



WHAT CAUSES ME/CFS?

This is a three-stage disease-causing hypothesis that is based on predisposing, precipitating and perpetuating factors.

The explanation covers key facts on what we already know about these three aspects of causation and the many uncertainties that still exist.

PREDISPOSING FACTORS

There appears to be a genetic predisposition to developing ME/CFS - as occurs in some other serious medical conditions.



PRECIPITATING FACTORS

- Viral infections+++
- Other infections
- Other immune-system stressors such as vaccinations
- Sometimes no obvious trigger

Physical or mental stress at the time of a triggering event may act as a co-factor.



PERPETUATING FACTORS

Research evidence indicates that this could involve a complex interaction involving the nervous and immune-systems and the way in which the body creates energy.

Involvement of the microbiome is also possible.

MICROBIOME AND THE GUT-BRAIN AXIS

Disturbances to the composition of organisms that inhabit the gut and their effect on immune-system responses could also play a role.



ON-GOING IMMUNE-SYSTEM ACTIVATION

Is there an on-going production of cytokines - immune-system chemicals that produce flu-like symptoms in response to an infection?

Can this cause low-level inflammation in parts of the central nervous system?



SYMPTOMS:

- Sore throats
- Enlarged glands
- Flu like feelings



CARDIOVASCULAR SYMPTOMS

- Orthostatic intolerance
- PoTS/Postural orthostatic tachycardia syndrome
- Postural hypotension
- Cold hands and feet



BRAIN AND NERVOUS SYSTEM

AUTONOMIC NEVOUS SYSTEM CONTROL CENTRES

IRRITABLE BLADDER SYMPTOMS



POSSIBLE INVOLVEMENT OF:

- Brain stem
- Basal ganglia
- Neurotransmitters such as dopamine
- Brain stem hypoperfusion/ decreased blood flow
- Ion channel dysfunction



COGNITIVE DYSFUNCTION

- Problems with short term memory, concentration, attention span
- Problems with balance
- Alcohol intolerance
- Sensitivity to light and sound



MILD HYPOCORTISOLAEMIA SYMPTOMS

- Fatigue
- Muscle and joint pain
- Bowel symptoms
- Low blood pressure
- Important to exclude Addison's disease

HYPOTHALAMIC-PITUITARY-ADRENAL AXIS

An important brain-hormone (adrenal glands) pathway that appears to be affected in ME/CFS.

SYMPTOMS

- Problems with temperature control
- Disturbed sleep
- Appetite changes



MUSCLE AND MITOCHONDRIAL DYSFUNCTION

Mitochondria are important cellular structures that are involved in energy production and there is evidence of mitochondrial dysfunction.

SYMPTOMS

- Activity induced fatigue
- Pain
- Post-exertional malaise

