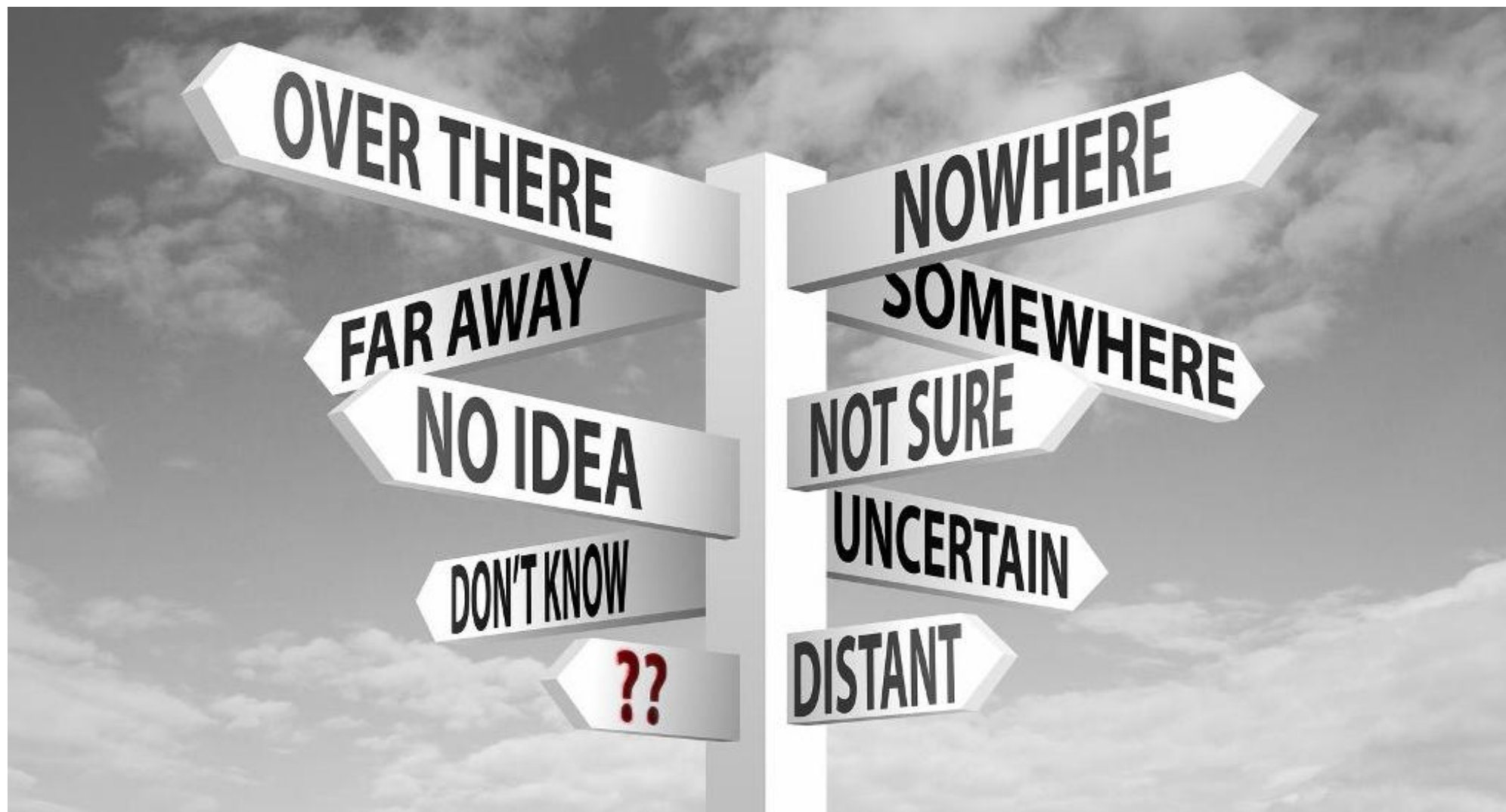




Introducing hyperacusis

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Review Article

Clinical Interventions for Hyperacusis in Adults: A Scoping Review to Assess the Current Position and Determine Priorities for Research

Kathryn Fackrell,^{1,2} Iskra Potgieter,¹ Giriraj S. Shekhawat,^{3,4} David M. Baguley,^{1,2}
Magdalena Sereda,^{1,2} and Derek J. Hoare^{1,2}

1. How hyperacusis is currently defined in research studies?
2. How is it currently measured?
3. What is the level of evidence for current management options?

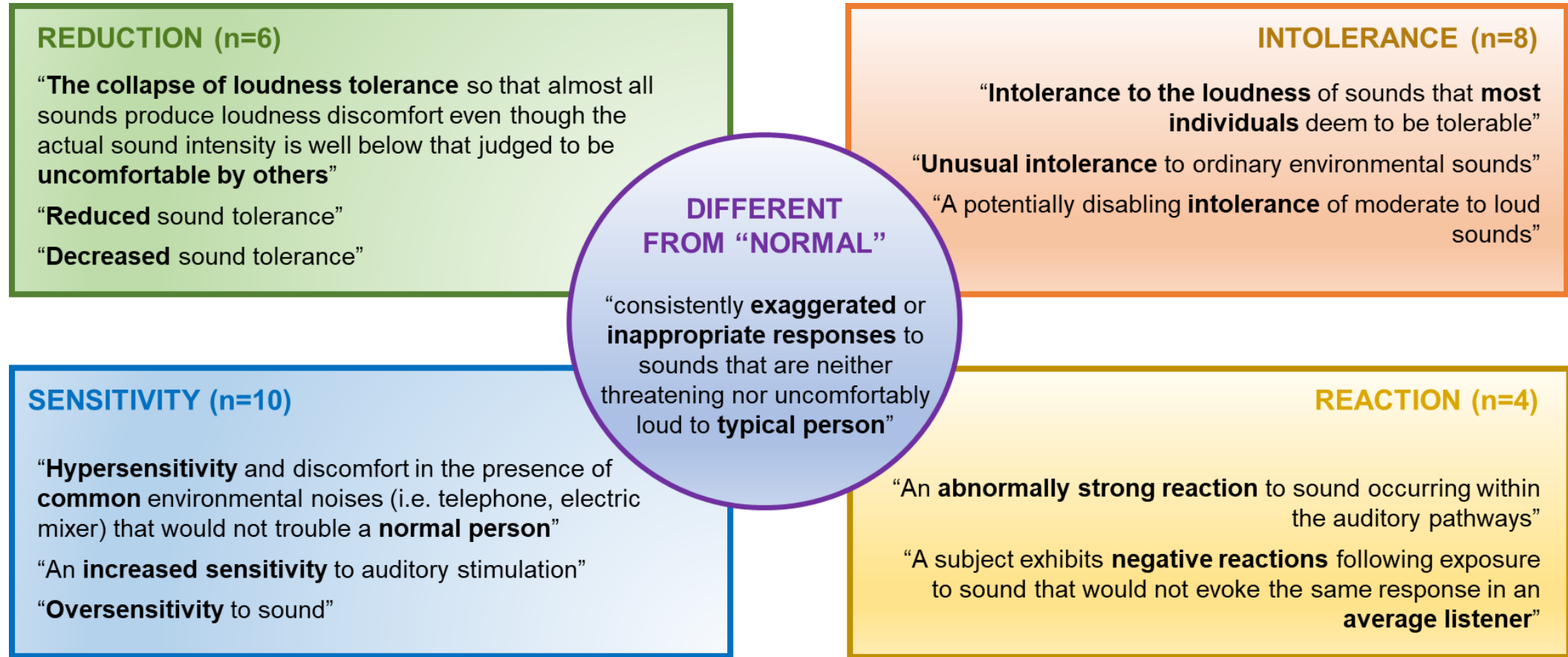


1587 unique records
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110 full text articles
assessed for eligibility

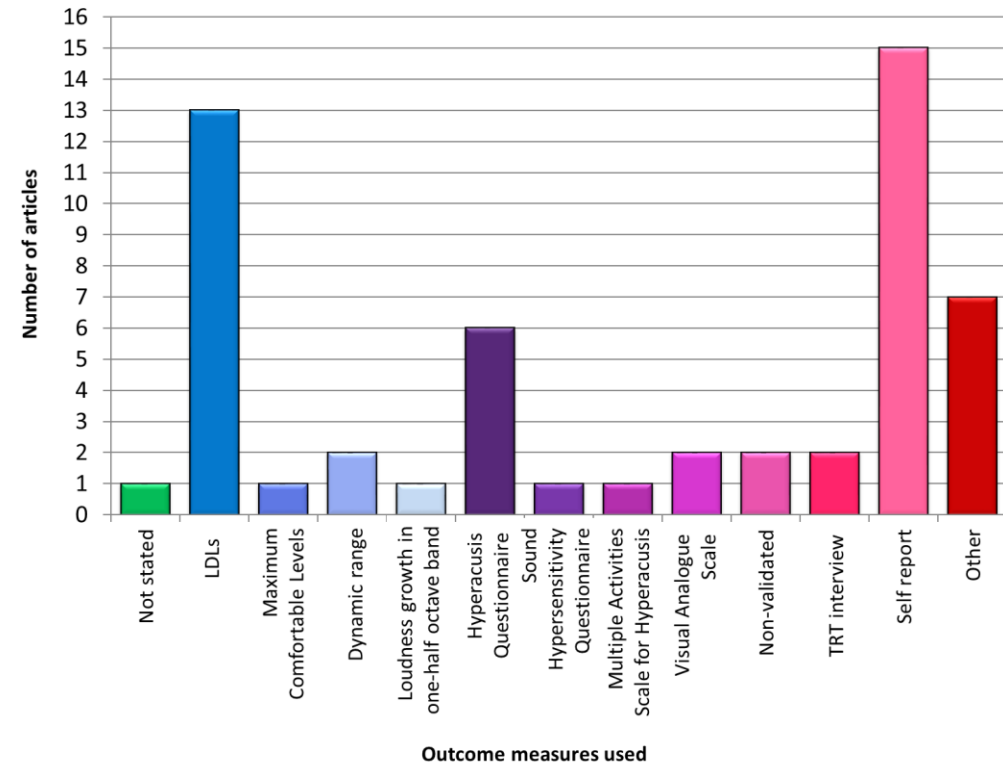
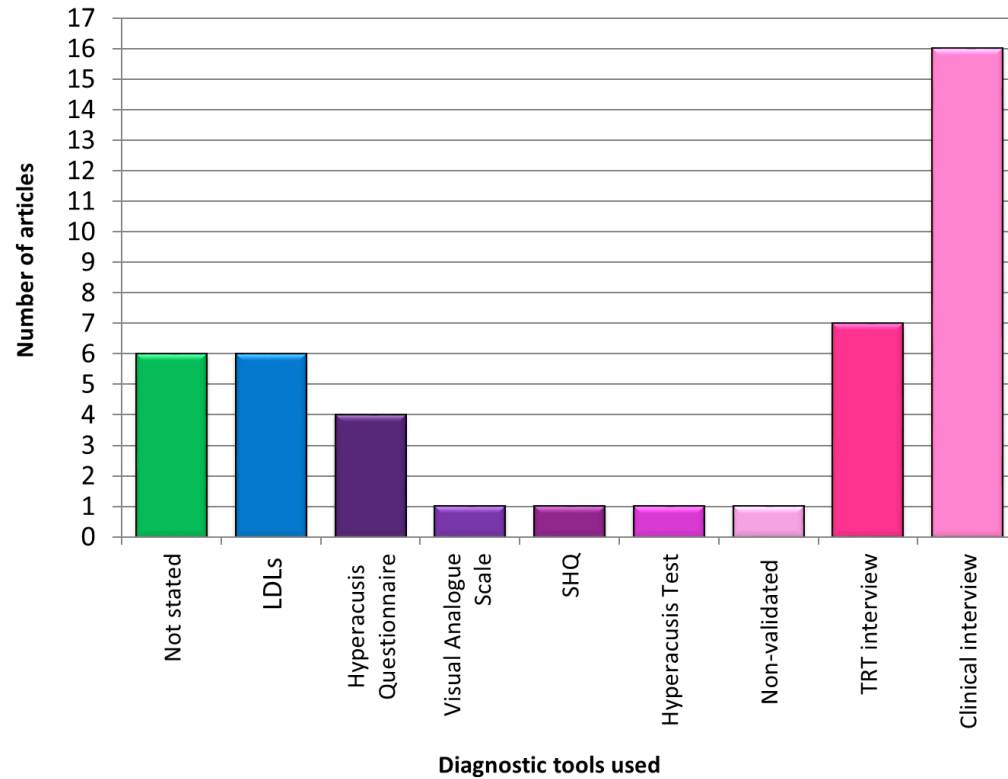
43 articles include for
cataloguing

Defining hyperacusis...



Assessing hyperacusis...

No consistent
measurement tools



Management strategies: Evidence from literature

COGNITIVE BEHAVIOURAL THERAPY

Complaint: Primary: n2 Secondary: n1

- Education, graded exposure to sounds, relaxation, management and behavioural activation.
- All studies reported a reduction in hyperacusis severity.
- An RCT showed significant differences in HQ and LDLs compared to baseline and waiting list²
- BUT 1 study did not measure hyperacusis after treatment, relied on the TQ.

TINNITUS RETRAINING THERAPY

Complaint: Primary: n5 Secondary: n8 Symptom set: n3

- Educational training, guidance on avoidance behaviour, sound desensitisation and sound enrichment.
- Majority showed improvement in hyperacusis
- Noise generators and counselling led to greater improvements
- 1 study³ showed no change in difficulties with sleep, relaxation, concentration, social relations and work.

DEVICES ONLY

Complaint: Primary: n4 Secondary: n2 Symptom set: n5

- Acoustic training sessions and desensitisation programs⁴⁻⁷
- Continuous wave laser TinniTool, Cochlear Implants, hearing aids
- All showed decreased LDLs and HQ scores, and improved ability to manage life
- Phase-outTM (phase shift based on tinnitus) and compression devices led to no change in severity

COUNSELLING ONLY

Complaint: Primary: n1

- Hyperacusis-focused directive counselling including education on the auditory system and mechanisms of hyperacusis
- Patient reported improved tolerance to sounds with difficulties only during depressive episodes.

SURGERY

Complaint: Primary: n4 Symptom set: n2

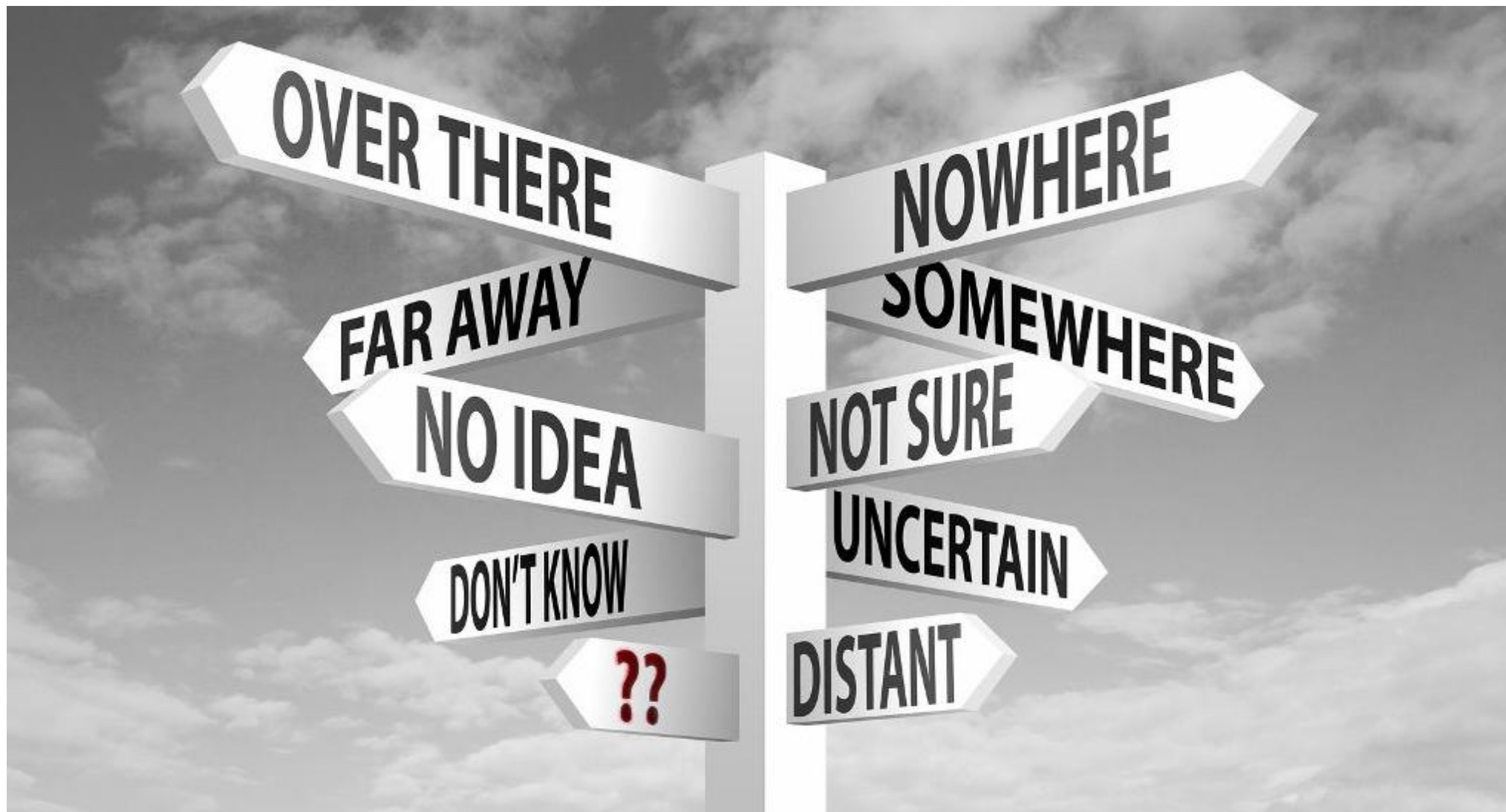
PHARMACOLOGICAL

Complaint: Symptom set: n5

Evidence from literature....

- Outcomes reported only provided an indication that they are effective for hyperacusis.
- Typically evaluated in patients reporting hyperacusis as a secondary complaint or as part of a symptom set
- Recommendations for future work indicated all management options need more evidence and larger studies.





What next?

- **No** standard clinical guidelines
- **No** agreed assessments
- **Firstly...what constitutes hyperacusis**

Defining hyperacusis

Loudness hyperacusis

- is when moderately intense sounds are judged to be very loud.

Pain hyperacusis

- is the experience of pain at much lower sound levels than listeners with normal hearing.

Annoyance hyperacusis

- is a negative emotional reaction to sounds.

Fear hyperacusis

- is an aversive response to sounds that results in an anticipatory response and avoidance.

BSA established definition

“A reduced tolerance to sound(s) that are perceived as normal to the majority of the population or were perceived as normal to the person before their onset of hyperacusis, where “normal” refers to sounds that are generally well tolerated.”

avoidance withdrawal irritability fear altered behaviour

intolerance sensitivity frustration annoyance distress

upset anxiety aversion high stress

TOP 10 RESEARCH PRIORITIES IDENTIFIED!!!!

1. What is the most effective treatment approach for hyperacusis in children?
2. What is the prevalence of hyperacusis in a general population and other specific populations (e.g. people with autism, mental health issues, learning disabilities, hearing loss)?
3. Are there different meaningful types of hyperacusis?
4. What is the essential knowledge/training required for health professionals to appropriately refer or effectively manage hyperacusis?
5. Which treatment approaches are most effective for different types or severities of hyperacusis?
6. Is hyperacusis due to physical or psychological issues or is it a combination of both?
7. Which psychological therapy (e.g. counselling, Cognitive Behavioural Therapy, mindfulness) is most effective for hyperacusis?
8. What management approach for hyperacusis is most effective for adults/children with autism?
9. What is the best way of using sound in therapy for hyperacusis?
10. Which self-help interventions are effective for hyperacusis?

Who experiences hyperacusis?... Adults

	%	UCI	N
Andersson 2002	8.6	19	1147
Fredriksson 2016	18	19	5065
Hannula 2011	17.2	19.9	850
Paulin 2016	9.2	10.2	3406
Paulin 2019	5.5	7.2	856
Ralli 2018	13.8	21.7	109
Fabijanska 1999	15.2	15.9	10349
Yilmaz 2017	5.78	8.1	536
Villaume 2017	25	29.9	348

Weighted average prevalence:
14.2 % (CI = 13.8-14.7)



Who experiences hyperacusis?... Adults

- Being a schoolteacher
- Sensitivity to light or colours.
- Hearing impairment.
- Posttraumatic stress disorder
- Chronic fatigue syndrome
- Generalized anxiety disorder
- Depression
- Exhaustion
- Fibromyalgia
- Irritable bowel syndrome
- Migraine
- Pain
- **Tinnitus.**



Why are some estimates so different?

- Sample size
- Inclusion/exclusions
- Different definitions for hyperacusis
- Different criteria for having hyperacusis or not.
- Different methods used to assess for hyperacusis:
 - Single questions vs questionnaires score

