

# Rethinking tinnitus ‘care’: the role of digital solutions

BY FABRICE BARDY

Experiencing tinnitus can be very distressing and accessible care is limited. Digital therapeutics is one way of addressing these concerns, as described by Dr Bardy.

Tinnitus presents a significant clinical challenge for various healthcare professionals (GPs), ENTs and audiologists. It is prevalent, affecting millions worldwide and contributing to a significant healthcare burden. While often described by patients as ‘ringing in the ears’, tinnitus encompasses a complex array of symptoms that can lead to emotional distress, sleep disturbances and a reduced quality of life. The challenge of tinnitus management is addressing not only the auditory aspects of the condition but also the emotional and cognitive distress that often accompanies it. Despite the availability of effective management strategies, patients are too often told ‘there’s nothing you can do’, which can fuel a cycle of anxiety and distress. Although a ‘cure’ for tinnitus is still being sought, habituating to their tinnitus is possible. The key is accessing this information in the context of long waiting lists, lack of clinical expertise, geographic location and the cost of private healthcare.

## Overcoming obstacles

Emerging access to mobile phones offers new opportunities to support tinnitus patients and digital therapeutics (DTx) are an opportunity to redefine how we can approach tinnitus treatment. DTx can provide early, accessible interventions that support patients before their symptoms escalate. By using validated, evidence-based techniques, digital tools offer GPs, ENT specialists and audiologists new options for empowering patients with self-management skills, allowing them to regain a sense of control and actively reduce tinnitus distress.

“Mindfulness trains patients to observe and accept the tinnitus sounds without reacting emotionally, which can reduce distress over time”



The MindEar app offers access to cognitive behavioural therapy (CBT) exercises, sound therapy, relaxation techniques and group therapy sessions led by a tinnitus coach to support tinnitus management.

## Understanding digital therapeutics

Digital therapeutics are clinically validated, software-based interventions designed to treat specific health conditions. Already, DTx have shown promise for a range of conditions, from insomnia to irritable bowel syndrome (IBS) and chronic pain. These tools often integrate different evidence-based techniques to offer a holistic intervention and include strategies for behavioural change such as self-monitoring strategies to help individuals receive help outside of clinical settings. These tools not only help patients learn practical skills to manage tinnitus symptoms – such as interrupting negative thought spirals and developing resilience – but also provide a structured way to address common pitfalls like anxiety, sleep disruptions and hyperawareness of symptoms. In this way, the auditory, emotional and cognitive impacts of tinnitus can be addressed. The evidence for the efficacy of DTx in tinnitus is emerging, with recent studies highlighting the feasibility and efficacy of internet-based tinnitus therapies [1–3].

## An opportunity to ease access to tinnitus management

DTx are flexible tools that are designed to speed up the delivery of evidence-based tinnitus support and are tailored to suit different clinical settings. They can be used to complement existing clinical care or as standalone tools where this care is not in place. More digital therapeutics for tinnitus interventions are being created both online and as smartphone apps. One example is our MindEar app (<https://mindear.app.link/download>).

## Key components of tinnitus digital therapeutics

Digital therapeutics for tinnitus typically combine a variety of techniques, each targeting a specific dimension of the tinnitus experience:

### Cognitive behavioural therapy (CBT) based exercises

CBT focuses on changing automatic emotional responses to tinnitus. This approach encourages patients to challenge catastrophic thoughts such as, ‘I’ll never be able to sleep again’, which exacerbate anxiety and reinforce negative associations with tinnitus sounds.

### Mindfulness and relaxation exercises

Mindfulness and relaxation exercises, such as progressive muscle relaxation and breathing techniques, can help to reduce the body’s stress response. For example, a

patient might be able to practise progressive muscle relaxation to mitigate stress, as anxiety heightens tinnitus awareness. Mindfulness trains patients to observe and accept the tinnitus sounds without reacting emotionally, which can reduce distress over time.

### Sound therapy

Sound therapy offers a bottom-up approach to managing tinnitus. Digital platforms provide customisable soundscapes, allowing individuals to tailor them to their preferences. Soothing nature sounds or coloured noise can gently stimulate the auditory system, reducing the contrast between tinnitus and the surrounding environment. This creates an ideal setting for promoting habituation, helping the brain to gradually diminish the perception of tinnitus over time.

### Sleep hygiene education

Tinnitus can be particularly intrusive at night when external sounds are minimal. To break the cycle of sleep disturbance and anxiety, digital solutions provide education on sleep hygiene, promoting a consistent sleep routine and suggesting calming pre-sleep activities. These interventions help patients develop new habits that facilitate restful sleep.

### Self-monitoring and goal setting

Many digital platforms enable patients to track their symptoms, set goals and monitor progress. These features promote self-awareness and allow patients to take an active role in their treatment, reinforcing a sense of control and accomplishment.

## The role of digital therapeutics in empowering patients

One of the primary advantages of digital therapeutics is their ability to empower patients to take charge of their health. By offering easy-to-follow modules, educational resources and self-paced exercises, these tools encourage patients to make gradual,

sustainable changes to their habits and beliefs about tinnitus. Rather than passively accepting their symptoms, patients learn actionable skills that reduce distress and improve their quality of life.

The self-management model provided aligns with a growing demand for patient-centred healthcare. By giving individuals the tools to influence their wellbeing, digital therapeutics foster a proactive approach that complements traditional in-person treatments. Furthermore, digital intervention can reduce healthcare costs by minimising the need for frequent clinical visits, a crucial benefit as healthcare systems worldwide face increasing constraints.

## Addressing common obstacles in digital therapeutics for tinnitus

Digital therapeutics for tinnitus show promise but face challenges. Maintaining patient engagement with exercises like CBT or relaxation techniques can be difficult. A recent study by Bardy et al [2] explored this hybrid model by combining digital intervention (using the MindEar app) with telepsychology. Participants were divided into two groups: one used only the digital tool, while the other added four 30-minute psychologist sessions over eight weeks. After 16 weeks, both groups showed significant improvement, with 64% reporting a meaningful decrease in tinnitus distress. However, by eight weeks, the hybrid approach showed a trend for faster progress, with more participants experiencing relief compared to the digital-only group. This highlights the potential benefits of combining digital tools with professional support for quicker and more effective outcomes.

## Conclusion

Digital therapeutics are transforming the landscape of tinnitus care, providing accessible, effective and scalable solutions to support patients from the earliest stages of their journey. By addressing the

psychological, emotional and physiological aspects of tinnitus, these tools offer a lifeline to those who might otherwise feel abandoned by the healthcare system. While challenges like adherence and access to live support remain, integrating digital therapeutics with human expertise has the potential to provide comprehensive tinnitus care that empowers patients and alleviates the burden on healthcare providers.

The future of tinnitus treatment is one where no patient is told that ‘nothing can be done’. With digital therapeutics, we have the tools to rewrite this narrative, offering hope, support and a path toward relief for those struggling with tinnitus.

## References

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**Declaration of competing interests:** FB is a co-founder of, and has financial interests in Odio Tech Pty Ltd which developed the MindEar app.