

NISCHR Health Studentship Award 2014

Lay Summaries of all projects

Project Code	Project Title		
HS-14-41	Novel methods for identifying the disease modifying potential of pulmonary rehabilitation in chronic obstructive pulmonary disease		
Applicant	Cost	Institution	Duration
Arwel Wyn Jones	£65,988	Aberystwyth University	36
Lay summary			
<p>Chronic Obstructive Pulmonary Disease (COPD) is a progressive debilitating condition caused mainly by smoking and is now the third largest cause of death worldwide. It is also the second most common reason for hospital admission in the UK, costing the NHS over £1 billion each year in direct costs alone. Pulmonary rehabilitation (PR) is a programme of supervised core aerobic exercise and patient education over 6-12 weeks. It is one of the most effective and cost-effective interventions for COPD by reducing time in hospital, increasing exercise capacity, independence and improving quality of life. However, there are urgent calls from the Welsh Assembly, Lung Charities (British Lung Foundation) and the Welsh and British Thoracic Societies to better understand why not all people with COPD benefit from PR and why and how quickly the positive gains fade over time. As our burden of COPD increases, through an ageing population and limited NHS resources, more work is needed to predict PR responders, provide better support for more vulnerable PR participants, optimise the exercise regimes and determine the optimal duration of PR. Our published studies in the last 5 years, show novel technologies (e.g. Fourier Transform InfraRed Spectroscopy and Mass Spectroscopy) developed in our University can distinguish sputum samples from people with COPD from healthy controls and lung cancer patients. Now we want to apply a greater array of these same technologies to blood biomarkers (metabolites, proteins) of people enrolled in PR and relate these measurements with clinical outcomes. We will better understand why patients respond differently to PR and simultaneously compare responses to two established PR programmes in Wales, of different duration. These results will identify specific biological responses to exercise in those suffering with chronic lung disease and could help tailor PR programmes for maximum and maintained gains in the future.</p>			