

Therapy Providers,

We recognize the challenges of treating patients with Long COVID and appreciate that you are an important part of the treatment team for these patients. It is with concern for the safety of patients that we are sending this message. Below is important information about **Post-Exertional Malaise (PEM)**, which can significantly impair recovery and quality of life for these patients.

This email includes definitions, screening tools, physical examination information, treatment guidelines, and patient resources. We realize that this is a lot of information to review, but it can help patients significantly. If you have questions in the future about a specific patient referral, please reach out to the COVID clinic or Clayton Powers, DPT as needed.

Post-COVID patients come in two groups. The first were severely ill and were typically hospitalized and may have been intubated. This population will have deconditioning and slow graded exercise can help. In contrast, patients with Long COVID (long haulers, etc.) were typically not hospitalized and had mild to moderate illness initially.

If you are treating patients with Long COVID, it is **imperative** that you inform yourself regarding the management of **Post-Exertional Symptom Exacerbation (PESE)**, also called **Post-Exertional Malaise (PEM)**.

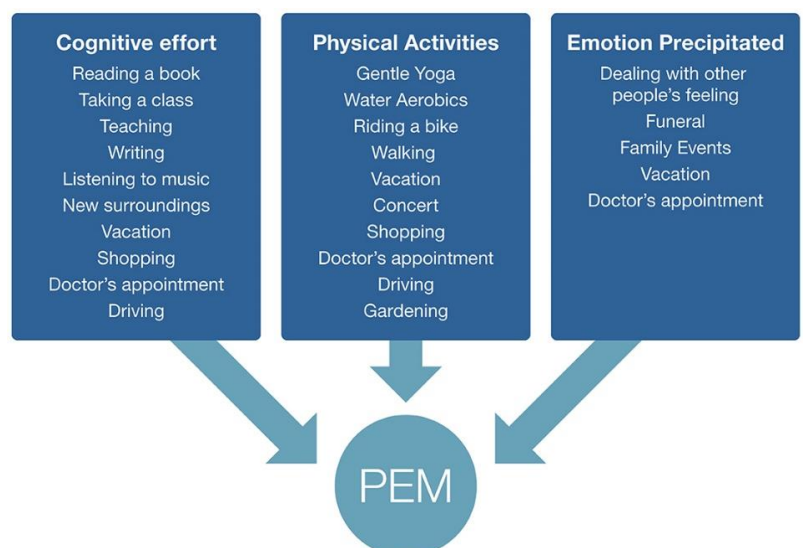
PEM is a worsening of symptoms after cognitive, emotional, or physical exertion. It can manifest 24 to 48 hours after the exertion. It is **not** caused by deconditioning and **does not** respond to graded exercise. Graded exercise, defined as fixed incremental increases in frequency, duration, or intensity of physical activity, is **contraindicated** in patients who experience PESE/PEM. Even if the referral states, "deconditioning," **do not** prescribe exercise until you have screened the patient for PESE/PEM.

Dimensions of post-exertional malaise



Source: DSQ-PEM, 2018

ME-pedia.org

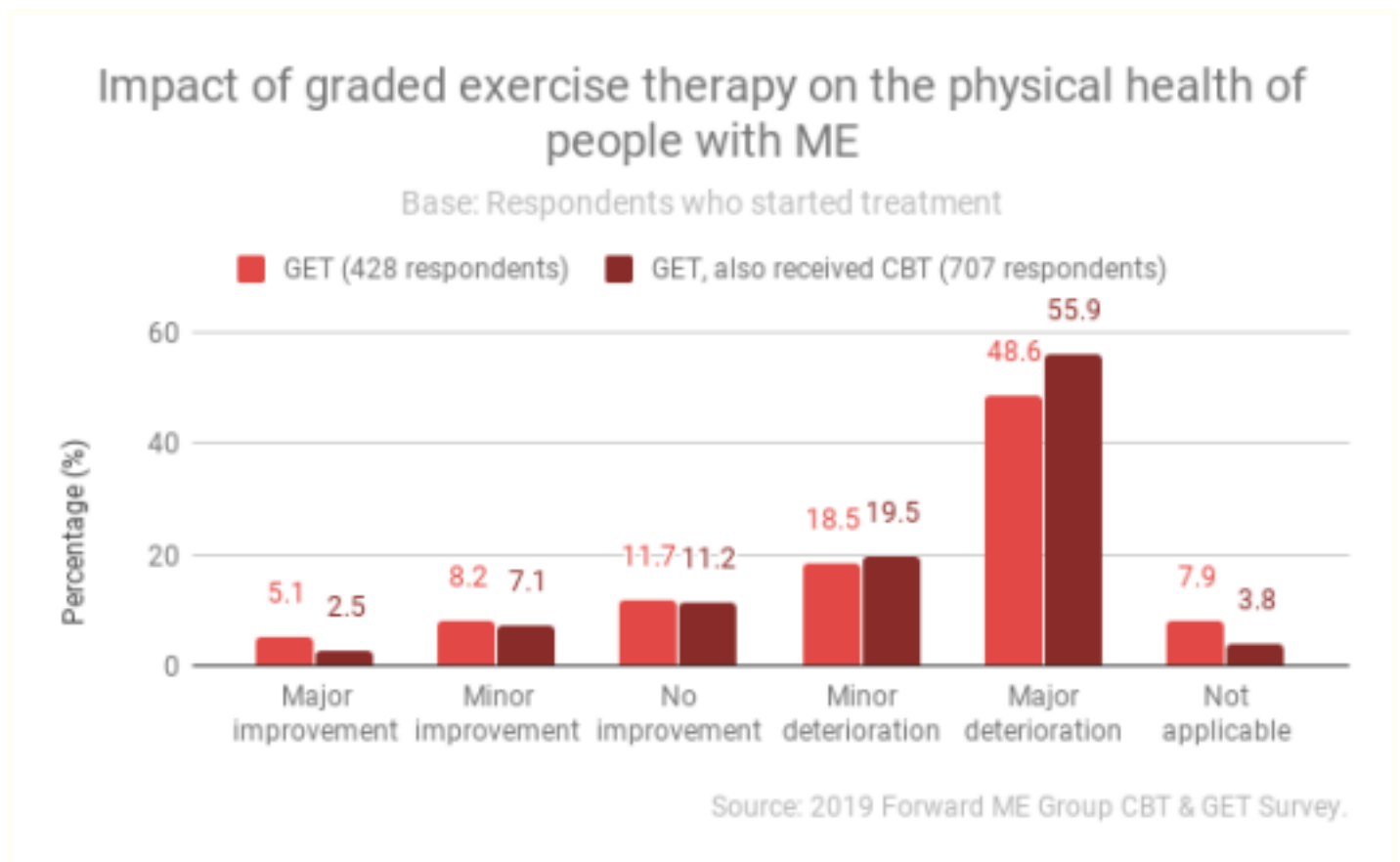


Source: <https://doi.org/10.3389/fneur.2020.01025>

Common symptoms of PESE/PEM include:

- Disabling fatigue/exhaustion
- Cognitive dysfunction or “brain fog”
- Pain
- Breathlessness
- Heart rate variation
- Sleep disturbance
- Fever
- Swollen lymph nodes
- Exercise intolerance
- Orthostatic intolerance
- Temperature dysregulation

If the patient has PESE/PEM, **do not** encourage the patient to gradually increase their physical activity with advice like, "start by walking or riding a stationary bike for 3-5 minutes and gradually increase the duration over time." This will **not** help and can lead to increased symptoms and/or **harm** to the patient.



Patients with PESE/PEM require a unique approach to therapy. These patients utilize the lactic acid system more frequently for energy production as their body has difficulty producing enough cellular energy/ATP to maintain even basic activities of daily living. Prescribing aerobic exercise or graded exercise, when they experience PESE/PEM, can lead to excess production of lactic acid, systemic inflammation, and/or reactivation of latent viruses. This will delay their recovery, can cause **damage** to multiple bodily systems, and can lead to deeper crash cycles.

Some of the most effective treatments for these patients are education on **PEM/PESE, activity pacing, energy conservation, and breathing exercises.**

Pacing will increase the patient's aerobic capacity **more effectively** than graded or aerobic exercise. Using a heart rate monitor set to alert the patient at 55-60% of heart rate max can be a useful tool to help patients to pace their activities and stay out of the lactic acid system during activities. There are a number of different heart rate monitors and apps that can aid patients in pacing. The best types will alert the patient immediately when they surpass the heart rate threshold you set with them.

Attached to this email are resources for managing patients who experience PEM/PESE.

For more resources on Long COVID, ME/CFS, or POTS, please contact Clayton Powers, DPT at clayton.powers@hsc.utah.edu.

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