



Public engagement



**"Smear-test ageism killed our daughter"**

**"Review on children in nurseries and heart disease"**

**"Breast cancer 'risk' all over shops' shelves"?**

**"Do fizzy drinks make teenagers more likely to carry a gun?"**

**"A sausage a day could lead to cancer"**

**"Calls to ban mobile phones and Wi-Fi claiming they pose a public health risk not based on evidence"**

**"Is aluminium really a silent killer?"**

**"Heart danger in diet drinks"**

**Figure 2.1 Interest in medical research**

*Q. How interested, if at all, would you say you are in medical research?*

*Base: All respondents*

*Wellcome Trust Monitor*

	<b>Monitor w1 (2009)</b>	<b>Monitor w2 (2012)</b>	<b>Monitor w3 (2015)</b>
	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>
Very interested	34	20	22
Fairly interested	57	55	55
Not very interested	7	18	16
Not at all interested	2	7	7
Don't know	*	1	*
<i>% Interested (very or fairly)</i>	<b>91</b>	<b>75</b>	<b>77</b>
<i>Unweighted base:</i>	<b>1,179</b>	<b>1,396</b>	<b>1,524</b>
<i>Weighted base:</i>	<b>1,179</b>	<b>1,396</b>	<b>1,524</b>

*\* indicates a percentage less than 0.5%, but greater than 0.*

Flashpoints





SENSE  
about SCIENCE  
Because evidence matters

# EVIDENCE MATTERS

1st November 2016

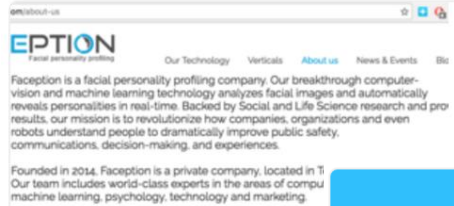
# Ask for Evidence on pregnancy adv |

[Ask For Evidence](#)

[Understand Evidence](#)

## Facial profiling reveals personality

Computer-vision and machine learning technology



**EPTION**  
Facial personality profiling

Our Technology Verticals About us News & Events Blog

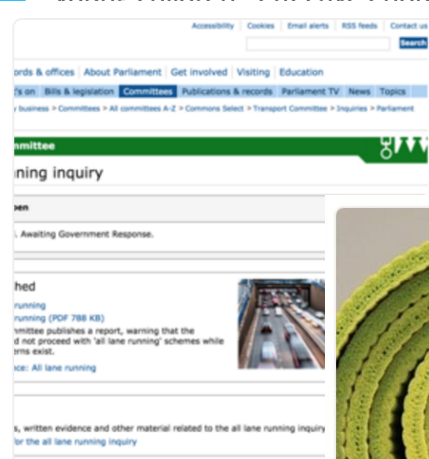
Faception is a facial personality profiling company. Our breakthrough computer-vision and machine learning technology analyzes facial images and automatically reveals personalities in real-time. Backed by Social and Life Science research and proven results, our mission is to revolutionize how companies, organizations and even robots understand people to dramatically improve public safety, communications, decision-making, and experiences.

Founded in 2014, Faception is a private company, located in T. Our team includes world-class experts in the areas of computer machine learning, psychology, technology and marketing.



## Do the claims of the expensive phonics programme Read Write Inc have any evidence?

The claim is that Read Write Inc Phonics is effective in teaching phonics to young children - effective enough to justify throwing out previous research-



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**Committee**

ning inquiry

men

Awaiting Government Response.

hed

running

running (PDF 788 KB)

Committee publishes a report, warning that the d not proceed with 'all lane running' schemes while the exist.

ice: All lane running

is, written evidence and other material related to the all lane running inquiry for the all lane running inquiry

## Is all-lane running a safe and effective solution to congestion on motorways?

All-lane running (opening the use of the hard shoulder as a permanent



## Yoga in schools improve mental health?

It was reported by The Telegraph that Edward Timpson said children should be taught yoga and meditation "to enable all children to enjoy good mental health and emotional wellbeing" <http://bit.ly/2c1INX3> [...]

[View](#) [Get help](#)



**ALL TRIALS REGISTERED**

**Sign the petition**



**Tell me more**

**ALL RESULTS REPORTED**



# What people ask about...



## **Help me get to grips with it**

- Should we worry?
- Can I get something from scientists?
- Is it a scare story?
- Is it science?
- Who says it's safe?

## **How much do we know?**

- What do scientists actually know?
- What tests have been done?
- How sure are they?

## **Balance of scientific opinion**

- Is it majority opinion?
- How are scientists split?

## **Legitimacy**

- Is it a proper study?
- How can I tell?
- Have they talked to scientists?
- What kind of study is it?



✓ Diagnosis

✓ Approach

✓ Accountability

 Data



Public engagement:  
aren't some issues just too complex?





Hover over the screenshots to see a list of the available maps.

## Health conditions

**Lung cancer**

Ward Name  
District name  
Click on a county to zoom  
PM10 - 13475  
Postcode search

Lung cancer Risk factors Glossary

Lung cancer prevalence  
National female lung cancer rate (2010)  
20.7 cases per 100,000 population  
European age-standardised incidence rates for lung from  
Source: Cancer Research UK

Lung cancer is the second most common cancer in the UK among men and the third most common in women.  
In England and Wales, there were approximately 35,400 cases (19,800 men, 15,600 female) of lung cancer diagnosed and 20,000 deaths (17,000 men, 13,000 female) due to lung cancer in 2015.

The median observed number of lung cancer cases in a ward in the 25-year period 1985-2009, was 13 (47 male cases and 10 female cases).

The ward with the highest rate for lung cancer in England and Wales is in the London area of England and Wales. This is due to a number of factors including smoking patterns and occupational exposures. It is also affected with a smaller potential contribution from air pollution exposures.

Further information about lung cancer can be found at:  
The Royal College of Lung Cancer Foundation  
NHS choices - lung cancer  
Cancer Research UK - lung cancer

Observe National Statistics and Geography Society data of Great Britain and detailed right 2012 Census statistics for Wales and Northern Ireland.

RELATIVE RISK

Higher	1.33-1.56
	1.20-1.34
	1.07-1.19
Average	0.96-1.06
	0.88-0.95
	0.76-0.85
Lower	0.68-0.75
	0.67

Risk comparison within county

## Environmental agents

**PM10**

Ward name  
County name  
Concentration  
Postcode search

PM10 Health Outcomes Glossary

Particulate Matter <math>10\mu\text{g}/\text{m}^3\text{ (PM}\_{10}\text{)}</math>

Particulate matter can be natural or man-made and is a complex mixture of liquid and solid, organic and inorganic substances in the atmosphere.

Particulate matter varies in size and PM10 is smaller than 10 micrometres ( $\mu\text{m}$ ).

Since smaller particulate matter can be difficult to measure, most routine air quality has measured PM10.

The route of exposure to particulate matter or pollution is influenced by the size and shape of the particle effects whether it is inhaled or by the nose or reaches the lungs.

The concentration of particulate matter or pollution is also influenced by the time and place of the particle effects whether it is inhaled or by the nose or reaches the lungs.

Further information:

There is a daily and an annual air quality limit value for PM10 in the UK. The Air Quality Standards Regulations 2010

- The daily mean limit value is  $50\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year.
- The annual mean limit value is  $40\mu\text{g}/\text{m}^3$ .

Maps of background air pollution concentrations for the UK at 1 km x 1 km scale, as well as maps of roadside concentrations, are produced each year for the English Department for Environment, Food and Rural Affairs (Defra) and the Welsh Government Assembly (an.delta.gov.uk/Data/air-data).

PM10  $\mu\text{g}/\text{m}^3$

29.10
25.10-29.00
22.10-25.00
20.10-22.00
16.10-20.00
7.00-16.00

- choose a map -

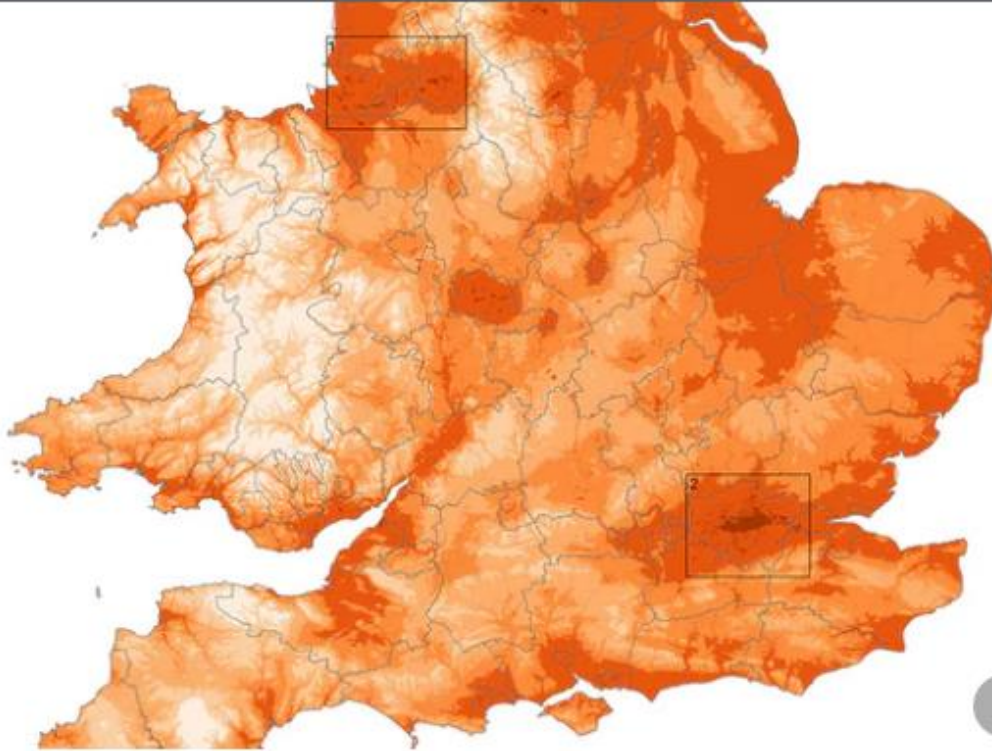
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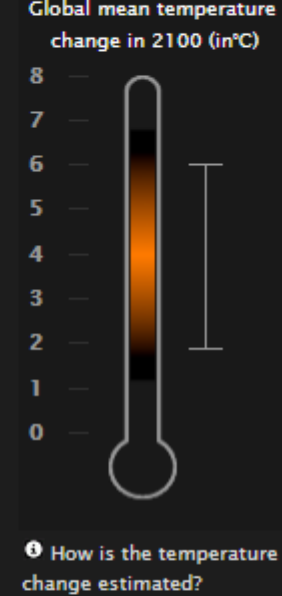
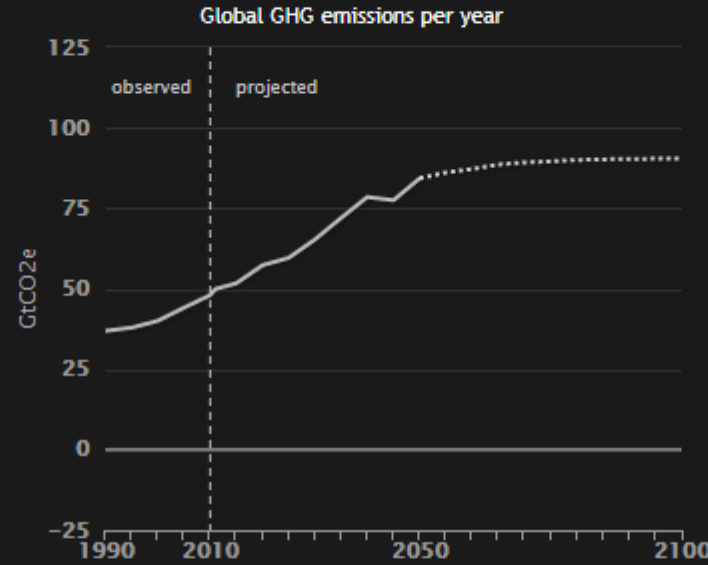
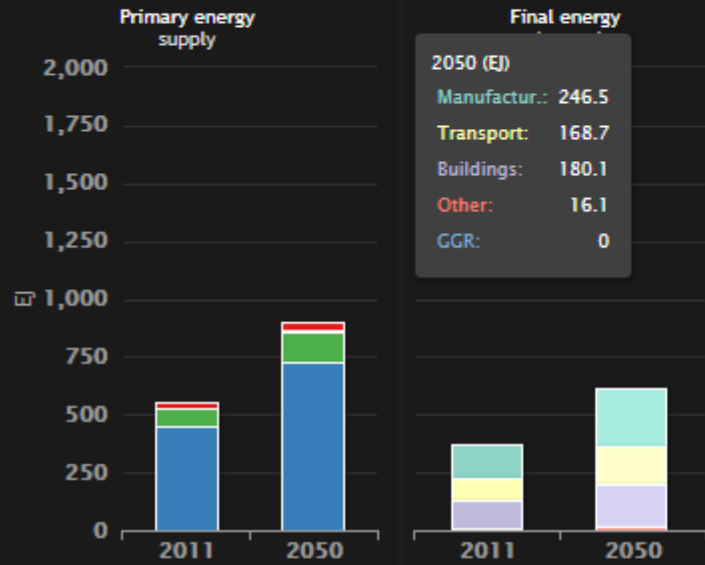
environment / climate change / wildlife / energy / pollution / more



i

The environment and health atlas of England and Wales: how it was created and what it shows





**Warnings**

- ☹️
- 💡
- ⚙️
- 💧
- 🌲
- 4
- 🔥

Choose an example pathway or create your own pathway by selecting effort level 1 to 4 for each lever.

--- Example pathways ---

Selected pathway: IEA 6DS (approx.)

**LIFESTYLE**

- TRAVEL: [Progress bar]
- HOMES: [Progress bar]
- DIET: [Progress bar]

**TECHNOLOGY AND FUELS**

- TRANSPORT: [Progress bar]
- BUILDINGS: [Progress bar]
- MANUFACTURING: [Progress bar]
- CARBON CAPTURE AND STORAGE (CCS): [Progress bar]
- BIOENERGY: [Progress bar]
- FOSSIL FUEL: [Progress bar]
- NUCLEAR: [Progress bar]
- RENEWABLES: [Progress bar]

**LAND AND FOOD**

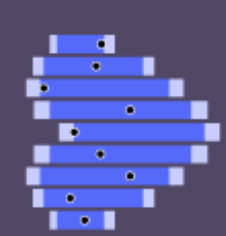
- FOOD: [Progress bar]
- LAND USE: [Progress bar]

**DEMOGRAPHICS AND LONGTERM**

- DEMOGRAPHICS: [Progress bar]
- EMISSIONS AFTER 2050: [Progress bar]

Public engagement:  
aren't some issues just too sensitive?



[Home](#)[? What, why, how?](#)[Explore the data](#)[Everything else](#)

# UNDERSTANDING CHILDREN'S HEART SURGERY OUTCOMES

This site is to help people make sense of published survival data about children's heart surgery in the UK and Ireland.

Our website will help you:

- understand how the NHS monitors children's heart surgery
- explore what survival rates can and can't tell you
- explore published data for hospitals in the UK and Ireland



What, why, how?

**What** do we mean by survival rates?

**Why** are survival rates after children's heart surgery hard to interpret?

**How** does the NHS monitor them?



Explore the data

**Explore published survival statistics by:**

browsing hospitals individually;

viewing a one page summary of all hospitals;



Everything else

What happens if the data raises concerns?

More detail about how survival statistics are monitored, including an explanatory video.

Limitations of this data





# Talk

Advanced search

[Active](#) | [I'm on](#) | [I'm watching](#) | [I started](#) | [Last 15 minutes](#) | [Last hour](#) | [Last Day](#)

## Guest post: "I hope we've helped others preparing for their child's heart surgery"

Alex Smith says the lack of clear information added to her stress when her daughter was diagnosed with a heart defect - so she got involved with a project to improve resources



Alex Smith

Posted on: Tue 02-Aug-16

11:08:26

(3 comments)

"As a parent, I need clear, straightforward information, even when I might be in a state of panic or distress."

# Fear of Uncertainty

- It doesn't mean we know nothing
- It doesn't mean that anything could be true
- Confidence in new discoveries often compares favourably with confidence in previous

=> Operational knowledge



# Public engagement: is it too late?



into the unknown is what drives humanity forward, and to destroy it is an attack against us all.

Steve Forden, PhD Researcher

Wanton destruction must never be able to trump evidence based research.

Louise Ward, Student - plasma physics

Without scientific research, we are at risk of allowing the anti-science movement to destroy scientific progress with their irrational fear of change and the things they've not bothered to understand.

Brian, Director

Beacu dark a

**Martin Harvey, ecologist**

Mar Every crops

I'm concerned about potential dangers with GM, but the only way to find out the truth is through research - destroying research leaves us all in the dark.

Alisc

Science is vital

Oliver Keane, Student

The work done by GM crop scientists is a vital part of moving towards a more environmentally-friendly mode of agriculture, as well as helping mankind survive the effects of climate change.

Janis Rudzitis, Designer

It's just common sense.

Christopher Maslen, 3D Artist

Scientific research like this is what is going to bring humanity through the problems of the 21st century. Impeding this process because of ignorance should be prevented at all costs.

Sergio Robles, Math and Science Teacher  
Because it is the best way to find the truth about many matters that concern us in this world, one of them being how to feeding a growing population without

Kate Merritt,

Rothamsted is a hist

research, and it also

wonder in science to me and ultimately shaped my future decision to become a scientist myself. My mother worked at Rothamsted for 25 years, and it kindly opened its doors to me by way of a summer research experience placement, giving me my first taste of science which I will never forget. Rothamsted is a kind and timid research facility, untainted by commercial drives but instead showing a genuine

interest about nature around us. To show to attack Rothamsted in the

poorer

it

use

difficult

and complex that humans have ever faced in their quarter-million year

tenure on this planet. Even if the results of the Rothamsted are

uncertain, one thing is: we will not solve the problems bearing down on

us by abandoning science.

Tim Hubbatd, Sys Admin

Science is the only tool we have that can reliably make sense and create understanding of the universe. To paraphrase Carl Sagan: It is a candle against the darkness of our demon-haunted world.

**Jenny Emmers, mum of three**

I find it hard to follow what is likely to be useful for the future but I don't think I'll have any chance if people destroy the research that's

**Mark Hammonds, nurse**

There is no substitute for this kind of dialogue.

Science has given Man the ability to understand or universe and vastly improve the human condition.

that it won't have been in vain.

Julio J Morera, Pool Cleaning Service

Let the science continue! This research aims to reduce the environmental impact of agriculture on a world with ever-increasing demands for food. Just because GMOs are not natural" doesn't mean they are automatically harmful! The potential benefits of GMOs are enormous, and if anything, we should all be working together to ensure that genetic modification is done safely and responsibly. If you are concerned that Rothamsted will pull a Monsanto, then fight the system that allows for such exploitation! Don't destroy the science that can benefit millions of people around the world! Destroying these crops is a backwards and profoundly ignorant thing to do."

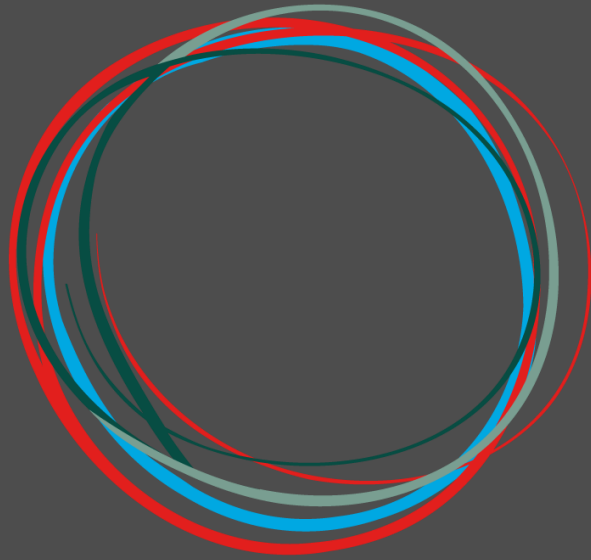
Martin Jones, Software Product Manager

Without better ways of producing food, in the long run billions may starve. Opposition to GM technology is really misguided and borders on a serious danger to humankind.

Dave, IT Administrator

Why do this? Why violently denounce this part of scientific progress while embracing other parts, like antibiotics, nylon, rayon, the internal combustion engine, nutrition, airbags, superglue, toothpaste, computers, GPS, phones and hair gel, just to name a few.

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of important  
ing, and  
ng enough



**SENSE**  
about **SCIENCE**

Because evidence matters