

# INPLASY

## Hyperbaric oxygen therapy for primary psychiatric conditions: a protocol for a systematic review and evidence map with narrative synthesis

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### ADMINISTRATIVE INFORMATION

**Support** - No external funding.

**Review Stage at time of this submission** - Other - This protocol is registered retrospectively. Prospective registration was not carried out prior to the start of the review because the authors were not familiar with systematic review registration procedures at the time work began.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202650103

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 May 2026 and was last updated on 18 May 2026.

### INTRODUCTION

**Review question / Objective** What is the scope of available human clinical evidence on hyperbaric oxygen therapy for primary psychiatric conditions, and how do study design, HBOT protocol parameters, comparator, outcome measures, efficacy signals, safety reporting, and risk of bias differ across studies?

**Background** HBOT has been examined in various psychiatric settings, yet the evidence base is spread across differing diagnostic categories, pressure protocols, outcome domains, and study designs. Existing literature has not been comprehensively mapped in a way that separates primary psychiatric indications from neurological or medical secondary contexts.

**Rationale** A systematic evidence map with narrative synthesis is warranted to establish the current state of the field, distinguish formal HBOT

( $\geq 2.0$  ATA) from subthreshold hyperbaric exposures, and identify diagnostic areas where controlled trials or focused systematic reviews are needed.

This review will also highlight methodological limitations and gaps in safety reporting, which are underaddressed in the current literature.

### METHODS

**Strategy of data synthesis** Hyperbaric oxygen terms: hyperbaric oxygen, hyperbaric oxygen therapy, hyperbaric oxygenation, HBOT, mild hyperbaric, low-pressure hyperbaric.

Psychiatric terms: PTSD, post-traumatic stress, posttraumatic, depression, depressive disorder, anxiety, insomnia, sleep disorder, substance use disorder, opioid use disorder, addiction, psychiatric disorder, mental disorder.

Database-specific controlled vocabulary (MeSH for MEDLINE, subject headings for Scopus and Web of Science) and Boolean syntax will be adapted for

each source. No language filter will be applied at the search stage

Bibliographic databases: MEDLINE (via PubMed), Scopus, Web of Science Core Collection, and Cochrane CENTRAL. Trial registries: ClinicalTrials.gov and WHO ICTRP.

Additional records were identified through supplementary searching of open bibliographic sources. Citation chasing of included studies and relevant reviews will be conducted, and reference lists will be checked manually.

**Eligibility criteria** Population: Human participants of any age with a primary psychiatric condition, including post-traumatic stress disorder, depressive disorders, anxiety-related conditions, insomnia and sleep disorders, and substance use or addiction-related conditions. Studies focused on neurodevelopmental conditions (including autism spectrum disorder), acquired neurological or brain injury conditions (traumatic brain injury, post-concussion, stroke), or primarily somatic conditions where psychiatric symptoms are secondary (fibromyalgia, chronic pain, long COVID) will be excluded.

Concept: Hyperbaric oxygen therapy administered in a pressurised chamber. For the main HBOT category, a minimum pressure of 2.0 ATA is required. Subthreshold or mild hyperbaric protocols below 2.0 ATA will not be classified as formal HBOT; where directly relevant, they will be mapped separately as contextual evidence. Studies must provide sufficient information to extract at least one clinical outcome and the intervention protocol parameters.

Context: Human clinical settings, with no restrictions on country, care setting, or sex. English-language full text is required for inclusion in the synthesis. Non-English records will be documented at the screening stage but excluded from analysis. Animal or preclinical studies, conference abstracts without accessible full text, and studies in which HBOT cannot be distinguished from a co-intervention will be excluded.

#### Source of evidence screening and selection

Data will be extracted using a standardised form capturing: bibliographic details, country, study design, sample size, diagnostic criteria, population characteristics, HBOT protocol (pressure in ATA, oxygen concentration, session duration, number of sessions, total treatment period), comparator, primary and secondary outcome measures and time points, main quantitative results, safety data, funding source, and author conclusions.

**Data management** One reviewer will perform initial extraction; a second reviewer will independently check all extracted data. Discrepancies will be resolved by discussion, with referral to a third reviewer if consensus is not reached.

#### Reporting results / Analysis of the evidence

Narrative synthesis and evidence mapping, organised by diagnosis or outcome domain and by study design.

Randomised and non-randomised studies will be summarised and tabulated separately.

Studies using HBOT at  $\geq 2.0$  ATA will be presented separately from those using subthreshold or mild hyperbaric protocols.

Quantitative meta-analysis is not planned for this protocol. If a subsequent, focused protocol on a specific diagnosis identifies a sufficient number of methodologically comparable studies, meta-analysis will be considered at that stage.

**Presentation of the results** Tabular summary by diagnosis and study design, accompanied by a narrative evidence map.

**Language restriction** No language restrictions will be applied during database searching. Final inclusion in the synthesis will require English-language full text.

**Country(ies) involved** Turkey.

**Other relevant information** Access to Embase and APA PsycInfo was not available; retrieval of records indexed exclusively in these databases may be incomplete.

**Keywords** hyperbaric oxygen therapy; psychiatric disorders; post-traumatic stress disorder; depression; anxiety; insomnia; sleep disorders; evidence map; systematic review; narrative synthesis.

**Dissemination plans** Results will be submitted for publication in a peer-reviewed open-access journal in the fields of psychiatry, neuroscience, or evidence synthesis. Findings will also be presented at relevant conferences. The registered protocol will be updated upon completion of the review and publication.

#### Contributions of each author

Author 1 - Melike Duman Avci - Conceived the review, designed the protocol, drafted the manuscript, and coordinated the review process. Email: drmelikeduman@gmail.com

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Author 2 - Ahmet Uğur Avcı - Contributed to protocol design, provided clinical and technical expertise on hyperbaric oxygen therapy, and reviewed the manuscript.  
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