

Transcript, November 15, 2018 <https://tinyurl.com/yd34xmgY>

Hello I'm Dr. David Kaufman. I have an office in Mountain View, California. I am a board-certified internist overseeing the care of patients with chronic, complex diseases that include ME/CFS. Myalgic encephalomyelitis or ME is a chronic, multisystem disease that affects approximately 1.3 million Americans. It's often called chronic fatigue syndrome or ME/CFS. Many patients prefer the term ME. It affects the brain and the autonomic nervous system, the cardiovascular system, the gastrointestinal system, and the immune system.

Onset and Risk Factors

80% of patients report first developing the symptoms of ME after an acute viral or bacterial infection. Common triggers include herpesviruses including EBV, CMV, and HHV6 as well as enteroviruses such as coxsackie B.

Bacterial infections have also been linked to ME/CFS onset. However, infection isn't the only trigger. Non-infectious immune challenges such as anesthetics; physical trauma like surgery, concussion or car accidents; or even chemical exposure can also lead to ME. There may be genetic risk factors as well. Having a first degree relative with the disease more than doubled an individual's chance of developing it themselves. While ME is more common in women and adults there are hundreds of thousands of men and children in the United States with ME. According to the National Academy of Medicines 2015 report, for a clinical diagnosis of ME, patients must have the following symptoms:

1. A substantial reduction or impairment and ability to engage in pre illness activity that persists for six months or more.
2. Fatigue that is profound, not lifelong, not the result of ongoing exertion and not alleviated by rest.
3. Post-exertional malaise or PEM in which physical and mental activities result in immediate and/or delayed exacerbation of symptoms and a prolonged reduction in functioning with a marked increase in recovery time.
4. Unrefreshing sleep and either cognitive impairment and/or orthostatic intolerance.

These core features of illness must be moderate to severe and present at least 50% of the time.

Understanding PEM

Post exertional malaise or PEM is the most distinctive symptom that can help differentiate ME from other diseases. PEM is a worsening of all symptoms after sustained physical or cognitive effort and is often delayed by 8, 24, or even 48 hours post-exertion.

Patients will often refer to this as crashing. During a crash all of the patient's symptoms may worsen, and symptoms that are mild or not usually present when the patient is not at baseline may appear. After a crash it can take days, weeks, or even months to return to the previous baseline. It may even permanently worsen a patient's condition. We heard that after Jen walked from the neurologist's office to her house, she never fully recovered. That's a common story.

Using Cardiopulmonary exercise testing or CPET

Post exertional malaise has objectively been shown to be associated with impaired aerobic energy metabolism and a lowered anaerobic threshold and orthostatic stress. The amount of physical or cognitive exertion a patient can sustain will vary over time and from patient to patient. As you heard in the film, this is a spectrum illness. Some patients will crash only after walking a mile or spending a day at work while other patients can crash simply from sitting up in bed or brushing their teeth.

Understanding Cognitive Dysfunction

Often called brain fog, some patients may have the sensation of suddenly not knowing where they are or getting lost in their own neighborhood. Others may have trouble finding words or remembering what they were saying. It may be helpful to ask patients how their current cognitive ability compares to what they used to be able to do.

Orthostatic intolerance is the inability to regulate blood pressure and/or heart rate while upright. Most common types of OI found in ME patients are Neurally-Mediated Hypotension or NMH and Postural Orthostatic Tachycardia or POTS. Symptoms may include dizziness, weakness, heart palpitations, and increased brain fog when standing or walking. Orthostatic Intolerance can be confirmed by a tilt table test. However, you can easily perform a poor man's tilt table or NASA 10 minute lean test right in your own office. Have the patient lie still for at least 10 minutes and measure their blood pressure and heart rate. Then have the patients stand and lean against a wall. The blood pressure, heart rate, and any

symptoms are measured every 60 seconds. If on standing, the patient's heart rate increases by over 30 beats per minute, they may have POTS, and if their systolic blood pressure drops by over 25 millimeters of mercury, they may have NMH. In addition, many patients will become dizzy, weak, and extremities may even turn blue or mottled.

Other Common Symptoms

There are two other diagnostic tools: the Canadian Consensus Criteria and the International Consensus Criteria, which are commonly used. These criteria include other symptoms that may not appear in all patients, but are also quite common. Pain in the muscles and or joints; headaches of a new type, pattern, or severity; neurological and cognitive symptoms such as confusion, difficulty retrieving words, poor working memory, spatial instability and disorientation; a sensitivity to light, sound or vibration, taste, odor, and even touch; muscle fatigability, weakness and fasciculations, poor coordination, and ataxia; gastrointestinal symptoms such as nausea or abdominal pain; autonomic and endocrine symptoms such as poor temperature regulation, cold or heat intolerance; immune symptoms such as tender lymph nodes, recurrent sore throats, fevers or flu-like symptoms, food or chemical sensitivities.

Comorbidities

Some of the most common comorbid conditions include Fibromyalgia; primary sleep disorders; postural tachycardia syndrome (POTS); Hypermobility; Ehlers-Danlos syndrome; mast cell activation disorder; small intestine bacterial overgrowth, which is often misdiagnosed as irritable bowel syndrome; secondary depression; Celiac disease; and allergies. Lab work will often reveal abnormal auto antibodies, such as thyroid peroxidase antibodies as seen in Hashimoto's thyroiditis, and antibodies to alpha adrenergic, beta adrenergic, and muscarinic cholinergic receptors, which are often found in patients with dysautonomia. Some patients will have markers of immune deficiency, such as IgG subclass deficiencies and B cell or CD19 deficiencies, and virtually all patients will have a low natural killer cell function.

The Spectrum

On average, ME/CFS patients have a lower quality of life score and a greater disability than patients with a host of other serious diseases, including diabetes, colon cancer, multiple sclerosis, and chronic renal failure. However, patients exist along a spectrum. 25% of patients with ME have symptoms severe enough that

they are homebound or bed bound. Those who are very severe may be unable to sit up or feed themselves. They have extreme sensitivity to noise, light, and touch and may need to be tube fed. You may never see these patients in your practice because they are simply too ill to seek medical care. On the other end of the spectrum, 25% are still able to work and may outwardly appear normal, but require extensive rest and recovery from their day-to-day activities. It's important to understand this spectrum as severe patients can improve over time, but mildly affected patients can also get worse. This is why the early diagnosis and pacing of activity are so important. In addition to wide variability between patients, an individual patient's functioning can vary day to day and week to week. The snapshot you see in a typical office visit can be very misleading.

Prognosis and Recovery

While recovery is possible, it is important to avoid implying that recovery is a matter of effort or positive attitude. There is no cure for ME and only 5% of adults with the condition will make a full recovery. However, patients can improve over time and there's a lot you can do to help improve the quality of life.

What are some treatments and management techniques for ME?

Pacing is the practice of maintaining activity within the patient's individual safe range--what patients refer to as their "energy envelope." Pacing can help prevent crashes. There are many different ways to approach pacing. Counting steps and monitoring heart rate can be very helpful. Another approach involves asking patients to estimate their cognitive and physical activity on a usual day, and then having them reduce that activity by 25%. So, for example, if a patient usually reads for an hour, they might reduce that time to 45 minutes. Breaking up major activity into chunks and planning restful breaks in-between can also be very helpful. Because PEM is typically delayed, it can be challenging to determine which activity precipitated the crash. For this reason, many patients find it useful to maintain a symptom and medication diary.

Graded Exercise Therapy

It is important to know that previous treatment recommendations for ME have included graded exercise therapy. New research has compared patients with ME to deconditioned sedentary controls and found that in ME patients activity induces a pattern of gene expression, inflammation, and metabolic dysfunction that cannot be explained simply by deconditioning, and may be unique to people with ME. The evidence base for graded exercise was found by the National

Academy of Medicine to be lacking, and graded exercise is no longer recommended by the Centers for Disease Control. Moreover, many patients report that exercise can make their condition worse.

Pain and Sleep

For patients with pain, drugs such as NSAIDS, including Celecoxib, Low Dose Naltrexone, and even Tramadol may be useful.

Most patients with ME have disordered sleep. Good sleep hygiene practices may help. Sleep medications may also be useful. Patients often find that if they're able to sleep well, other symptoms may improve.

Orthostatic intolerance

Patients with orthostatic intolerance should make sure to increase their water intake to at least two liters a day, and increase their electrolytes.

Drugs for orthostatic intolerance such as beta blockers for POTS, fludrocortisone and midodrine, or pyridostigmine may also be helpful. IV saline may also improve symptoms.

Start low and go slow with all new medications. ME patients are often remarkably sensitive and can have paradoxical reactions to drugs.

Other Ways To Support Patients

Pay attention to the specific symptoms your patient reports as affecting their quality of life. In addition to help with sleep, pain, or orthostatic intolerance they may require help with digestion, respiration, or their immune systems.

Patients with sensory sensitivities are often helped by earplugs and eye masks or sunglasses. Use of wheelchairs and handicap parking stickers may help reduce episodes of post exertional malaise.

Patients with ME/CFS may also need support in obtaining disability benefits and accommodations in school or at work. Medical providers can help by providing the documentation necessary to obtain such support.

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome is a complex, often life-long illness. However, with thoughtful diagnosis and a careful search for comorbid conditions, physicians can make a huge difference in the lives of these patients.

For more information, visit Meaction.Net or AMWA-doc.org