trends and statistically significant changes between 2013 and 2021.

**Methods.** ECTAS minimal data set has been published for years 2012/13, 2014/15, 2016/17 and 2021. Number of courses, age, gender, diagnoses, legal status, number of treatments, and score on Clinical Global Impression Scale (CGI) for acute treatments has been analysed for trends and statistical differences.

**Results.** ECTAS data set was not published for the years 2018, 2019 and 2020. In terms of number of courses of treatment per year, 2014/15 was highest with 2148 courses and lowest was in 2016/2017 with 1821 courses. Average number of treatments was 1995 and there was no statistical difference between the years. There was no statistical difference with mean age (61), gender (female 66%), and diagnosis (depression 87.5%). In terms of diagnosis though, there is better documentation of diagnosis in 2021, rather than broad categories such as catatonia used previously, and this has led to schizophrenia as diagnosis in 4% and mixed affective disorder in 5%.

There has been a gradual but not statistically significant trend to increase in treatments per course from 9.3 in 2012/13 to 10.1 in 2021. There is significant increase in number of patients detained at the start of treatment from 42% in 2012/13 to 57% in 2021. Percentage of people in moderate to amongst severely ill categories on CGI at the start has remained the same through the years (mean 96%). CGI at the end of treatment minimal improved to much improved has similarly remained through the year (mean 91%).

The 2021 data set includes subjective memory score with categories showing increases after ECT were 2 ("occasional increased lapses of memory") and the yet milder category of 1.

**Conclusion.** Between the published data sets, there is no statistical difference apart from number of patients commencing ECT under the Mental Health Act. This may reflect increasingly better practice in assessing mental capacity, with a greater tendency to appropriate application of Mental Health Act legal framework ensuring legal safeguards for the patient such as right to appeal and statutory access to second opinion.



## From At-Risk Mental State to Psychosis: Demographic Characteristics and Clinical Corelates of Individuals Who Transitioned to Psychosis

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doi: 10.1192/bjo.2024.112

**Aims.** The at-risk mental state (ARMS) describes individuals at high risk of developing schizophrenia or psychosis. This study aimed at exploring the demographic characteristics of individuals who transitioned to psychosis from a large multicenter factorial design trial.

**Methods.** This was a secondary analysis of large multicenter randomised controlled trial of minocycline and/or omega-3 fatty acids added to treatment as usual for at-risk mental states. Participants (n = 326) were randomised to minocycline, omega-3, combined minocycline and omega-3 or to double placebo for 6 months. The primary outcome was transition to psychosis at 12 months.

**Results.** Forty-five (13.8%) participants transitioned to psychosis. The mean age of participants was 23.31 (5.31 SD) and 15.6% no formal education, 8.9% primary, 48.9% matriculation, 8.9% intermediate and 15.6% graduation and above. Majority 66% of participants were male and 71.1% single, 66.7% living in a joint family, 44.4% were employed, 24% students, 17.8% household/housewife and 3% unemployed. Interestingly 36.8% participants had a family history of psychosis, followed by 21.0% any unknown mental illnesses, 15.8% bipolar disorder, 15.8% depression, 5.3% anxiety and 5.3% intellectual disability. The mean total score for the Prodromal Questionnaire was 8.93, with a standard deviation of 1.67. The mean score on the Comprehensive Assessment for At Risk Mental State (CAARMS) unusual thoughts was 3.98 (SD = 0.84), Non-Bizarre Ideas 3.64 (SD = 0.77), Perceptual Abnormalities 3.76 (SD = 0.71) and disorganized speech 2.49 (SD = 1.12). Participants had mean Social and Occupational Functioning (SOFAS) score of 66.67 which suggests moderate difficulty in social, occupational, or school functioning (e.g., few friends, conflicts with peers or co-workers).

**Conclusion.** Transition to psychosis appears to have different demographic and clinical correlates which may have the causal relationship to transition. The cross-comparative studies are warranted to understand differences and similarities between the groups.



## Isolating and Characterizing the Translatome From Human Alzheimer's Disease (AD) Brains

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doi: 10.1192/bjo.2024.113

**Aims.** Local protein synthesis at the synapse is a key determinant of learning and memory and is predicted to be severely disrupted in Alzheimer's disease (AD). Omics approaches have played a key role in deciphering molecular mechanisms underlying AD pathology. However, isolating the transcriptome may be biased due to inherent variations in transcript levels, or by transcription-on-demand models employed by several genes, whereas mass-spec based proteomics approaches fail to capture low abundance peptides. The translatome bypasses these inherent limitations of other omics methods by capturing actively translating mRNA species trapped inside ribosomes and subjecting them to unbiased RNA-seq analysis capturing even very low abundance transcripts.

**Methods.** Isolating the neuronal ribosomes from human post-mortem brains without interference from non-neuronal cells remains a challenge. We used frozen brain tissue from Alzheimer's patients and healthy controls obtained from the Cambridge Brain Biobank. Synaptoneurosomal fractions were prepared using sucrose gradients in non-denaturing buffers with RNAse inhibitors to preserve ribosomal composition and trapped mRNA. We isolated functional ribosomes on affinity columns following recombinant RNAse digestion. Finally, actively translating ribosome-trapped mRNAs were

sequenced using RNA-seq, aligned to human genome using STAR alignment and analysed for differential expression using DeSeq2 followed by pathway analysis.
**Results.** We have successfully isolated ribosome-associated RNA transcripts in the dendritic spines from cortical neurons of post-mortem Alzheimer's brains with little interference from glial and non-neuronal material. The novel AD translatome disruptions identified by isolating endogenous ribosome bound mRNA will help detect downstream molecular targets. We will also integrate targeted translatome data with published transcriptome and GWAS DNA variant data to identify novel biomarkers.
**Conclusion.** This is the first successful isolation of the dendritic translatome from human postmortem AD brains. Future studies will verify functional significance of key targets using gain- and loss-of-function studies in animal models of AD and human iPSCs.



## Stakeholders' Experience of Postpartum Psychosis Recovery in UK Mother and Baby Units: A Systematic Review and Conceptual Framework

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doi: 10.1192/bjo.2024.114

**Aims.**

- Identify themes in experience of Postpartum Psychosis (PP) recovery in Mother and Baby Units (MBUs) from the perspective of mothers, partners and MBU professionals.
- Develop a Conceptual Framework of recovery from PP in the MBU setting.

**Methods.** Systematic review using published and unpublished literature identified through database searches and grey literature sources. A narrative synthesis approach was taken and used to form a Conceptual Framework of recovery from PP in the MBU setting.
**Results.** Four databases were searched, yielding 8 includable studies. A further 3 grey literature sources met the inclusion criteria. Most of the sources focussed on the womens' experience of recovery.

Stakeholders experienced MBUs as providing a positive therapeutic milieu for recovery. The broad themes identified for improvement encompassed: knowledge of PP, accessibility of services and discharge practises.
**Conclusion.** This review provides valuable insights into the experience of recovery from PP within UK MBUs from the perspectives of multiple stakeholders. Areas for improvement identified include antenatal education on PP, knowledge of PP amongst non-specialist healthcare professionals, partner involvement in care, and discharge processes.

The outcomes of this review have the potential to shape the design, implementation, and expansion of MBUs and their practices both nationally and internationally.



## What Are the Psychological and Behavioural Outcomes of Vagal Nerve Stimulation and Ketogenic Diet in Children and Young People With Drug-Resistant Epilepsy?

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doi: 10.1192/bjo.2024.115

**Aims.** To systematically review current quantitative evidence for psychological and behavioural outcomes for children with drug-resistant epilepsy being treated with either the ketogenic diet (KD) or vagal nerve stimulation (VNS).
**Methods.** The review was conducted with a systematic review methodology and the Preferred Reporting Items for Systematic Reviews (PRISMA) tool. The methodology was developed by the author using the PICOS (population, intervention, comparison, outcome, study, design) framework.

Eligibility criteria included children up to 18 years old with epilepsy treated with KD or VNS, and studies which assessed psychological and behavioural outcomes, with validated tools, before and after treatment. Any quantitative design was included. Review articles, meta-analyses, case studies, and case series without a reported mean were excluded. Searches were conducted in four main databases (GlobalHealth, Medline, PsychInfo, Embase) and two grey literature databases (Scopus, Web of Science).

Duplicates were screened using automated processes and then manually. Titles and abstracts were reviewed against eligibility criteria, followed by full texts. Risk of bias was assessed using tools appropriate for the study (the Risk of Bias-2 tool for randomised controlled trials, the JBI checklist for quasi-experimental studies, and the JBI checklist for case series). Included articles were grouped by intervention and by study design for data extraction.
**Results.** 22 studies were identified: 11 for KD, comprising of two randomised controlled trials, one retrospective quasi-experimental study, one retrospective study, two prospective studies, one cross-sectional survey, and four case series; and 11 for VNS, comprising of one randomised controlled trial, two longitudinal observational studies, one prospective observational study, one retrospective study, and six case series.

These studies included a total of 655 participants (523 KD, 132 VNS). There was weak evidence for an improvement in cognitive and behavioural outcomes with both KD and VNS although most studies had methodological weaknesses and were at risk of bias. For both interventions, some studies showed that improvements in outcomes were not related to improvement in seizures, or to reduction in medications.
**Conclusion.** The evidence base for cognitive and behavioural outcomes following KD or VNS treatment is limited and studies are generally weak and underpowered. Psychological measures used across studies are heterogeneous and difficult to compare. There are little data, but studies raise the possibility that both VNS and KD may affect psychological and behavioural outcomes independently of their effect on seizures. This review supports the need for further research into this area with larger, methodologically robust studies.