Breathing problems are a major complication in Cystic Fibrosis (CF), and individuals with CF suffer multiple “flare ups” from their lung disease, which we call pulmonary exacerbations. Currently, the standard of care for these exacerbations includes coming to clinic or the hospital when symptoms occur, and starting antibiotic treatment. Pulmonary function tests (PFTs) help us know when lung function has declined. However, currently we do not monitor lung function at home, nor do we objectively track respiratory symptoms. This study uses an electronic spirometer at home to measure lung function and symptoms. The study compares usual care to a program using home spirometers to identify and treat pulmonary exacerbations earlier in adolescents and adults with CF. The purpose of this study is to determine if earlier treatment of exacerbations will improve lung function and quality of life.

Interested participants will be randomly assigned to one of two groups. This is like flipping a coin. The two groups are the early intervention group and the usual care group.

The early intervention group will use home spirometers. Participants are asked to use these spirometers twice a week. Participants will blow into the spirometer three times, and then answer yes/no questions on the spirometer that assess symptoms (example – have you had a fever in the past 48 hours? Are you having more sputum?). Use of the monitor will take 5 minutes per day, two days a week. The monitor will need to be connected to a telephone line twice a week to send information to the cystic fibrosis center. If a land line is not available, a cell phone option is also available to send the information.

The usual care group will not use home monitors and will be asked to call the clinic if they have symptoms of a pulmonary exacerbation. In both groups, participants will be asked to come to the CF clinic every 3 months and answer several questionnaires which will take approximately 21 minutes to complete. These visits can be arranged to match with regularly scheduled clinic appointments. Additional visits to the CF clinic may also be appropriate when the spirometers or patients detect an exacerbation. Visits triggered by exacerbations will follow standard care involving coming to the clinic and starting antibiotics. The antibiotics may be inhaled, oral or intravenous, depending on decisions between you and your CF doctor.

All participants will be enrolled in the study for 12 months. Participants will have the option to be taken out of the study early if they find the home monitor too difficult to use, or if they do not want to make the measurements at home. They can agree to be in the study and change their mind later. Leaving this study early will not stop participants from getting regular medical care.

Participants will receive compensation in the form of $150.00 after completing the 5 study visits. Participants in the treatment arm may have additional study visits for which they will be paid $25.00 each.

If you have questions or are interested in learning more about the study please contact Dr. Noah Lechtzin at 410-502-7044.

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