bilateral Sudden Sensorineural Hearing Loss and Intralabyrinthine Hemorrhage in a Patient With COVID-19. *Otology & Neurotology, 42*(1), 10-14.

Chirakkal, P., Al Hail, A., N., Zada, N., & Vijayakumar, D., S. (2020). COVID-19 and tinnitus. *Ear, nose & throat journal, 10*(2).

Elmoursy, M., Bakr, M., Mohamed, E. S., & Reggae, M. A. (2023). The incidence of sudden sensorinerual hearing loss (SSNHL) in COVID-19 patients in tertiary care referral units. *SN Comprehensive Clinical Medicine, 5*(87).

Fancello, V., Fancello, G., Hatzopoulos, S., Bianchini, C., Stomeo, F., Pelucchi, S., & Ciorba, A. (2022). Sensorineural Hearing Loss Post-COVID-19 Infection: An Update. *Audiology Research, 12*(3), 307–315.

Formeister, E. J., Wu, M. J., Chari, D. A., Meek, R., Rauch, S. D., Remenschneider, A. K., Quesnel, A. M., De Venecia, R., Lee, D. J., Chien, W., Stewart, C. M., Galaiya, D., Kozin, E. D., & Sun, D. Q. (2022). Assessment of sudden sensorineural hearing loss after COVID-19 vaccination. *JAMA Otolaryngology-Head & Neck Surgery, 148*(4), 307.

Gill-Body, K. M., Krebs, D. E., Parker, S. W., & Riley, P. O. (1994). Physical Therapy Management of Peripheral Vestibular Dysfunction: Two Clinical Case Reports. *Physical Therapy, 74*(2), 129–142.

Graven, S. N., & Browne, J. V. (2008). Auditory development in the fetus and infant. *Newborn and Infant Nursing Reviews, 8(*4), 187–193.

Helwany, M., Arbor, T. C., & Tadi, P. (2023). *Embryology, ear.* StatPearls [Internet].

Hu, B., Guo, H., Zhou, P., & Shi, Z. L. (2022). Characteristics of SARS-CoV-2 and COVID-19. *Nature Reviews Microbiology, 19.*

Jeong, J., & Choi H. S. (2021). Sudden sensorineural hearing loss after COVID-19 vaccination. *International Journal of Infectious Diseases, 113,* 341-343.

Kim, H. J., Jeong, S., Kim, K., Lee, J. D., Oh, Y. H., Suh, M. J. (2024). Incidence of hearing loss following COVID-19 among young adults in South Korea: a nationwide cohort study. *EClinicalMedicine, 75.*

Leung Bs, M., Flaherty, A., Zhang Bs, J., Hara, J., Barber, W., & Burgess, L. (2016). Practice Update. *Hawaii J Med Public Health, 75*(6).

Meng, X., Wang, J., Sun, J., & Zhu, K. (2022). COVID-19 and sudden sensorineural hearing loss: A systematic review. *Frontiers in Neurology, 13.*

Moore, J. K., & Linthicum, F. H. (2007). The human auditory system: A timeline of development. *International Journal of Audiology, 46*(9), 460–478.

Pazdro-Zastawny, K., Dorobisz, K., Misiak, P., Kruk-Krzemień, A., & Zatoński, T. (2022). Vestibular disorders in patients after COVID-19 infection. *Frontiers in Neurology, 13*.

Peron, K. A., Scott, M. C. P., Soeiro, T. L. T., Do Amaral, J. B., Chandrasekhar, S. S., & de Oliveira Penido, N. (2024) Sudden sensorineural hearing loss: audiological profile during the COVID-19 pandemic. *Frontiers in Neurology, 15.*

International Journal of Modern Education
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Qaloosiraqia, R. K. E., & Al-Karawi, H. A. Y. (2022). Sensorineural hearing loss during and post COVID19 infections. *International Journal of Health Sciences, 6, 14233*–14244.

Rahmat, S., Othman, N. A., Sulaiman, N. H., Jusoh, M., Izani, M. H., Dzulkarnain, A. A., Zakaria, N. 'Azzah, Tukiran, N. H., Ismail, N., Marina Lamri, M. L., Jamaluddin, S. A., Marhaban, J. A., Aslynn, W. A., Mohamed Zain, N. A., & Hanafiah, N. A. (2018). Hearing impairment from the Islamic Perspective: A Review. *IIUM Medical Journal Malaysia, 17*(2).

Ren, H., Hu, B., & Jiang, G. (2022). Advancements in prevention and intervention of sensorineural hearing loss. *Therapeutic Advances in Chronic Disease, 13,* 204062232211049.

Ricciardiello, F., Pisani, D., Viola, P., Cristiano, E., Scarpa, A., Giannone, A., Longo, G., Russo, G., Bocchetti, M., Coppola, C., Perrella, M., Oliva, F., & Chiarella, G. (2021). Sudden sensorineural hearing loss in mild COVID-19: Case series and analysis of the literature. *Audiology Research, 11*(3), 313-326.

Sciancalepore, P. I., De Robertis, V., Sardone, R., & Quaranta, N. (2020). Sudden sensorineural hearing loss: What factors influence the response to therapy? *Audiology Research, 10*(1). 234.

Skarżyńska, M. B., Kołodziejak, A., Gos, E., Sanfis, M. D., & Skarżyński, P. H. (2022). Effectiveness of Various Treatments for Sudden Sensorineural Hearing Loss—A Retrospective Study. *Life, 12*(1), 96.

Tanna, R. J., Lin, J. W., & Jesus, O. D. (2023, August 23). *Sensorineural Hearing Loss.* StatPearls Publishing.

Thompson, E. C., Altartoor, K., & Vivas, E. X. (2024). Sudden Hearing Loss before, during, and after the Pandemic: Investigating COVID-19 Illness and Vaccine-Related Symptoms. *Audiology and Neurotology*, 1–9.

Tsetsos, N., Poutoglidis, A., Vlachtsis, K., Kilmpasanis, A., & Gougousis, S. (2021). Sudden Sensorineural Hearing Loss Following the Second Dose of COVID-19 Vaccine. *Cureus, 13*(8).

Williams, K. C., Falkum, E., & Martinsen, E. W. (2015). A cognitive therapy program for hearing-impaired employees suffering from mental distress. *International Journal of Audiology, 54*(4), 227–233.

Yamada, S., Kita, J., Shimura, D., Nakamura, Y., Sahara, S., Misawa, K., & Nakanishi, H. (2022). Update on findings about sudden sensorineural hearing loss and insight into its pathogenesis. *Journal of Clinical Medicine, 11*(6387).

Yeo, C. D., Yeom, S. W., You, Y. S., Kim, J. S., & Lee, E. J. (2022). Association of sudden sensorineural hearing loss with increased risk of insomnia: a nationwide population-based cohort study. *Journal of Clinical Sleep Medicine, 18(*5), 1335-1342.

Zoccali, F., Cambria, F., Colizza, A., Ralli, M., Greco, A., De Vincentiis, M., ... & Barbato, C. (2022). Sudden sensorineural hearing loss after third dose booster of COVID-19 vaccine administration. *Diagnostics, 12*(9), 2039.