# Plan Overview

*A Data Management Plan created using DMPonline*

**Title:** Tests for assessing extended high-frequency hearing in humans: a scoping review

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**Affiliation:** University of Manchester

**Template:** University of Manchester Generic Template

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**Project abstract:**

**Objectives:** 1) Identify all tests/methods/tools for assessing extended high-frequency (EHF) hearing or hearing mechanisms in humans, and catalogue their use by study population; 2) determine whether there is sufficient evidence for undertaking a meta-analysis on associations between the various EHF tests, or between EHF tests and other non-audiometric measures.

**Introduction:** There is mounting research interest in EHF hearing, and the assessment thereof, but some potential applications remain unexplored. Summarising what EHF tests/methods/tools have been described to date, which other measures they have been compared to, and which they have not, will facilitate future study in these areas.

**Inclusion criteria:** Peer-reviewed quantitative analytical studies that describe an EHF test/method/tool applied to a human study population will be included. Any published meta-analyses of EHF test association data will also be included. Studies that only include threshold-seeking EHF audiometry (unless accompanying evidence of association with other measures is provided) will be excluded, as this test is already well documented in the research literature. No exclusions will be made based on geographical location, language, publication date or setting.

**Methods:** ComDisDome, MEDLINE (Ovid Online), EMBASE (Ovid Online), and Web of Science will be searched using equivalent strategies to identify all relevant peer-reviewed human studies or meta-analyses published prior to the search date. Two independent reviewers will conduct title/abstract and full-text screening in Rayyan, followed by data extraction using a form in Excel. Data analysis will comprise basic frequency counts of articles, and results will be presented in narrative, tabular, and graphical form.

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**Copyright information:**

# Tests for assessing extended high-frequency hearing in humans: a scoping review

## Manchester Data Management Outline

**1. Will this project be reviewed by any of the following bodies (please select all that apply)?**

- None of the above

**2. Is The University of Manchester collaborating with other institutions on this project?**

- No - only institution involved

**3. What data will you use in this project (please select all that apply)?**

- Generate textual supporting information only

**4. Where will the data be stored and backed-up during the project lifetime?**

- Other storage system (please list below)

OneDrive for Business (University cloud storage)

**5. If you will be using Research Data Storage, how much storage will you require?**

- Not applicable

**6. Are you going to be receiving data from, or sharing data with an external third party?**

- No

**7. How long do you intend to keep your data for after the end of your project (in years)?**

- 5 - 10 years

***Guidance for questions 8 to 13***

**Highly restricted information defined in the Information security classification, ownership and secure information handling SOP is information that requires enhanced security as unauthorised disclosure could cause significant harm to individuals or to the University and its ambitions in respect of its purpose, vision and values. This could be: information that is subject to export controls; valuable intellectual property; security sensitive material or research in key industrial fields at particular risk of being targeted by foreign states. See more examples of highly restricted information.**

**If you are using 'Very Sensitive' information as defined by the Information Security Classification, Ownerships and Secure Information Handling SOP, please consult the Information Governance Office for guidance.**

**Personal information, also known as personal data, relates to identifiable living individuals. Personal data is classed as special category personal data if it includes any of the following types of information about an identifiable living individual: racial or ethnic origin; political opinions; religious or similar philosophical beliefs; trade union membership; genetic data; biometric data; health data; sexual life; sexual orientation.**

**Please note that in line with data protection law (the UK General Data Protection Regulation and Data Protection Act 2018), personal information should only be stored in an identifiable form for as long as is necessary for the project; it should be pseudonymised (partially de-identified) and/or anonymised (completely de—identified) as soon as practically possible. You must obtain the appropriate ethical approval in order to use identifiable personal data.**

**8. What type of information will you be processing (please select all that apply)?**

- No confidential or personal data

**9. How do you plan to store, protect and ensure confidentiality of any highly restricted data or personal data (please select all that apply)?**

- Not applicable

**10. If you are storing personal information (including contact details) will you need to keep it beyond the end of the project?**

- Not applicable

**11. Will the participants' information (personal and/or sensitive) be shared with or accessed by anyone outside of the University of Manchester?**

- Not applicable

**12. If you will be sharing personal information outside of the University of Manchester will the individual or organisation you are sharing with be outside the EEA?**

- Not applicable

**13. Are you planning to use the personal information for future purposes such as research?**

- No

N/A

**14. Will this project use innovative technologies to collect or process data?**

- No

**15. Who will act as the data custodian for this study, and so be responsible for the information involved?**

Dr Garreth Prendergast

**16. Please provide the date on which this plan was last reviewed (dd/mm/yyyy).**

2023-11-10

## Project details

**What is the purpose of your research project?**

The project is a scoping review that aims to:

1. identify all tests for assessing EHF hearing or hearing mechanisms in humans (besides threshold-seeking EHF audiometry) that have been described in the research literature to date, and catalogue their use by study population;
2. document what evidence exists for how EHF hearing tests relate to each other, or other non-audiometric measures, thereby determining whether there is sufficient evidence to be able to perform a quality appraisal and meta-analysis.

**What policies and guidelines on data management, data sharing, and data security are relevant to your research project?**

The University of Manchester Research Data Management Policy
The University of Manchester Records Retention Schedule
The University of Manchester Records Management Policy
The University of Manchester Publications Policy
The University of Manchester IT policies and guidelines
The University of Manchester Intellectual Property Policy

## Responsibilities and Resources

**Who will be responsible for data management?**

Melanie Lough (PhD Student) - PI and data manager
Dr Garreth Prendergast (PhD Supervisor) - data manager
Both the above individuals will be responsible for the screening of, and data extraction from, published journal articles. They will be responsible for storing the resultant data and maintaining records of the scoping review process, ensuring data quality.
Prof Chris Plack (PhD Co-Supervisor) - data manager
Will act as a third reviewer in cases of lack of agreement between M Lough and G Prendergast during article screening.
All will contribute to the final scoping review publication.

**What resources will you require to deliver your plan?**

No cost-associated resources required.

## Data Collection

**What data will you collect or create?**

1. Scoping review protocol (MS Word .docx file). This is stored on contributors' OneDrives but will also be pre-registered via osf.io.
2. Database search strategies in .pdf, or .xlsx format (depending on the database platform export options). These will also be

included in any publication (i.e., as supplemental material or appendices).
3. Record of literature search results, i.e., citations and abstracts. This record will be stored in Rayyan, an online evidence synthesis support platform, but will be exported to MS Excel for storage (.xlsx file) on the PI's OneDrive.
4. Records of published articles screened using inclusion/exclusion criteria (specified in scoping review protocol), indicating whether they were included or not (and why). These will be stored in Rayyan, but will be exported to MS Excel for storage (.xlsx file) on the PI's OneDrive.
5. A timestamped log file of all actions performed during the article screening process, containing details of each action (e.g., including/excluding an article). This will be stored in Rayyan, but will be exported to MS Excel for storage (.xlsx file) on the PI's OneDrive.
6. Full-text .pdf versions of articles included in the scoping review, which will be stored on OneDrives.
7. An MS Excel .xlsx file containing citations of articles included in the scoping review, and information extracted from them (as detailed in the scoping review protocol). This will be stored on M Lough / G Prendergast's OneDrive, but included as a table in any publication.

Estimated total storage volume for the above data is <1 TB.

**How will the data be collected or created?**

Numbers refer to the data specified in the previous section:

1. Already written by the contributors.
2. At the time the searches are conducted, the timestamped search strategies (and number of returned records) will be exported from the respective online platform.
3. Literature search results from four databases will be imported to Rayyan.
4. Created by M Lough and G Prendergast simply through their use of the include/exclude tools within Rayyan.
5. File will be automatically generated for export to Excel by Rayyan.
6. Downloaded to OneDrives via UoM library.
7. M Lough will extract data from included articles and store it within an Excel Spreadsheet. G Prendergast will also do this, but for just 10-20% of the articles in order to validate the data extraction process.

Data quality will be assured by having two independent reviewers of the literature search results (and by the overarching decision of a third reviewer in the case of disagreements). Decisions about inclusion/exclusion will be made blindly using the blinding feature in Rayyan. The recording of timestamped search strategies and their results (2), the timestamped log file (4), and the clear labelling of column headings within .xlsx files (2-5, and 7) will also contribute to data quality.

Data consistency will be achieved through piloting reviewing processes, as per the scoping review protocol, and through the adherence to the JBI methodology for scoping reviews. File names will be sensible and where applicable, version numbers will be included in the file name. Folders will be organised by the different stages of the scoping review.

## Documentation and Metadata

**What documentation and metadata will accompany the data?**

1. No meta-data required.
2. No meta-data required.
3. Supporting documentation will be the scoping review protocol (1, prior to publication), or the final open-access article (once published).
4. In case it is requested via audit, or by author request subsequent to publication, a basic description will accompany the data within M Lough and G Prendergast's OneDrives, which will include who created or contributed to the data, the title, and date of creation. This is not anticipated to be a complex description, as little information will be required to be able to understand the data. The data will also be in a readily-accessible format (Excel Spreadsheet). The search strategies (2) and scoping review protocol (1), which contains comprehensive information on the research context and methods, will be stored alongside. These will be replaced by a link (DOI) to the open-access article once published.
5. No meta-data required. This data item is for personal use by the contributors to support the write up of the scoping review, or in case of queries after publication.
6. No meta-data required. This data item is for personal use by the contributors to perform the scoping review.
7. Supporting documentation will be provided within the final publication.

## Ethics and Legal Compliance

**How will you manage any ethical issues?**

No ethical issues are envisaged - scoping review

**How will you manage copyright and Intellectual Property Rights (IPR) issues?**

Data item 6 will not involve modifying, copying, sharing or re-using published articles.
Any direct use of the content of the reviewed journal articles in the final scoping review will be appropriately referenced.
IPR of newly generated data will be shared between the contributors.
Copyright for any publication arising from this scoping review will be shared between authors.

## Storage and backup

**How will the data be stored and backed up?**

Data items 1, 2, 6 and 7 will be stored on contributors' OneDrives (University of Manchester's OneDrive for Business).
Data items 3-5 will be stored on Rayyan, but exported at regular intervals to contributors' OneDrives to ensure there is a securely stored master copy.
The data are not considered personal or sensitive, and using standard University of Manchester-provided OneDrives means the data will automatically be backed up.

**How will you manage access and security?**

The data held within Rayyan is only accessible to those people the PI assigns to the screening stage of the project (i.e., M Lough and G Prendergast). OneDrives are only accessible to individuals via a password and VPN. If files need to be shared between contributors, this will be done by managing access permissions in OneDrive.

## Selection and Preservation

**Which data should be retained, shared, and/or preserved?**

1. Retained for *at least* six years beyond the date of publication. Accessible to anyone via osf.io
2. Retained for *at least* six years beyond the date of publication. Will be included in open access publication.
3. Retained for *at least* five years beyond the date of publication. Only accessible to M Lough / G Prendergast.
4. Retained for *at least* five years beyond the date of publication. Will be shared with other researchers on reasonable request after scoping review publication.
5. Retained for *at least* five years beyond the date of publication. As stored, it will only be accessible to M Lough, but can be shared with other contributors if required.
6. No requirement for retention beyond publication as citations of included articles will be recorded elsewhere, and full-text articles will be easily available.
7. Retained for *at least* six years beyond the date of publication. Will be published open access.

**What is the long-term preservation plan for the dataset?**

Data items 1, 2, and 7 will be publicly available via osf.io (1) or within an open-access publication (2 and 7), and item 6 does not need to be retained. Therefore, no long-term preservation plan is required for these.
Should the PI leave the University at the end of their course of study (or before the specified retention schedule), data items 3-5 will be transferred to research data storage, organised by the PI's supervisor/s.

## Data Sharing

**How will you share the data?**

The most pertinent data item is number 7, which will be openly accessible within the scoping review publication. Data item 4 (and its associated documentation) and data item 7 (in .xlsx format) will be shared directly with other researchers on reasonable request after scoping review publication. Data item 1 will be publicly available on the osf website.

**Are any restrictions on data sharing required?**

Sharing the data items specified in the above answer is expected to be straightforward, with no difficulties foreseen. After publication, the data items listed above can be made freely (publicly) available with no restrictions.