Index of ME/CFS Published Research

An A-Z index of the most important published research

30th June 2020
The ME Association
Forward

Welcome to the ME Association Index of Published ME/CFS Research. This is an A-Z index of the most important published research studies and selected key documents and articles, listed by subject matter, on myalgic encephalomyelitis or chronic fatigue syndrome (ME/CFS). It is correct to 30th June 2020.

The Index will be updated at the end of each month and made available in the research section of the ME Association website. Each update will be accompanied by a website blog of that month’s published research abstracts to help keep you informed of the latest research developments.

The Index adopts the subject headings used in the ME Association’s authoritative clinical and research guide which provides a current review of current clinical knowledge and research evidence.

The guide is written by Dr Charles Shepherd, Hon. Medical Adviser to the ME Association and Dr Abhijit Chaudhuri, consultant neurologist at Queen’s Hospital in Romford.

The 2019 edition is still available via Kindle on Amazon. A 2020 edition will be published once the coronavirus lockdown lifts and head office reopens. We are pleased to be able to offer free hard copies to health professionals upon application.

The ME Association are very grateful to Dr Barbara de Barros, Charlotte Stephens, and Russell Fleming, for producing this Index which is proving a very popular and helpful resource.

Please support our vital work

We are a national charity working hard to make the UK a better place for people whose lives have been devastated by an often-misunderstood neurological disease.

If you would like to support our efforts and ensure we are able to inform, support, advocate and invest in biomedical research, then please donate today.

Just click the image opposite or visit our JustGiving page for one-off donations or to establish a regular payment. You can even establish your own fundraising event.

Or why not join the ME Association as a member and be part of our growing community? For a monthly (or annual) subscription you will also receive ME Essential – quite simply the best M.E. magazine in the UK today!
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ME CONNECT
We’re here to help

Do you need to talk?
ME Connect is the telephone helpline service of the ME Association. It provides information and support for people with ME and those who live with or care for them.
ME Connect provides a safe and understanding environment for people with ME so that they know they are being heard and understood.

ME Connect is a member of the Helplines Partnership which promotes high standards.

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every day of the year

“Thank you for being there, you provide a wonderful service”
“MEConnect gave me information, reassurance and the tools to cope”
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If you have a call package for your landline or mobile phone then calls will normally come out of your inclusive minutes.
Please note: Research published after January 2019 (the date of the last update to the MEA Clinical and Research Guide or ‘Purple Book’) is highlighted in purple in the listing below. We will be publishing a 2020 edition of the Guide later in the year once the coronavirus lockdown lifts and head office reopens.

1. Nomenclature and definition


Brurberg et al. (2013) Case definitions for chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME): a systematic review. BMJ Open 4 (2). Link: [https://bmjopen.bmj.com/content/4/2/e003973](https://bmjopen.bmj.com/content/4/2/e003973)


2. Epidemiology


3. Co-morbidity


4. Biomedical Research

4.1 Biobank UK ME/CFS


4.2 Biomarker Landscape Project


4.3 Cardiac Function


Campen CM and Visser FC (2018) The Abnormal Cardiac Index and Stroke Volume Index Changes During a Normal Tilt Table Test in ME/CFS Patients Compared to Healthy Volunteers, are Not Related to Deconditioning, *Journal of Thrombosis and Circulation* 107. Link: [https://tinyurl.com/y5nb9dyr](https://tinyurl.com/y5nb9dyr)

Campen CM et al. (2020) Cerebral blood flow is reduced in ME/CFS during head-up tilt testing even in the absence of hypotension or tachycardia: a quantitative, controlled study using Doppler echography. *Clinical Neurophysiology Practise* [Epub ahead or print]. Link: [https://www.sciencedirect.com/science/article/pii/S2467981X20300044](https://www.sciencedirect.com/science/article/pii/S2467981X20300044)


4.4 Exercise physiology/testing


### 4.5 Gastrointestinal and microbiome


Kenyon J et al. (2019) A Retrospective Outcome Study of 42 Patients with Chronic Fatigue Syndrome, 30 of Whom had Irritable Bowel Syndrome. Half were treated with oral approaches, and half were treated with Faecal Microbiome Transplantation. *Human Microbiome Journal* 13. Link: https://tinyurl.com/y2cqxzgf


4.6 Gene expression


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### 4.6.1 Epigenetics


### 4.7 General reviews


4.8 Genetic predisposition


4.9 Immunology


Groven N et al. (2020) MCP-1 is Increased in Patients with CFS and FM, whilst several other immune markers are significantly lower than healthy controls. *Brain, Behaviour & Immunity-health* [Epub ahead of print]. Link: https://www.sciencedirect.com/science/article/pii/S2666354620300326#


Jonsjo MA et al. (2019) Patients with ME/CFS (Myalgic Encephalomyelitis/Chronic Fatigue Syndrome) and chronic pain report similar level of sickness behavior as individuals injected with bacterial endotoxin at peak inflammation. *Health* [Epub ahead of print]. Link: https://www.sciencedirect.com/science/article/pii/S2666354619300298


4.10 Infection


Asprusten T et al. (2019) EBV-requisitioning physicians’ guess on fatigue state 6 months after acute EBV infection. *BMJ Paediatrics Open* 3 (1). Link: https://tinyurl.com/y39pwy8r


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4.1 Ion channels


4.12 Metabolomics


4.13 Miscellaneous


Thakur V et al. (2020) Protective Effect of Hemin Against Experimental Chronic Fatigue Syndrome in Mice: Possible Role of Neurotransmitters. *Neurotoxic Research* [Epub ahead of print]. Link: [https://tinyurl.com/y8bloc4g](https://tinyurl.com/y8bloc4g)


### 4.14 Mitochondria and energy production


Bohne V and Bohne O (2019) Suggested Pathology of Systemic Exertion Intolerance Disease: Impairment of the E3 Subunit or Crossover of Swinging Arms of the E2 Subunit of the Pyruvate Dehydrogenase Complex Decreases Regeneration of Cofactor Dihydrolipoic Acid of the E2 Subunit. *Medical Hypothesis* [Epub ahead of print] Link: [https://tinyurl.com/y6fbud4a](https://tinyurl.com/y6fbud4a)


### 4.15 Muscle


### 4.16 Neurology: Autonomic nervous system (ANS) dysfunction


Lee J et al. (2020) Clinically accessible tools for documenting the impact of orthostatic intolerance on symptoms and function in ME/CFS. *Work* [Epub ahead of print]. Link: https://content.iospress.com/articles/work/wor203169


4.17 Neurology: Central nervous system and neuroimaging


4.18 Neurology: Hypothalamic and neuroendocrine function


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Mackay A and Tate WP (2018) A compromised paraventricular nucleus within a dysfunctional hypothalamus: A novel neuroinflammatory paradigm for ME/CFS. *International Journal of Immunopathology and Pharmacology*. Link: [https://journals.sagepub.com/doi/10.1177/2058738418812342#articleCitationDownloadContainer](https://journals.sagepub.com/doi/10.1177/2058738418812342#articleCitationDownloadContainer)


4.19 Neurology: Neuropsychology and cognitive function


4.20 Neurology: Neurotransmitter function


### 4.21 Pain


### 4.22 Phenotypes and sub-groups


### 4.23 Post-Exertional Malaise (PEM)


4.24 Post-mortem research


4.25 Sleep disturbance


4.26 Vision


5. Psychiatry and psychology


Thompson et al. (2019) Cognitive factors are associated with disability and pain, but not fatigue among physiotherapy attendees with persistent pain and fatigue. *Physiotherapy* [Epub ahead of print]. Link: [https://tinyurl.com/yyep9zu8](https://tinyurl.com/yyep9zu8)


6. Sociology


Murray R et al. (2019) Duvet woman versus action man: the gendered aetiology of Chronic Fatigue Syndrome according to English newspapers. Feminist Media Studies. Link: https://tinyurl.com/yyfayo7v


7. Future research recommendations


8. Clinical assessment, symptoms, and diagnosis

8.1 General


**8.2 Investigations**


8.3 Physical examination


### 8.4 Symptoms

Pain – see Biomedical Research, 4.21 above.
Post-Exertional Malaise – see Biomedical Research, 4.23 above.
Sleep disturbance – see Biomedical Research, 4.26 above.
Vision – see Biomedical Research, 4.28 above.

### 9. Management

#### 9.1 Cognitive Behavioural Therapy (CBT)


**Geraghty K and Adeniji C (2019) The 'Cognitive Behavioural Model' of Chronic Fatigue Syndrome: Critique of a Flawed Model Health Psychology Open [Epub ahead of print].** Link: [https://tinyurl.com/y6x3g394](https://tinyurl.com/y6x3g394)


Malik S et al. (2020) Cognitive–behavioural therapy combined with music therapy for chronic fatigue following Epstein-Barr virus infection in adolescents: a feasibility study. *BMJ Paediatrics Open* 4 (1). Link: [https://bmjpaedsopen.bmj.com/content/4/1/e000620.abstract](https://bmjpaedsopen.bmj.com/content/4/1/e000620.abstract)


9.2 Complementary and alternative therapies


9.3 Diet and nutrition


9.4 Exercise, Pacing and activity management


Vink M and Vink-Niese A (2020) Graded exercise therapy doesn’t restore the ability to work in ME/CFS. Rethinking of a Cochrane review. *Work* [Epub ahead of print]. Link: [https://content.iospress.com/articles/work/wor203174](https://content.iospress.com/articles/work/wor203174)


9.5 General management


BACME. (2015) British Association for CFS/ME: Therapy and Symptom Management in CFS/ME. Link: [https://www.bacme.info/](https://www.bacme.info/)


Chu L *et al.*. (2020) Environmental accommodations for university students affected by myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). *Work* [Epub ahead of Print]. Link: [https://content.iospress.com/articles/work/wor203176](https://content.iospress.com/articles/work/wor203176)


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9.6 PACE Trial, The


Vink M. PACE trial authors continue to ignore their own null effect. *Journal of Health Psychology* 22 (9): 1134-1140. Link: https://www.ncbi.nlm.nih.gov/pubmed/28805519


9.7 Pharmacological treatment

Almenar-Perez E et al. (2019) Impact of Polypharmacy on Candidate Biomarker miRNomes for the Diagnosis of Fibromyalgia and Myalgic Encephalomyelitis/Chronic Fatigue Syndrome:


**Bolton MJ et al.** (2020) Low-dose naltrexone as a treatment for chronic fatigue syndrome. *BMJ Case Reports* 13 (1). Link: https://casereports.bmj.com/content/13/1/e232502


**Dunn KM and Hay EM.** (2010) Opioids for chronic musculoskeletal pain. *BMJ* 341: 467-468. Link: [http://www.bmj.com/content/341/bmj.c3533](http://www.bmj.com/content/341/bmj.c3533)


Van Campen LMC and Visser FC (2019) The Effect of Curcumin in Patients with Chronic Fatigue Syndrome/Myalgic Encephalomyelitis Disparate Responses in Different Disease Severities. *Pharmacovigilance and Pharmacoepidemiology* 2 (1). Link: [https://tinyurl.com/qpvhgdm](https://tinyurl.com/qpvhgdm)


9.8 Pregnancy


10. Prognosis and quality of life

10.1 Age


10.2 Mortality


### 10.3 Prognosis and recovery


10.4 Quality of life


### 10.5 Severe ME


### 11. Vaccinations


12. Children and adolescents


Ascough C et al. (2020) Interventions to treat pain in paediatric CFS/ME: a systematic review. *BMJ Paediatrics Open* 4 (1). Link: https://bmjpaedsopen.bmj.com/content/4/1/e000617


Collin SM, et al. (2015) Chronic fatigue syndrome (CFS) or myalgic encephalomyelitis (ME) is different in children compared to in adults: a study of UK and Dutch clinical cohorts. *BMJ Open* 5(10): e008830. Link: http://bmjopen.bmj.com/content/5/10/e008830


Crawley E and Sterne JAC. (2009) Association between school absence and physical function in paediatric chronic fatigue syndrome/myalgic encephalopathy. *Archives of Disease in Childhood* 94(10): 752-756. Link: http://adc.bmj.com/content/94/10/752.info


Haig-Ferguson A, et al. (2009) Memory and attention problems in children with chronic fatigue syndrome or myalgic encephalopathy. *Archives of Disease in Childhood* 94(10): 757-762. Link: http://adc.bmj.com/content/94/10/757.info


Harland MR et al. (2019) Paediatric chronic fatigue syndrome patients’ and parents’ perceptions of recovery. *BMJ Paediatrics Open* 3 (1). Link: https://bmjpaedsopen.bmj.com/content/3/1/e000525


Loades ME et al. (2020) Do adolescents with Chronic Fatigue Syndrome (CFS/ME) and co-morbid anxiety and/or depressive symptoms think differently to those who do not have co-morbid psychopathology? *Journal of Affective Disorders* [Epub ahead of print]. Link: https://www.sciencedirect.com/science/article/pii/S0165032719334561

Loades ME et al. (2020) Sleep Problems in Adolescents With CFS: A Case-Control Study Nested Within a Prospective Clinical Cohort. *Clinical Child Psychology and Psychiatry* [Epub ahead of print]. Link: https://tinyurl.com/ybmsmyvd


Neale FK et al. (2019) Illness duration, mood and symptom impact in adolescents with chronic fatigue syndrome/myalgic encephalomyelitis? Archives of Disease in Childhood [Epub ahead of print]. Link: https://adc.bmj.com/content/early/2019/06/13/archdischild-2018-316720.long


Norris T et al. (2017) Natural course of chronic fatigue syndrome/myalgic encephalomyelitis in adolescents. *Archive of Diseases in Childhood* doi: 10.1136/archdischild-2016-311198. Link: [http://adc.bmj.com/content/early/2017/01/19/archdischild-2016-311198](http://adc.bmj.com/content/early/2017/01/19/archdischild-2016-311198)


Oliver L and Patel K. (2012) Co-morbid conditions in children with chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) – a retrospective case note review of a large cohort. *Archives of Disease in Childhood* 97(Supplement 1): A105. Link: [http://adc.bmj.com/content/97/Suppl_1/A105.1](http://adc.bmj.com/content/97/Suppl_1/A105.1)


Solomon-Moore E et al. (2019) Physical activity patterns among children and adolescents with mild-to-moderate chronic fatigue syndrome/myalgic encephalomyelitis. *BMJ Paediatrics Open* 3 (1). Link: [https://bmjpaedspen.bmj.com/content/3/1/e000425](https://bmjpaedspen.bmj.com/content/3/1/e000425)


13. Government Documents

13.1 Disability support


13.2 Economic cost to the UK


### 13.3 General reports, debates, and statements

**All-Party Parliamentary Group on ME.** (2020) Inaugural meeting to re-establish APPG led by Carol Monaghan MP with Dr Charles Shepherd and the MEA providing secretariat. Link: https://www.meassociation.org.uk/2020/01/the-all-party-parliamentary-group-on-me-to-re-convene-please-invite-your-mp-to-attend-09-january-2020/


**House of Commons (2019) Debate.** 11 February col. 517W. Secretary of State re: ME/CFS WHO classification. Link: https://publications.parliament.uk/pa/cm201213/cmhansrd/cm130211/text/130211w0003.htm#13021150000045

**House of Commons (2013).** Written evidence to Health Select Committee from the ME Association. Link: https://publications.parliament.uk/pa/cm201415/cmselect/cmhealth/401/401vw11.htm


14. Healthcare


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