The effects of pulmonary rehabilitation in cystic fibrosis are well documented, but the effectiveness of interval exercise training remains unexplored. The aim of this study was to investigate whether interval exercise (IE) could be as beneficial as continuous exercise (CLE) in terms of improvement in functional capacity, peripheral muscle strength, and quality of life. We studied 24 Caucasian, ambulatory, adult, cystic fibrosis patients. Patients underwent a structured, outpatient, hospital-based pulmonary rehabilitation program for 12 weeks. Patients were randomised either to 30 min high-intensity IE (100% WRmax for 30 s alternated with 40% WRmax for 30 s; n=12) or 30 min moderate intensity CLE (70% WRmax; n=12). Interventions were balanced to provide the same overall training workload. Assessment was performed at baseline and following completion of the rehabilitation program. Functional capacity was assessed by the 6MWT, peripheral muscle strength was measured by the quadriceps isometric force and the Cystic Fibrosis Questionnaire-Revised (CFQ-R) was used to assess patient reported outcomes. The 6MWT was significantly improved equally in the IE Group (by 45 m; pre: 538 ±70, post: 583±83 m; p<0.001) and in CLE Group (by 48 m; pre: 516±57, post: 564±55 m; p=0.001). Improvement in quadriceps muscle strength was significantly greater in the IE group (pre: 37.9±13.1, post: 45.2±14.2 Kg; p=0.024) compared to CLE (pre: 40.0±12.2, post: 45.4±9.3 Kg; p=0.072). The CFQ-R was improved in both groups for the domains of “physical functioning” (IE Group pre: 52.8±14.5, post: 64.6±11.9; CLE Group pre: 60.4±11.2, post: 67.4 ±13.1; p=0.034) and “body image” (IE Group pre: 81.5 ±8.5, post: 88.1±7.3; CLE Group pre: 74.1±10.7, post: 80.7±9.7; p=0.046). Average training arterial oxygen saturation and Borg dyspnoea scores during exercise training indicated that the IE Group compared to the CLE Group exhibited higher oxygen saturation (94±1 vs. 91±1%; p=0.002) and lower intensity of dyspnoea (3.8±0.7 vs. 5.9 ±0.8; p<0.001). In conclusion, within the pulmonary rehabilitation setting, IE is equally effective to CLE in improving functional capacity and aspects of quality of life, but is superior to CLE in improving peripheral muscle strength. Furthermore, it can be applied to CF patients with lower dyspnoea sensations and lower arterial desaturation, thus qualifying as a safer alternative training strategy.