

CFS

Up to **30%** of the population suffers from **fatigue** and **symptoms of exhaustion** at times, with women being affected significantly more often than men. Mostly people between the **ages of 25 and 44** are affected. **Chronic fatigue syndrome (CFS)** must be distinguished from this. CFS has a prevalence of around 1.0% [3]. About 17 to 24 million people worldwide suffer from CFS [4]. The disease is divided into four severities. Advanced clinical symptoms (grade III and IV) often lead to confinement to bed.

MAIN SYMPTOMS

- long-lasting mental and physical exhaustion
- the condition barely improves with rest
- significant impairment of work and performance capacity
- mostly unable to work, partly confined to bed or wheelchair
- physical collapse with severe dysfunction of the neuro-immuno-endocrinological systems

CAUSES AND PATHOGENESIS

- the causes are largely unclear
- complex neuro-immunological disease
- association with viral or bacterial infections suspected
- stress
- alterations in the cellular system
- alterations in Trp metabolism: increased kynurenine formation + accumulation of neurotoxic metabolites
- with fructose malabsorption: loss of Trp due to complex formation → serotonin deficiency
- mitochondrial dysfunction
- possible exposure to heavy metals

THERAPY

- **regulate tryptophan and catecholamine metabolism (depending on the report)**
 - amino acids (Trp, Phe, Tyr)
 - melatonin
 - griffonia, curcumin, quercetin, indole-3-carbinol, passionflower
- **compensating for nutrient deficiencies**
 - cofactors like vitamin B1, B3, B6, B9, B12, D
 - cofactors like magnesium, selenium, zinc, copper, ...
- **methyl group donors, especially SAM**
- **eliminate inflammations and ROS**
 - omega-3 fatty acids, vitamin C, E
- **treat mitochondrial dysfunction and RNS**
 - coenzyme Q10, NADH, vitamin B12, L-carnitine, ...
- **additional phytotherapeutics such as ashwagandha or balm**
- **other general approaches:**
 - stress reduction
 - sleep hygiene
 - regular physical activity
 - alkaline-rich, lacto-vegetable diet for deacidification
 - reduce or avoid alcohol, nicotine, caffeine, and simple sugars

DIAGNOSTICS

LASSEN SIE
FOLGENDES
UNTERSUCHEN

SF640A CFS BASIC PROFILE

Material: T928

Catecholamine metabolism

- D, NA, A + precursors (Phe, Tyr)

Tryptophan metabolism

- Trp, serotonin
- important metabolites and enzymes

Relevant cofactors

- vitamin B3, B6 (cystathionine), B12 (MMA)
- BH4 (tetrahydrobiopterin)

Methylation capacity

- methyl group donors (SAM, betaine, choline)
- methylation activity (SAM/SAH)

Mitochondrial dysfunction (screen)

- lactate, pyruvate + ratio
- citrate, suberate
- NO formation (citrulline)
- fatty acid metabolization (L-carnitine)

Immune activation

- neopterin

Intestinal factors influencing inflammation

- TMA, TMAO
- bacterial uremic metabolites

SF640B CFS MIDI PROFILE

Material: T923, T928, 2EDTA, Hep, S

In addition to the Basic Profile:

Other tryptophan metabolites

- melatonin

Other cofactors

- vitamin B9, D3, Q10
- magnesium, copper

Antioxidant minerals

- zink, selenium

Vascular protective factors

- fatty acid status (omega-3/omega-6 fatty acids)

SF640C CFS COMPLETE PROFILE

Material: T923, T928, 2EDTA, Hep, S

In addition to the Midi Profile:

Other neurotransmitters:

- GABA, glutamate

ADDITIONS:

In s/o food intolerances

- C044 PreScreen B
- B180 wheat germ agglutination
- B120 fructose malabsorption – breath test
- B110 lactose intolerance – breath test
- B130 sorbitol malabsorption – breath test

DIFFERENTIAL DIAGNOSTICS

■ Fatigue

- diabetes → G400 blood sugar, HbA1c
- iron deficiency → G612 small blood count, Fe (s), transferrin, transferrin saturation
- anaemia → D160 complete blood count
- hypothyroidism → F200 TSH, fT3, fT4
- liver function → G200 small blood count, yGTP, GPT, GOT, AP, cholinesterase, total bilirubin, LDH
- kidney function → G335 creatinine

■ selenium supply

- E132 selenoprotein P
- E134 selenoprotein p autoantibodies

■ latent viral or bacterial infections and autoantibodies

- SF642 viral CFS reactivation screen
- SF644 CFS autoantibody screen
- K111 Borrelia AB IgM and IgG
- K121 Borrelia Fluorescence ELISpot

■ irritable bowel symptoms

- see irritable bowel profiles SA710A, SA710B, SA710C