



Case Study

## LifeLab – Developing skills and ideas for the Next Generation of Researchers

The World Health Organisation projects that by 2021, in the UK alone, almost 5 million people will die from a chronic disease such as heart disease, diabetes, osteoporosis, and some cancers. LifeLab's aim is to raise young people's awareness of health through an innovative educational experience, leading to a reduction in the risk of developing such chronic health problems for future generations.



Students from Cantell Maths and Computing College looking at their own DNA



A student from Redbridge Community College loading an agarose gel.

## Research

Research in the National Institute for Health Research funded Nutrition, Diet and Lifestyle Biomedical Research Unit and at the University Of Southampton Faculty Of Medicine has identified the importance of early development prenatally and in infancy on long-term health. Research from the Medical Research Council Lifecourse Epidemiology Unit Southampton Women's Survey revealed that both the mother's and father's diet and general health can impact on their child's lifelong health.

Thus, there is a growing agenda for the promotion of a healthy lifestyle in young people in relation to prevention of diseases including obesity, diabetes, cancer, immunity, cardiovascular, respiratory and osteoporosis.

These chronic diseases come at a significant socio-economic cost and prevention of them not only benefits the individuals at risk, but reduces the pressure on limited health resources.

Coupled with these insights is an increasing recognition of the role of health literacy in enabling people to exert greater control over their health and the factors that shape health

LifeLab is an innovative, cross-community educational intervention. By engaging children with the science that shows how lifestyle choices at an early age can affect health and future children's health, we hope

to empower them to make healthier choices and reduce their risk of developing chronic diseases later in life.

## Pathway

To develop, deliver and evaluate a number of educational programmes tailored to school students (11-18) that demonstrate the importance of Diet, Development and impact on Lifelong Health across a number of areas (cardiovascular, diabetes, osteoporosis) based on world-leading research in the Faculty of Medicine.

The purpose of scientific research in the field of medicine is to improve human health. Such research generally begins in the lab, this basic research must then be translated into medical practice, whether it is prevention, treatment or cure.

We feel that a missing component to this is the effective translation of the understanding of this research to the people whom it is for. LifeLab is part of the FoM enterprise activity in terms of outreach in order to address this concern.

## Impact

The funding from the EPSRC, enabled us with a relatively small budget to produce educational resources for use in schools directly based on the research being carried out in the FoM and to run the LifeLab day for a limited number of students.

The LifeLab work module, comprises pre and post-visit lessons to be delivered in school, interspersed with a day at LifeLab for:

- hands-on practical activities to embed messages about maternal and childhood nutritional influences
- opportunities to experience modern science to inspire students with the excitement of research and future career possibilities.
- opportunities to talk with research scientists, in a "Meet the Scientist" session to explore or challenge their views of scientists

Since we launched the pilot scheme of LifeLab in 2008, over 300 children have taken part. They have seen their DNA, taken a "snapshot" of their heart health, studied how genetics can affect cholesterol levels, used ultrasound to look at their own arteries, examined skeletons and studied how nutrients cross the placenta.

Through hands-on learning they have discovered how the nutrition of mothers, infants and children - and their own diets and lifestyles - are the foundations for better health.



**National Institute for Health Research**

Southampton NIHR  
Nutrition, Diet and Lifestyle  
Biomedical Research Unit