

# For the non-believers

This excellent summary of the scientific evidence for M.E. was shared on Twitter by Research Scientist, Dr Mark Guthridge.

M.E. patients face disbelief that they are sick. Many are told that they are simply tired, stressed, anxious, depressed, lazy or malingering. How can people with M.E. respond to such disbelief and lack of understanding?

Below are seven evidence-based scientifically supported findings that you can use to inform those who don't understand that M.E. is a multi-organ, systemic and severely debilitating illness.

These findings demonstrate that M.E. patients have a range of biochemical impairments that are:

- a) simply not possible to fake
- b) not due to deconditioning
- c) not due to depression.



1. People with M.E. have deficiencies in three organs important for the body's hormonal balances called the hypothalamic-pituitary-adrenal axis. Importantly, the deficiencies observed in M.E. patients are quite different to that seen in depression.
2. Cognitive problems are widely observed in M.E. where the brain's ability to process information is slowed and memory is impaired. Importantly, the impairments are simply not consistent with the presence of psychiatric disorders.
3. The latest fMRI imaging findings show that the brains of people with M.E. have different responses to auditory/visual challenges, and in memory. M.E. patients also have altered connectivity between different brain regions, possibly explaining why they have cognitive impairment.
4. The latest brain imaging studies also demonstrate that people with M.E. have widespread brain inflammation (neuroinflammation) and increased brain lactate. Spinal fluid in M.E. also contains increased levels of proteins involved in tissue injury and repair.
5. It's not complicated! People with M.E. lack "energy" because their cells have a problem generating (and/or possibly using) energy from oxygen (aerobic metabolism), sugars (anaerobic metabolism), lipids (fatty acid oxidation) and amino acids.
6. Many studies have reported that M.E. patients have immune problems. For example, blood levels of proinflammatory signalling proteins (cytokines) are significantly higher in people with M.E. and, the sickest patients have the highest levels of cytokines in their blood.
7. Lastly, multiple studies have shown that with exercise, people with M.E. become sicker, they have increased levels of proinflammatory cytokines, have a lower heart rate, blood pressure and have lower aerobic metabolism.

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Mark provides this summary from a review by Anthony Komaroff, MD, a professor at Harvard Medical School, in JAMA, an international peer-reviewed general medical journal. To read the full review, visit [tinyurl.com/jamacfs](http://tinyurl.com/jamacfs)