Treatments for Tinnitus: Current Evidence, Emerging Therapies, and the Role of Corticosteroids

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INTRODUCTION

- Tinnitus, the perception of sound without an external source, affects 10–15% of adults and arises from diverse auditory and non-auditory mechanisms.
- Cochlear injury or reduced auditory input may contribute to maladaptive central auditory plasticity, including increased neural gain, hyperexcitability, and cortical reorganization, while limbic and autonomic networks may influence tinnitus-related distress and persistence.
- Treatment remains challenging because tinnitus varies in etiology, chronicity, severity, hearing status, and associated symptoms.
- Available interventions include pharmacologic and intratympanic therapies, hearing-based and behavioral interventions, dietary supplements, and emerging neuromodulatory approaches; however, no single treatment is consistently effective across all patient populations.

METHODS

- PubMed was searched for primary studies evaluating tinnitus treatments; reviews and meta-analyses were excluded.
- Of **94** articles screened, **57** underwent data extraction and **50** met final inclusion criteria.
- Extracted data included tinnitus subtype, intervention, dosing/protocol, outcome measures (e.g., THI, TFI), and key findings.

RESULTS

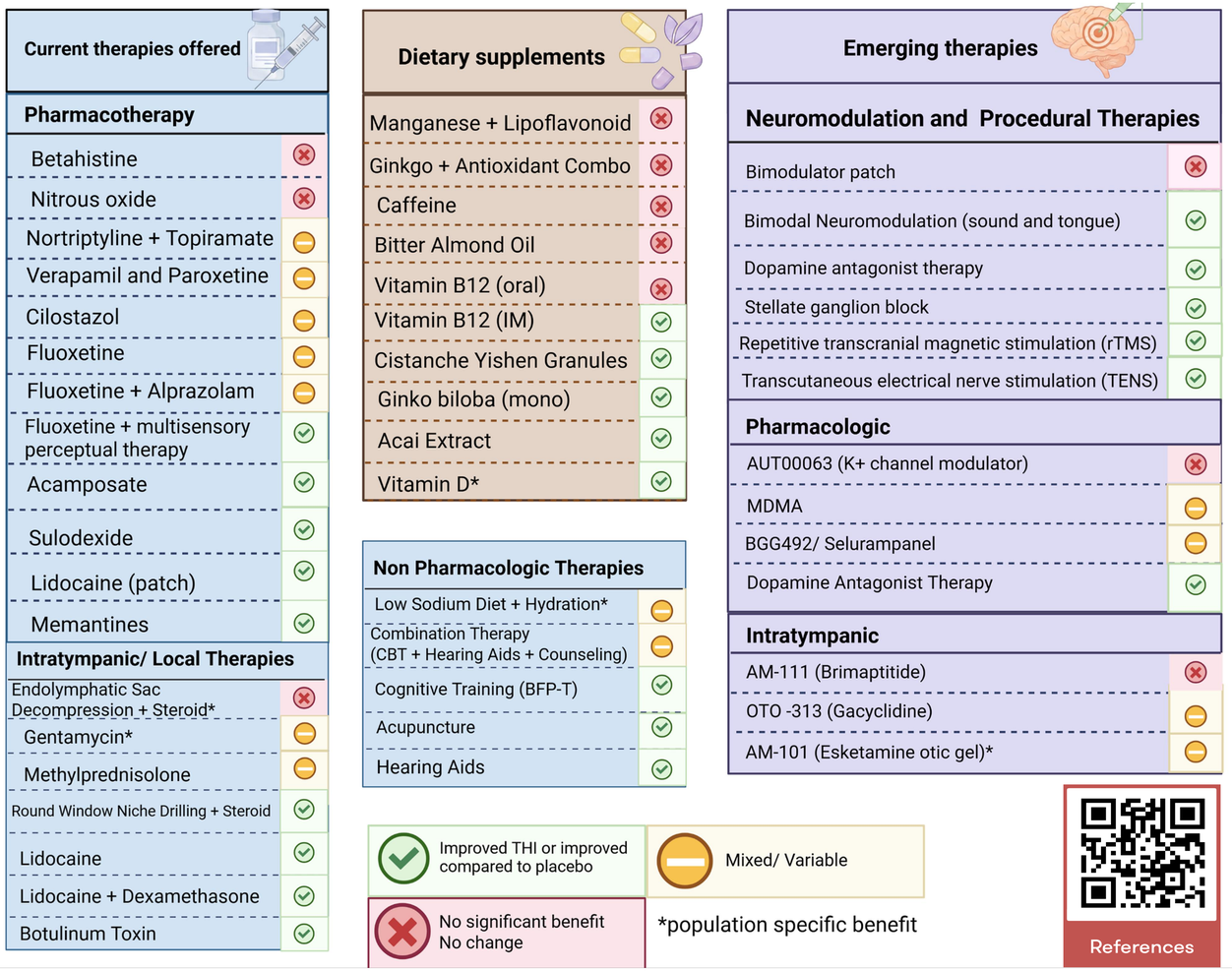


Figure 1. Current and emerging tinnitus therapies categorized by treatment modality and reported clinical outcomes. Green indicates improvement, yellow indicates mixed or variable outcomes, and red indicates no significant benefit or change.

KEY FINDINGS

- Pharmacologic and intratympanic therapies demonstrated variable efficacy, with benefits often limited to specific tinnitus subtypes or patient populations.
- Non-pharmacologic therapies, particularly CBT and hearing aids, demonstrated improvements in tinnitus burden and functional outcomes.
- Emerging targeted and neuromodulatory therapies showed promising results, although outcomes varied across interventions and patient populations.
- Dietary supplements demonstrated mixed outcomes, with potential benefits largely confined to selected patient populations.

CONCLUSION

- No universal therapy showed consistent efficacy, supporting individualized treatment based on tinnitus etiology, subtype, and patient characteristics.
- Treatment response varied by modality, with non-pharmacologic therapies showing favorable outcomes and selected pharmacologic, intratympanic, corticosteroid-based, and neuromodulatory therapies benefiting specific populations.
- Future research should identify predictors of treatment response through larger trials with standardized outcomes and adequate follow-up.