Engaging the next generation in health matters

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LifeLab

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The health of people in Southampton is generally worse than the England average.

Deprivation in Southampton is higher than average and about 25.3% (10,600) children live in poverty.

The rate of alcohol-specific hospital stays among those under 18 is worse than the average for England.

Levels of teenage pregnancy and smoking are worse than the England average (Smoking in pregnancy is over twice as common).

In Year R, 22.2% of children are classified as overweight/obese.
In Year 6, 34.2% of children are classified as overweight/obese.

Source: Public Health England: August 2014
% Children living in poverty
(HM Revenue and Customs - Child poverty statistics, 2011)

- Southampton: 25.3%
- Portsmouth: 24.4%
- Poole: 15.9%
- Isle of Wight: 20.3%
- Hampshire: 11.9%
- Dorset: 12.7%
- Bournemouth: 19.4%
- England: 20.1%
Me, My Health & My Children’s Health

LifeLab developed as a **collaboration** by

- University of Southampton (Education and Medicine)
- NIHR Nutrition Biomedical Research Centre
- University Hospital Southampton
- Maths & Science Learning Centre
- MRC Lifecourse Epidemiology Unit

Located at University Hospital Southampton, comprising of a **classroom**, **seminar area** and a **laboratory** for hands-on experiments.
Education:

Pupils need to understand the science behind health issues to make informed judgements about their health

Medical:

A healthy lifestyle in early life = Better health in later life and for future generations
The Southampton Women’s Survey

12,583 non-pregnant Southampton women aged 20-34 years interviewed between 1998 and 2002.

Subsequent pregnancies studied, ultrasound scans and interviews.

3159 births

Children followed-up at 6, 12, 24 & 36 months. Samples seen at 4, 6, 8, and 10-12 yrs.

Adapted from Inskip et al. Int J Epidemiol. 2006
Young Southampton women with a lower level of educational attainment are more likely to eat an unbalanced “imprudent” diet.

% in the lowest quarter of prudent diet score

- No exams: 54.7%
- Lower level exams: 48.5%
- Intermediate level exams: 33.5%
- Advanced level exams: 19.4%
- Higher National Diploma: 12.9%
- University degree: 3.5%

Educational level

EJCN 2004; 58:1174-80
Breaking the cycle

- Poor educational attainment
- Poor diet
- Take less exercise
- Obese

Ill-prepared for pregnancy.
Minimal changes in diet and health behaviours

Greater fat mass, less lean mass and lower IQ at age 4

Barker et al., 2008; Lawrence W, 2009; S. M. Robinson et al., 2004
risk over lifecourse

The body is able to respond to lifestyle changes

The body is unable to respond to lifestyle changes

Chronic disease risk

Mother & infant

Childhood & adolescence

Adulthood

Life course

No treatment
Late treatment slight success for vulnerable groups

Earlier treatment improves future health prospects

Early intervention
Comparing Heart Rates

Introduction

In this experiment, we will be finding out how different sports affect people's heart rates. The experiment will have six people: one from each sports group. We will take their heart rates at the start, before taking part in the activity and then every 2 minutes during the activity. The average heart rate per minute will be calculated and compared between the sports groups. The last person will be measured by doing nothing. The average heart rate for all the people will be measured. The results will be shown on a bar graph, with the activities on the x-axis and the average heart rate on the y-axis.

Conclusion

The graph shows that the speed of each activity increases so does the heart rate. This is because you need more blood pumped around your body so your heart needs to work harder.
LifeLab aims to provide school students with opportunities to:

- Learn how they can improve their health and the health of their future children through increased health & science literacy.
- Become enthusiastic about science, and consider further study and careers in scientific disciplines.
What Happens at LifeLab

http://www.youtube.com/watch?v=u0qvxsdm-fY
LifeLab Research:

- Randomised Control Trial (RCT)
- 42 schools recruited and randomised to our RCTs (funded by the BUPA foundation and the BHF)
- To date, over 5000 school students have attended
  - Primarily year 9, but also 11-18 yrs
A lasting impression

Our pilot studies have demonstrated important statistical changes in the attitudes of children **six months** after experiencing LifeLab.

P values derived from test for trend across all possible categories

Responses to LifeLab questions

- The food I eat now will affect my future health
  - P = 0.001
  - LifeLab: 90%, Non-LifeLab: 60%

- How likely are you to carry on studying Science after your GCSEs?
  - P < 0.0001
  - LifeLab: 70%, Non-LifeLab: 40%

At what age do you think our nutrition starts to affect our future health?

At baseline

After intervention

Error bars are 95% confidence intervals
“If I want to have a long healthy life I need to be more careful with my body and need to look after it more”

“I won't eat as many unhealthy foods because I don't want to have heart disease.”

“I think that the most important thing I had learnt was that I need to commit to keeping healthy because otherwise when I'm older it can really effect my health”

“When I went home and told my mum about the LifeLab programme she suggested that I start taking my German Shepherd out for a walk every day. So that’s the change I’ve done”

“How unhealthy my lifestyle actually is and the small changes that need to be made just to make sure I'm at less off a risk.”
Involvement of young people

- Educational materials
- Hands on activities
- Research materials
- Impact of the educational programme
LifeLab ambassadors

“I was eager to become one as I wanted to help let more people know about LifeLab”

“I believe that what LifeLab are trying to do, could be put into practice in the real world and it’s something that is really important, esp with the rising obesity rates in children.”

“They are interested in our thoughts and listen to our suggestions”

“They actually asked us what we thought – which activity wristband we would be more likely to wear”
Conclusions

• Involvement of young people is critical
  – Coordination
  – Space
  – Facilitation

• Links with other groups

• Representation