



## Post-COVID Lung Symptom Case Study

### HISTORY

The patient, a 62 year old male, began noticing breathing difficulty after his release from the hospital for which he had been admitted for COVID. Over the past 16 months his symptoms included shortness of breath, mild wheezing, and a feeling that he had to “push to breathe.” He reports that walking from our clinic’s parking lot to the treatment room left him out of breath. He notes that at the gym he had to take a break after only 5 minutes of exertion.

### TREATMENT

At the initial appointment the patient was evaluated with a SpiroLink Smart Spirometer (CMI Health, Inc., Alpharetta, GA).

#### Pre-treatment Spirometer scores were as follows:

Peak Expiratory Flow (PEF) – 77 L/min

Forced Expiratory Volume (in the first second) (FEV1) – 1.07 L

Forced Vital Capacity (FVC) – 2.21 L

The patient received 2 treatments over the course of 10 days with the Firefly Clinic Pro light therapy device (Bales Photonics Inc., San Diego, CA). The Firefly was set to output 8 simultaneous wavelengths of light (3 of blue, 3 of red, and 2 of Infrared) for a total continuous output power of 66,860 mW. The treatment was administered over the anterior aspect of his lungs for a duration of 5 minutes per treatment. The total amount of energy delivered was 20,058 Joules.

### RESULTS

The patient was reevaluated five days after his second Firefly treatment and reported that he was no longer was out of breath after the walk from the parking lot to the treatment room. The shortness of breath, mild wheezing, and the feeling of having to “push to breathe” have all subsided. At the gym, he notes that he now only needs a break after 30 minutes of exertion. After three more 5-minute Firefly sessions, the patient reports he can now exercise for 60 minutes before needing rest.

#### Post treatment Spirometer scores were as follows:

PEF – 138 L/min, FEV1 – 2.02 L, FVC – 3.04 L

**ANALYSIS OF DATA: PEF – Increase of 79.2% | FEV1 – Increase of 88.8% | FVC – Increase of 37.6%**

### CONCLUSION

The improvements in lung function were obtained quickly in terms of number of treatments administered and duration of each treatment. This is thought likely due to the continuous high output power and multi-spectral light emission from the Firefly Clinic Pro. These both allow for great permeation depth which is needed when administering therapy to lung tissue. Firefly Light Therapy™ appears to aid in healing lung tissues for this patient suffering from post-COVID lung damage.

**Further study on a larger population is clearly warranted. If you or your patients would like to be a part of this study and live in the Orange County, CA area please contact Dr. Martin Bales at [martin@balesphotonics.com](mailto:martin@balesphotonics.com).**