Improved diagnosis of lung disease: New global benchmarks

September 4 2012

New research has established the first global benchmarks for assessing lung function across the entire life span. The lung growth charts will help healthcare professionals better understand lung disease progression and help raise awareness of lung disease, which is the world's leading cause of death.

The research will be presented today at the European Respiratory Society's Annual Congress in Vienna.

Lung function is measured by a spirometry test, which involves blowing out as hard and fast as possible into a device that records how big your lungs are and how fast you can breathe out. Currently, there is no global benchmark for these results, so doctors' interpretation of the results can vary widely.

Previously, a number of different charts have been used across the world to help doctors interpret the spirometry results. This could lead to someone's result being described as abnormal in one clinic and normal in another or an adolescent seeing their level of lung function apparently decrease dramatically when their care is transferred to an adult clinic. Similar errors can occur if an individual's ethnicity, and associated differences in body composition or stature, are not taken into account.

The new research, aimed to provide a consistent benchmark to enable clinicians across the world to tell patients what their lung capacity should be, based on healthy individuals of the same age, sex, ethnic group and

stature.

The international 'Global Lung Function' research group collected data from 74,187 healthy non-smokers aged 3-95 years and used modern statistical methods. They derived new continuous 'all-age' multi-ethnic lung growth charts. Previously, lung function charts were often only applicable to white subjects of European descent, but the new charts include the black population, those of oriental/Chinese descent and those of mixed ethnic origins.

The study comes at the close of the World Spirometry Day 2012 campaign, which saw more than 100,000 spirometry tests take place across the world in over 65 countries. The new lung growth charts will enable more accurate analysis of results from future World Spirometry Day campaigns and allow meaningful comparisons to be made between countries.

Senior author, Janet Stocks, from University College London, said: "These equations, endorsed by 6 major international lung societies around the world, are a major step forward in providing a robust measurement for lung function testing. They will enable healthcare professionals to streamline interpretation of test results around the world and provide a more reliable and easily interpreted picture of a patient's lung health.

"Correct interpretation of lung function results in the very young will enable us to identify children who are most likely to benefit from treatment and avoid unnecessary medication for those who do not need it. Similarly with an aging population, it is essential to distinguish the impact of normal aging from that of lung disease which could benefit from treatment, in order to enhance independence and quality of life in the elderly."

"We additionally hope that this benchmark will help to make spirometry testing the 'norm'. Many people are aware they need an ECG to test their heart, but not many people have heard of spirometry. By taking this step towards more consistent assessments, we hope we can raise awareness of the spirometry test and help to encourage people to have their lungs tested if they think they notice a problem.

Chair of the European Lung Foundation, Monica Fletcher, also welcomed the results: "By spotting lung conditions early, we can work towards more effective treatments and help relieve symptoms or slow progression of the disease. These new equations will allow patients to understand the health of their lungs and more effectively manage their condition or take steps to prevent progression or development of lung disease, such as and regular exercise and giving up smoking."

More information: The full report is available on-line in the *European Respiratory Journal*, DOI:10.1183/09031936.00080312 ,ERJ In Press June 27th 2012.

Provided by European Lung Foundation