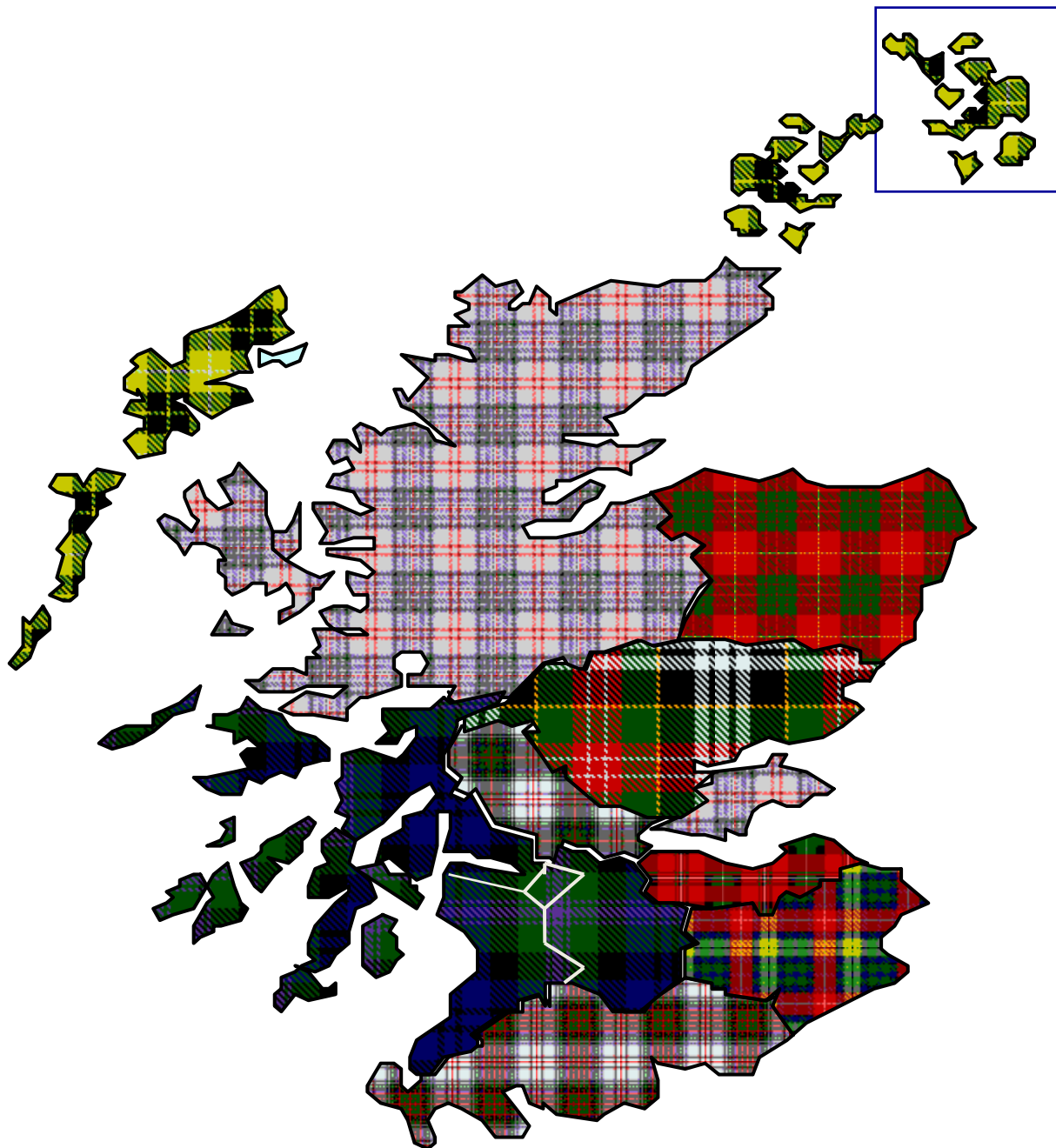


Improve Health Improve Achievement

Dr Catherine Calderwood
Chief Medical Officer for Scotland
obstetrician and gynaecologist



**The Scottish
Government**
Riaghaltas na h-Alba



- 5.2 million people
- 1 million children
- £12 billion budget for health
- £3.66 billion for education
- £3.67 billion for justice
- 14 Health Boards
- 8 Support Boards
- Moving towards social care integration

SCOTLAND



Gapminder World 2013

HEALTHY →
← SICK

← POOR INCOME RICH →

GDP per capita in international \$

HEALTH & INCOME OF NATIONS IN 2013

This graph compares Life Expectancy & GDP per capita for all 182 nations with more than 100 000 inhabitants, recognized by the UN.

COLOR BY REGION

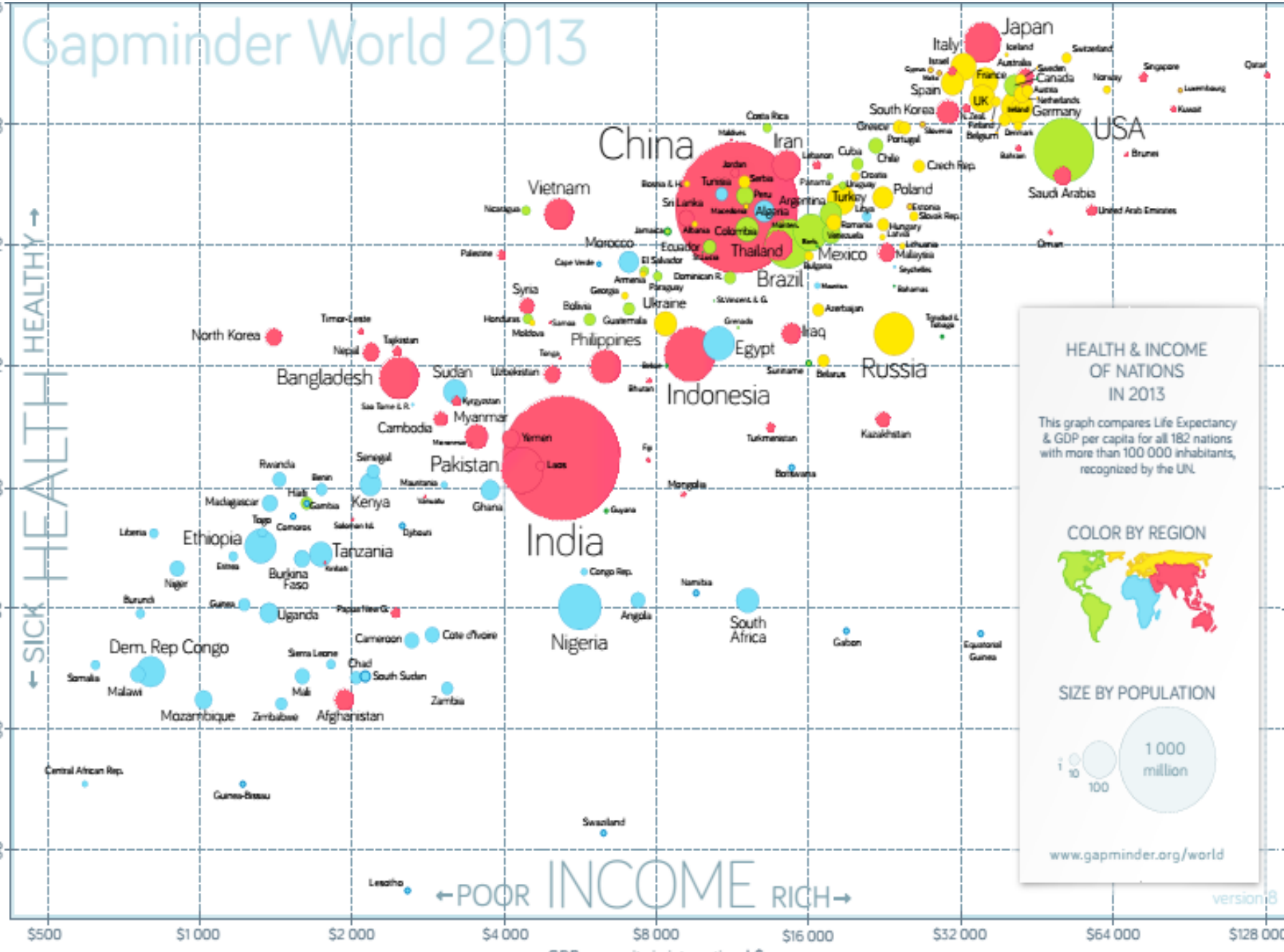


SIZE BY POPULATION



www.gapminder.org/world

version 8



Success worth sharing

- UK

EXHIBIT ES-1. OVERALL RANKING

COUNTRY RANKINGS

| |
|-----------|
| Top 2* |
| Middle |
| Bottom 2* |

| |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------------|---|---|---|---|--|---|---|---|---|---|---|
| | AUS | CAN | FRA | GER | NETH | NZ | NOR | SWE | SWIZ | UK | US |
| OVERALL RANKING (2013) | 4 | 10 | 9 | 5 | 5 | 7 | 7 | 3 | 2 | 1 | 11 |
| Quality Care | 2 | 9 | 8 | 7 | 5 | 4 | 11 | 10 | 3 | 1 | 5 |
| Effective Care | 4 | 7 | 9 | 6 | 5 | 2 | 11 | 10 | 8 | 1 | 3 |
| Safe Care | 3 | 10 | 2 | 6 | 7 | 9 | 11 | 5 | 4 | 1 | 7 |
| Coordinated Care | 4 | 8 | 9 | 10 | 5 | 2 | 7 | 11 | 3 | 1 | 6 |
| Patient-Centered Care | 5 | 8 | 10 | 7 | 3 | 6 | 11 | 9 | 2 | 1 | 4 |
| Access | 8 | 9 | 11 | 2 | 4 | 7 | 6 | 4 | 2 | 1 | 9 |
| Cost-Related Problem | 9 | 5 | 10 | 4 | 8 | 6 | 3 | 1 | 7 | 1 | 11 |
| Timeliness of Care | 6 | 11 | 10 | 4 | 2 | 7 | 8 | 9 | 1 | 3 | 5 |
| Efficiency | 4 | 10 | 8 | 9 | 7 | 3 | 4 | 2 | 6 | 1 | 11 |
| Equity | 5 | 9 | 7 | 4 | 8 | 10 | 6 | 1 | 2 | 2 | 11 |
| Healthy Lives | 4 | 8 | 1 | 7 | 5 | 9 | 6 | 2 | 3 | 10 | 11 |
| Health Expenditures/Capita, 2011** | \$3,800 | \$4,522 | \$4,118 | \$4,495 | \$5,099 | \$3,182 | \$5,669 | \$3,925 | \$5,643 | \$3,405 | \$8,508 |

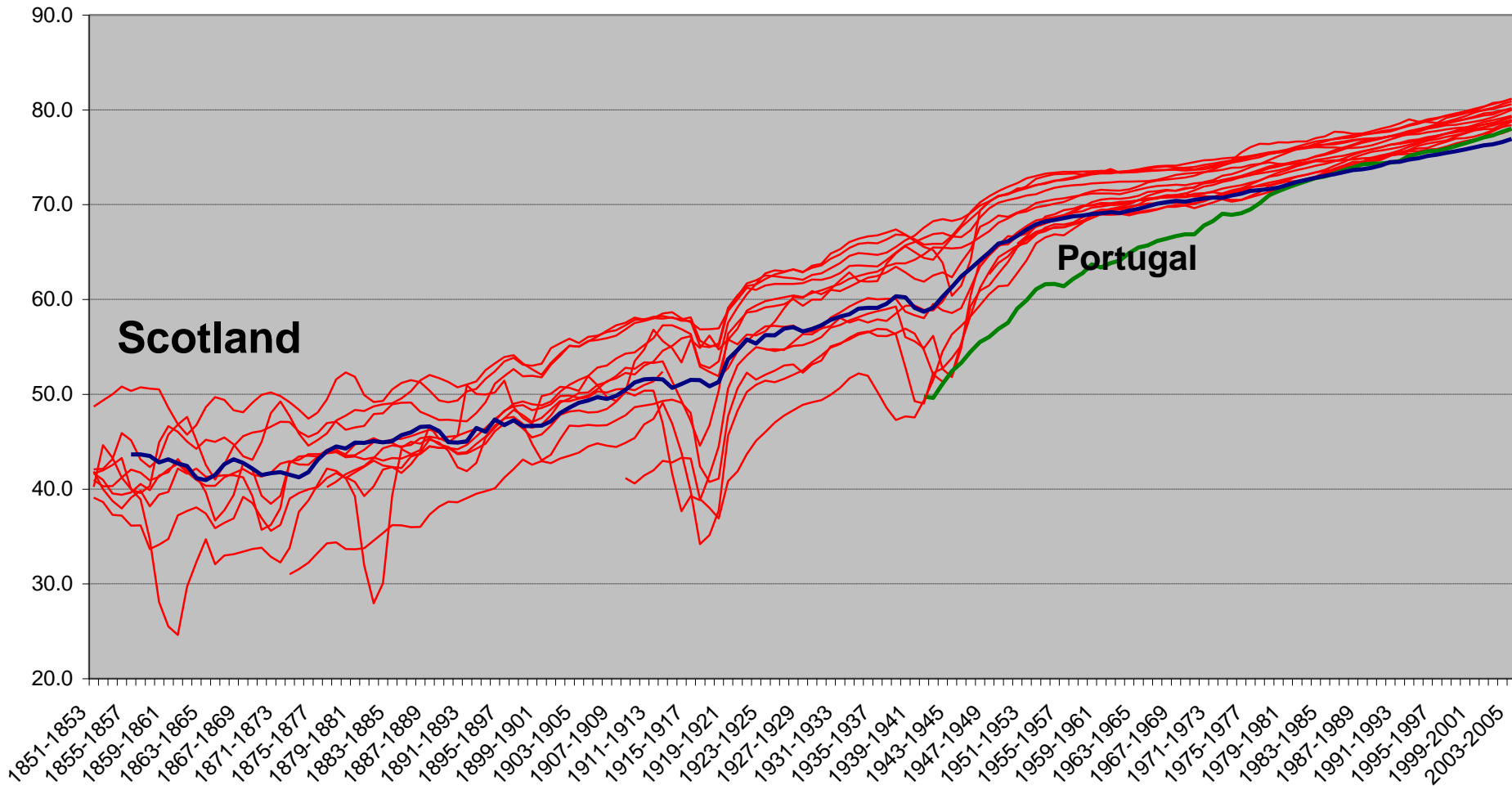
Notes: * Includes ties. ** Expenditures shown in \$US PPP (purchasing power parity); Australian \$ data are from 2010.

Source: Calculated by The Commonwealth Fund based on 2011 International Health Policy Survey of Sicker Adults; 2012 International Health Policy Survey of Primary Care Physicians; 2013 International Health Policy Survey; Commonwealth Fund National Scorecard 2011; World Health Organization; and Organization for Economic Cooperation and Development, OECD Health Data, 2013 (Paris: OECD, Nov. 2013).

Life expectancy trends

Life expectancy: Scotland & other Western European Countries, 1851-2005

Source: Human Mortality Database



Building on Public Health Successes

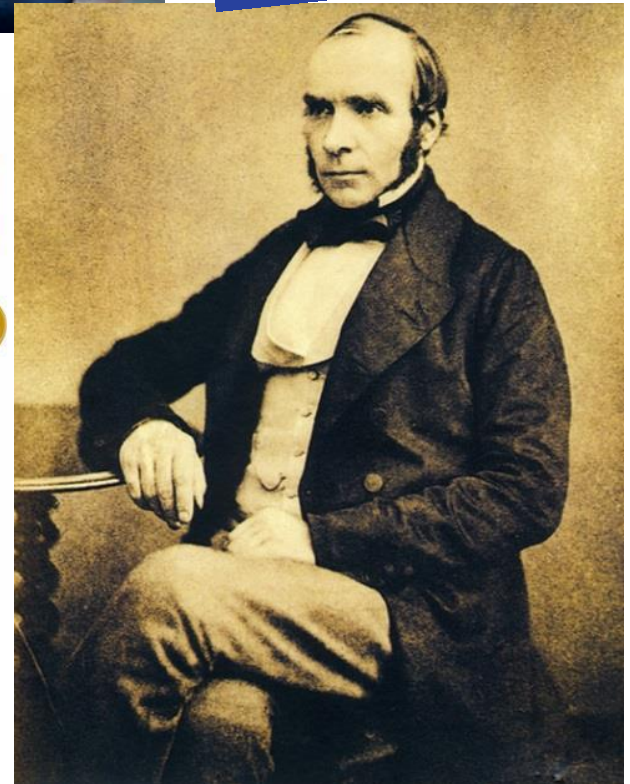


**SPOT THE
DIFFERENCE?**

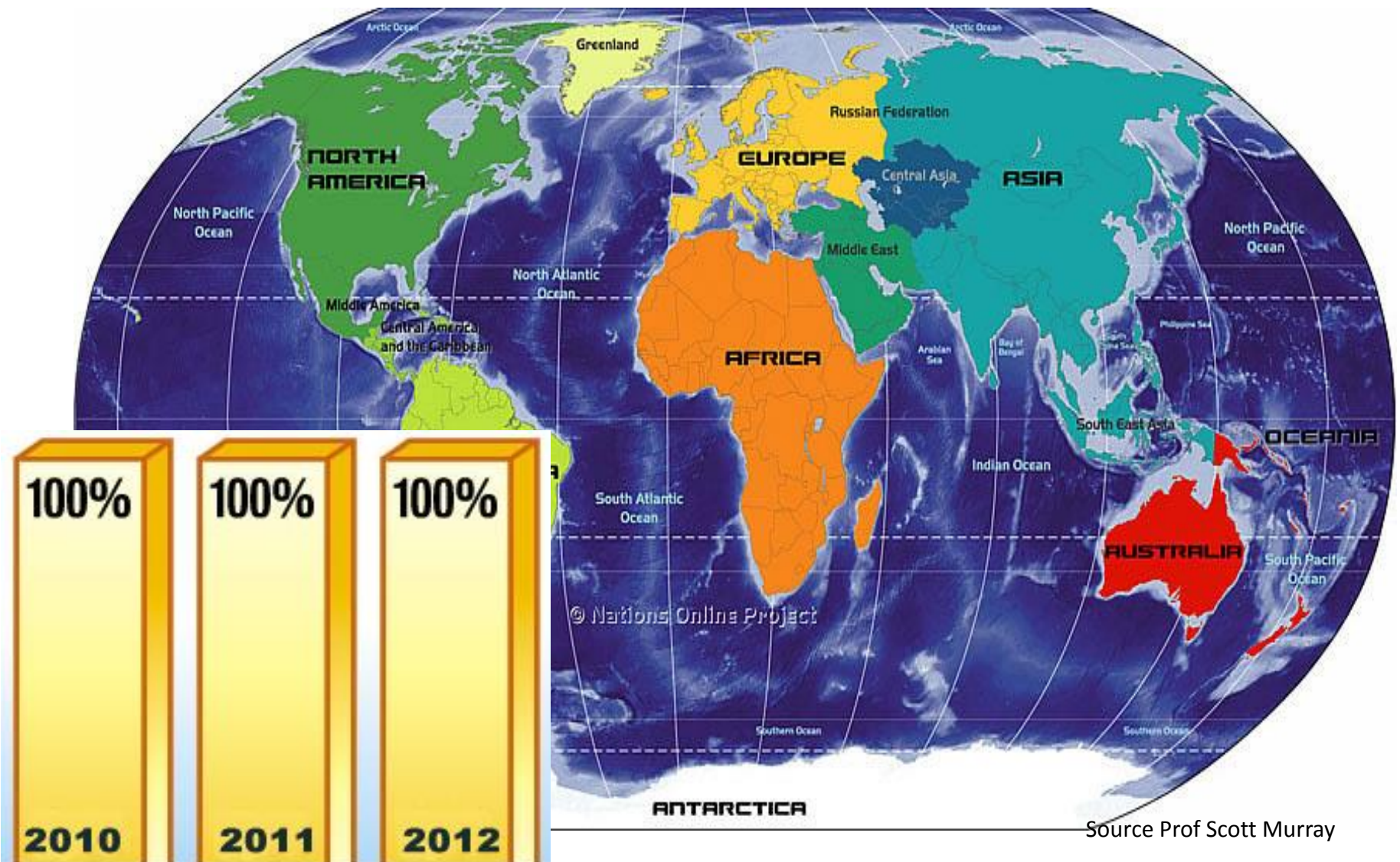


The eatwell plate

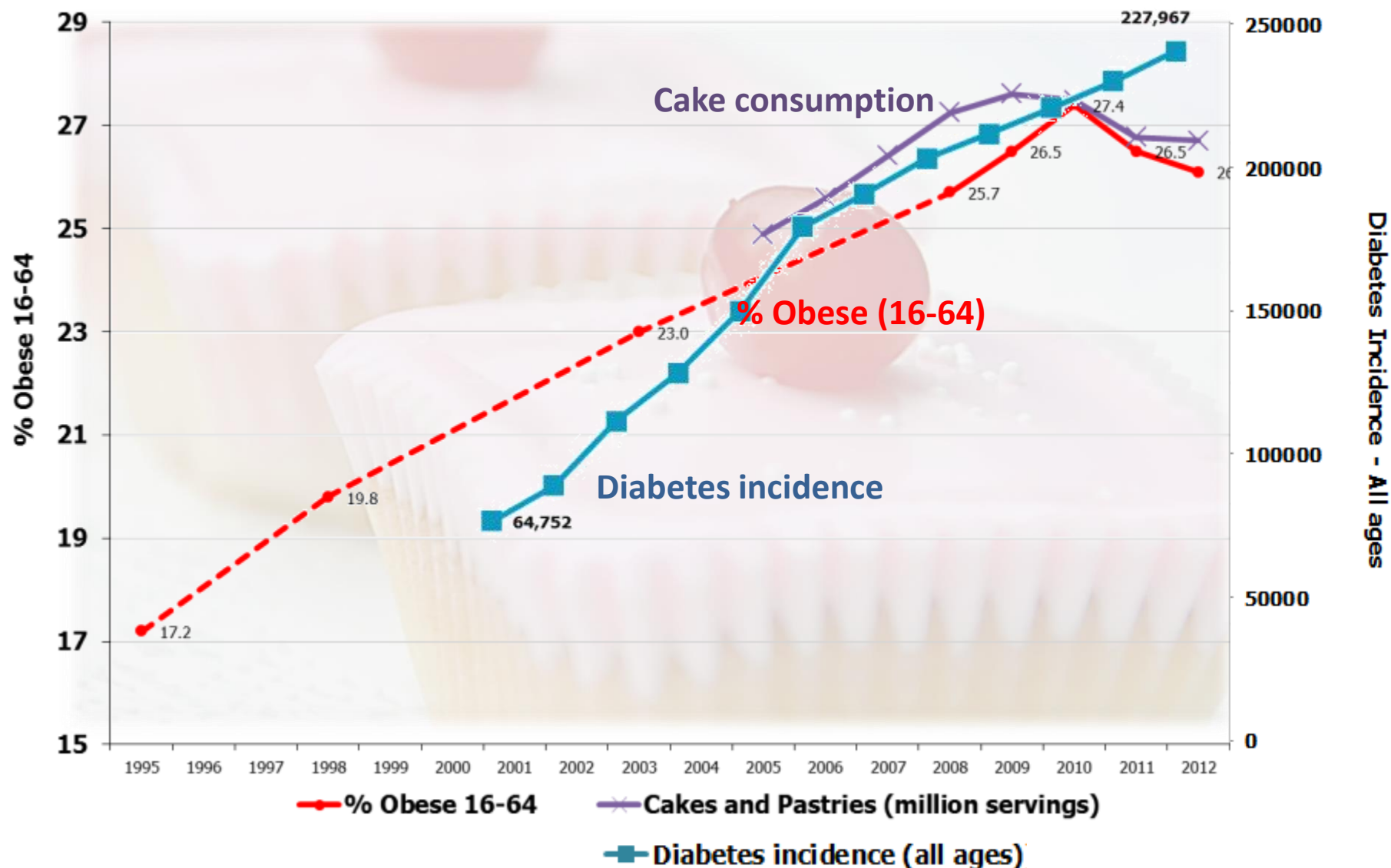
Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Still haven't cured death



Obesity, Cakes and Diabetes



Source: Scottish Health Survey; Kantar Worldpanel

Social circumstances and health



Dundee United star Andy Robertson named PFA Scotland young player of the year

28 April 2014 10:02am



The PFA Scotland Young Player of the Year award went to Dundee United ace Andrew Robertson.

Dundee United full-back Andy Robertson has been named PFA Scotland young player of the year.

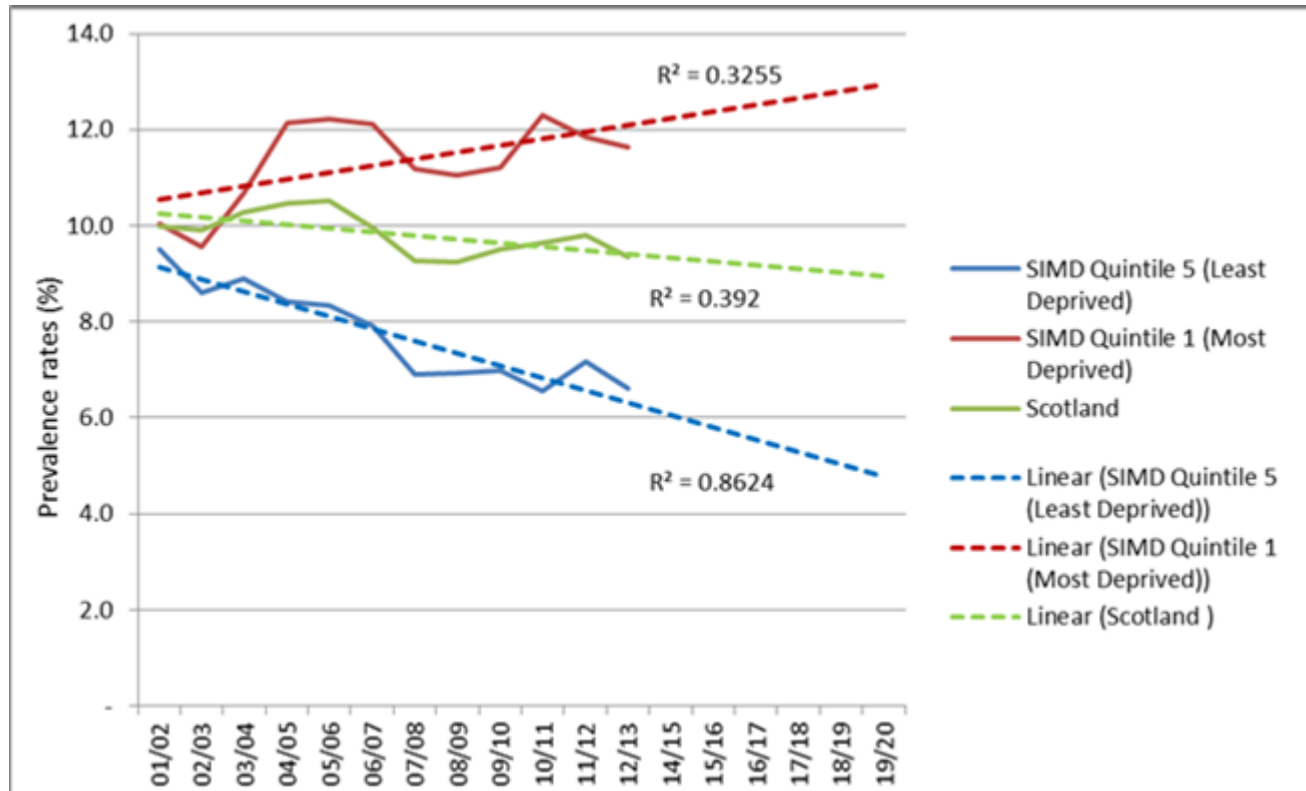
RELATED STORIES

Paul Paton backs team-mate Andy



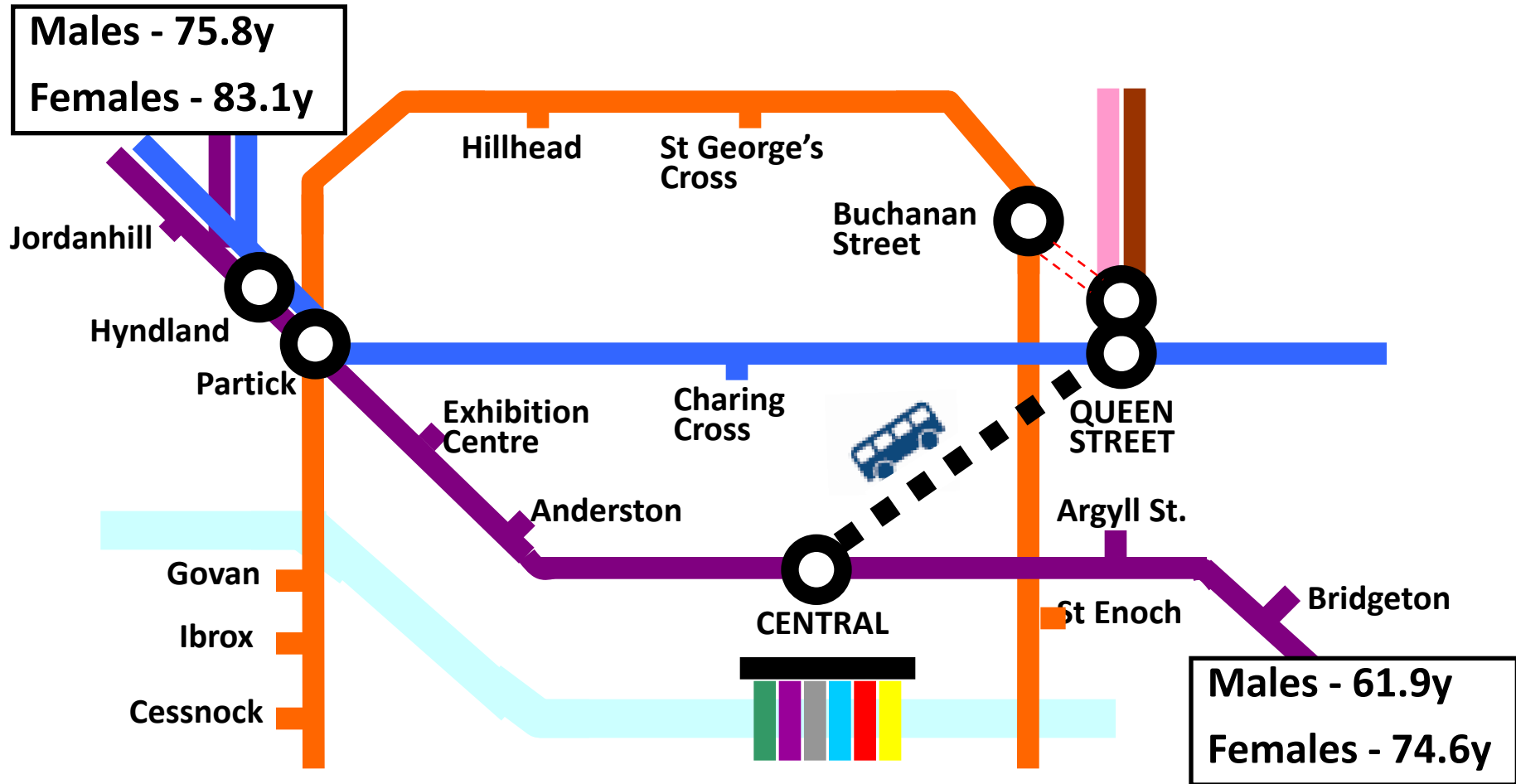


Health Inequalities



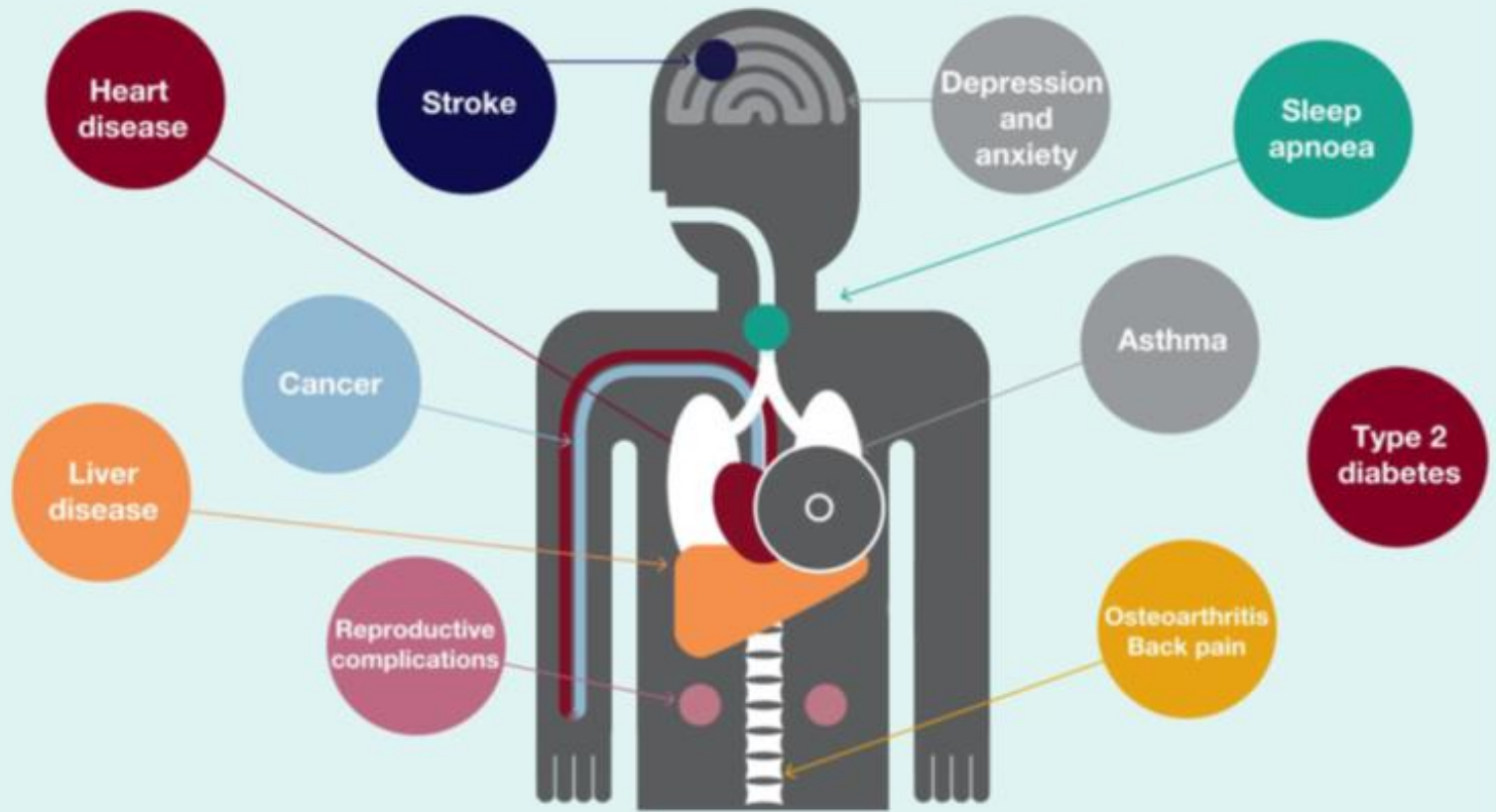
The Projected Prevalence of Obesity in Primary 1 Children in Scotland for Scottish Index of Multiple Deprivation Quintiles 1 & 5 compared to Scotland as a whole: school years 2001/02 to 2019/20

Each stop on the Argyll line travelling East represents a drop of 1.7 years in male life expectancy



Life expectancy data refers to 2001-5 and was extracted from the GCPH community health and well-being profiles. Adapted from the SPT travel map by Gerry McCartney.

Obesity harms health



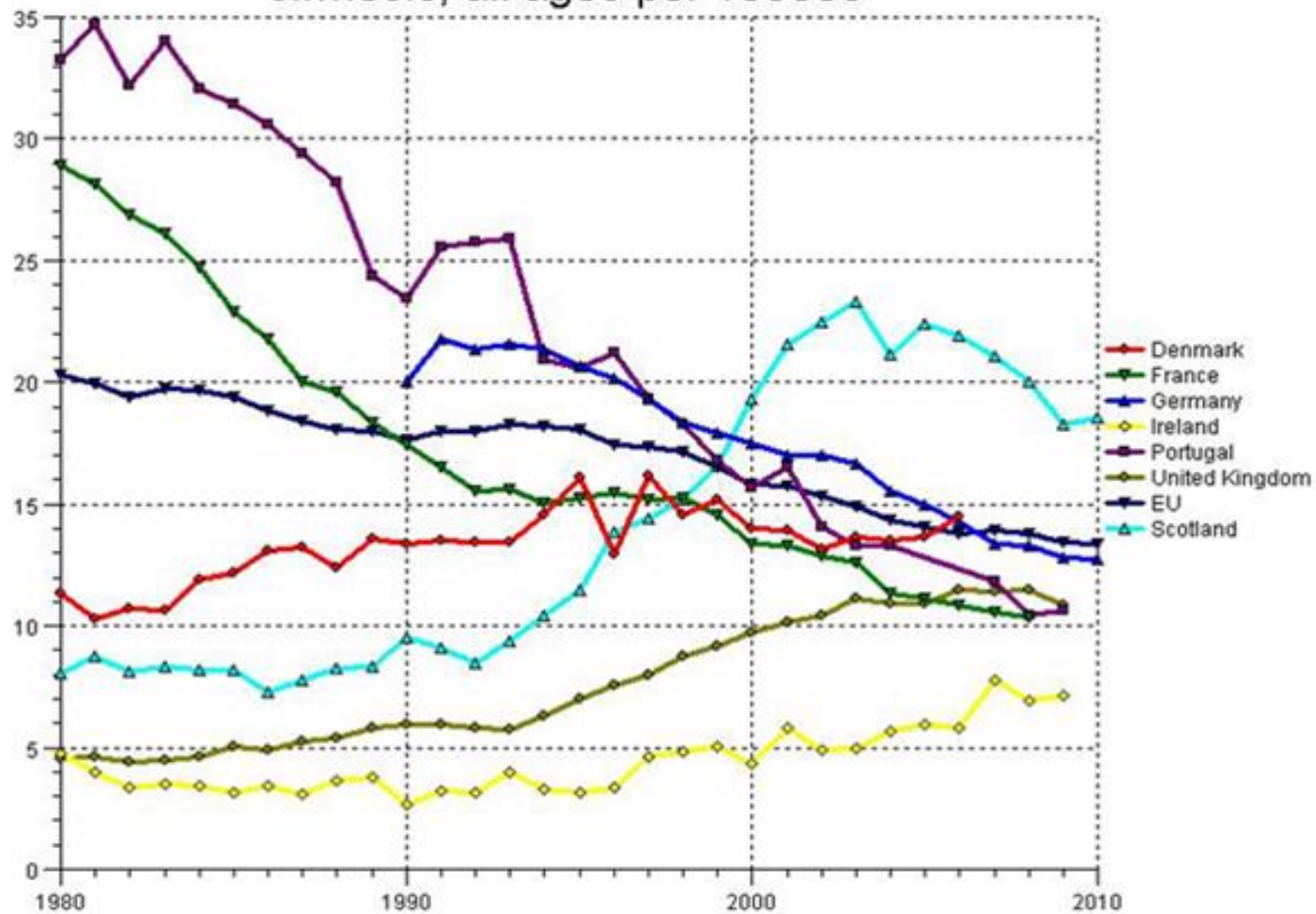
Epidemiological data suggests that around half (47%) of incidences of type 2 diabetes, over a third of cases of hypertension (36%) and around 3 in 10 (29%) case of colon cancer are attributable to obesity.

Obesity is complex



Obesity is the outcome of a complex set of factors acting across many areas of our lives

SDR, chronic liver disease and cirrhosis, all ages per 100000



Scottish Schools Adolescent Lifestyle and Substance use Survey (SALSUS)

- Majority of young people do not use substances regularly
- Drinking alcohol at lowest level

Trends in weekly drinking, 1990-2013



In 2013, drinking in the last week was the lowest recorded since the time series began in 1990

Attitudes: OK to try drinking?

15 year olds

77%

decreased

from

82%

in 2010

13 year olds

42%

decreased

from

52%

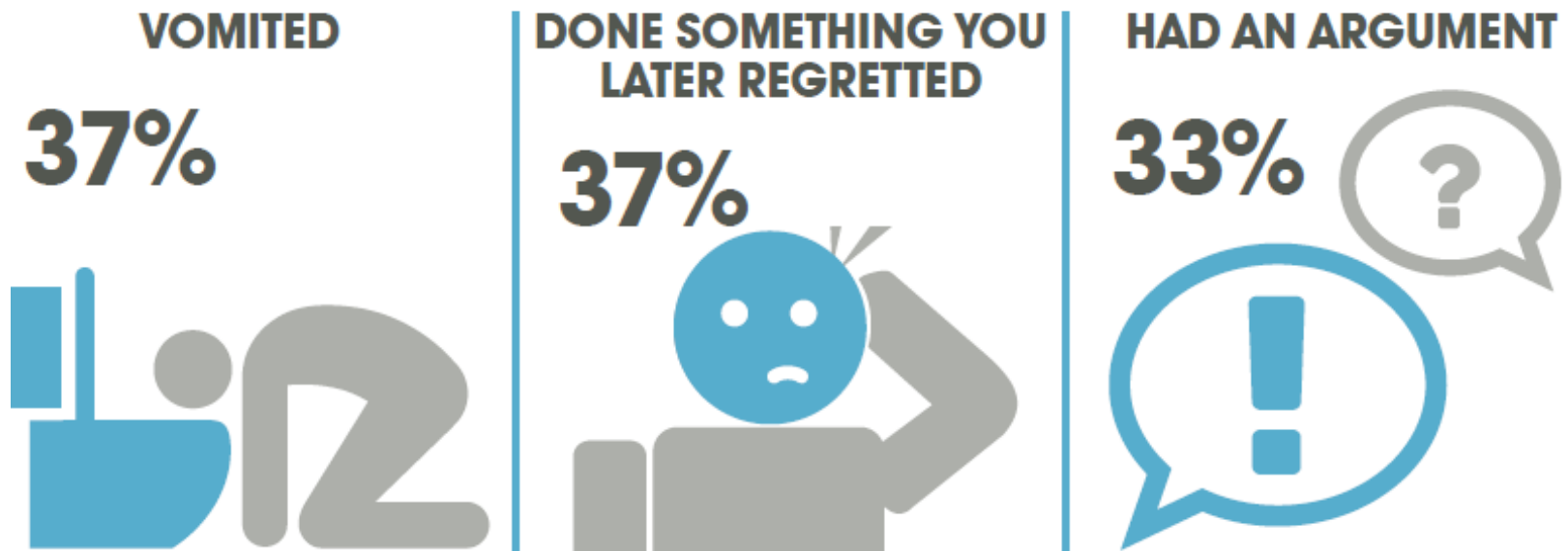
in 2010

Also fall in % that thinks it's alright to get drunk: 46%
olds; 13% → % 13 year olds

→ 22% for 15 year

Consequences, 15 year olds (top 3)

Of those who have ever drunk, 44% of 13 year olds and 60% of 15 year olds reported at least one negative consequences



Girls more likely than boys to report one or more negative effects due to drinking alcohol

Why this matters

- Reduction in immediate exposure to risky and harmful behaviour – injuries, admissions, unintended behaviour, etc.
- International studies have shown that delaying the age of onset of drinking may be important in reducing the risk of alcohol problems and dependence in later life.
- Changing (real and perceived) social and cultural norms around alcohol.
- Potential to reduce alcohol-related harm over the long term.

Creating a Tobacco Free Generation



In 2013 we launched our Tobacco Control Strategy:

- to reduce smoking prevalence across Scotland for the first time (**2013**) we set a date by which we hope to reduce smoking rates to 5% or lower.
- 2034 was chosen because those born in 2013 would be 21 in 2034.

Only one in five adults now smoke.

- The Scottish Household Survey 2014 shows that 20 per cent of adults now smoke – a drop of three percentage points on previous three years.
- Sharpest year-to-year decline in smoking rates since 1999.
- Smoking rates in the most deprived areas have dropped from 40 per cent in 2010 to 34 per cent in 2014.

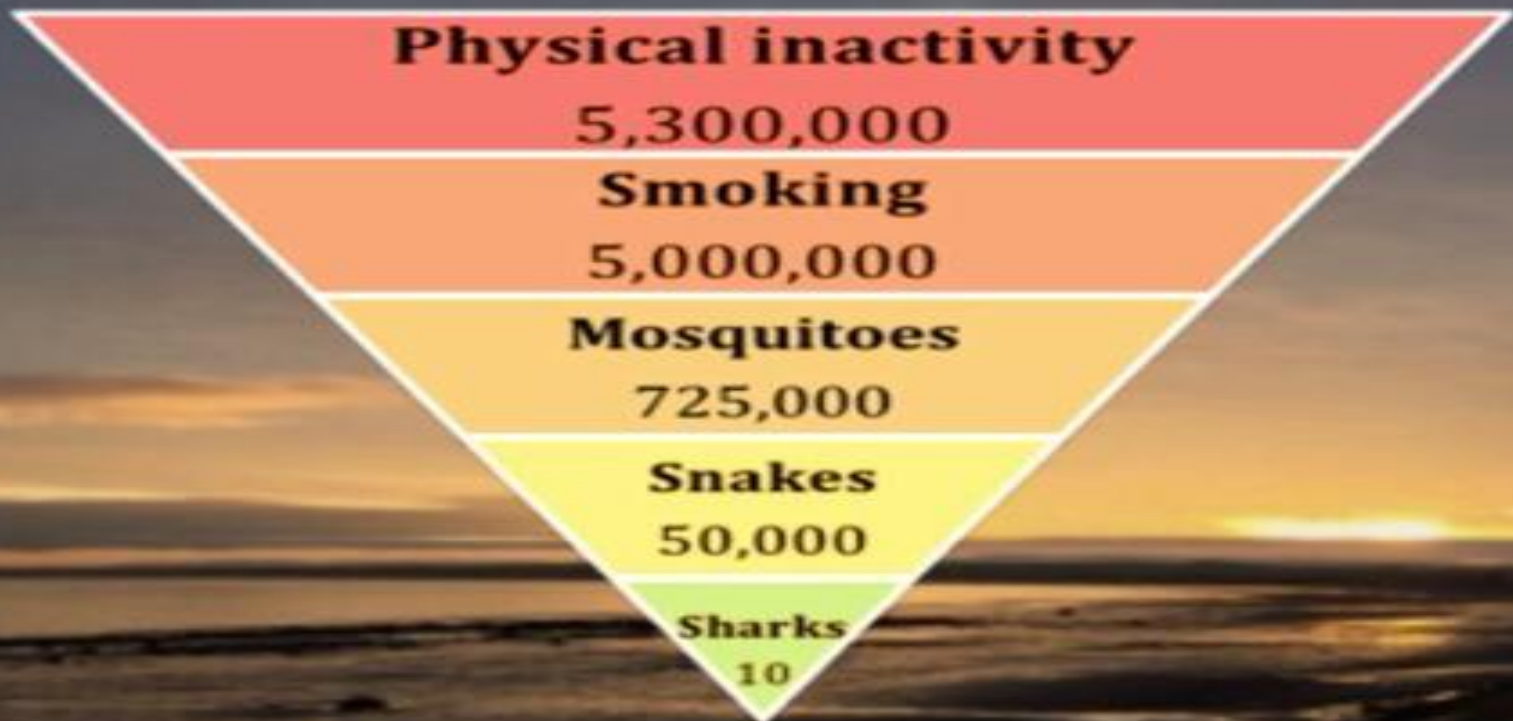


Tobacco use – young people

The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) (a series of national surveys on smoking, drinking and drug use indicates:

- 9% of 15 year olds (down from 13% in 2010) and 2% of 13 year olds (down from 3% in 2010) smoking regularly.
- 87% of 13 year olds and 66% of 15 year olds reported that they had never smoked – the highest level in the available time period (since 2002).

People Killed Annually by...








Credit- Nathan Stephens.

Risk reduction associated with physical activity

| Chronic condition | Risk reduction |
|---------------------|--------------------|
| All cause mortality | 30% risk reduction |
| CVD, stroke | 20-35% reduction |
| Diabetes | 30-40% reduction |
| Hip fractures | 36-68% reduction |
| Colon cancer | 30% reduction |
| Breast cancer | 20% reduction |
| Loss of function | 30% reduction |
| Depression/dementia | 20-30% reduction |

Physical activity benefits for adults and older adults

-  **BENEFITS HEALTH**
-  **IMPROVES SLEEP**
-  **MAINTAINS HEALTHY WEIGHT**
-  **MANAGES STRESS**
-  **IMPROVES QUALITY OF LIFE**

REDUCES YOUR CHANCE OF

| | |
|--------------------------------|-------------|
| Type II Diabetes | -40% |
| Cardiovascular Disease | -35% |
| Falls, Depression and Dementia | -30% |
| Joint and Back Pain | -25% |
| Cancers (Colon and Breast) | -20% |

What should you do?

For a healthy heart and mind

To keep your muscles, bones and joints strong

To reduce your chance of falls

Be Active

Sit Less

Build Strength

Improve Balance

VIGOROUS

MODERATE



MINUTES PER WEEK

75 OR 150

VIGOROUS INTENSITY
(BREATHING FAST
DIFFICULTY TALKING)

MODERATE INTENSITY
(INCREASED BREATHING
ABLE TO TALK)

OR A COMBINATION OF BOTH

BREAK UP SITTING TIME

2 DAYS PER WEEK

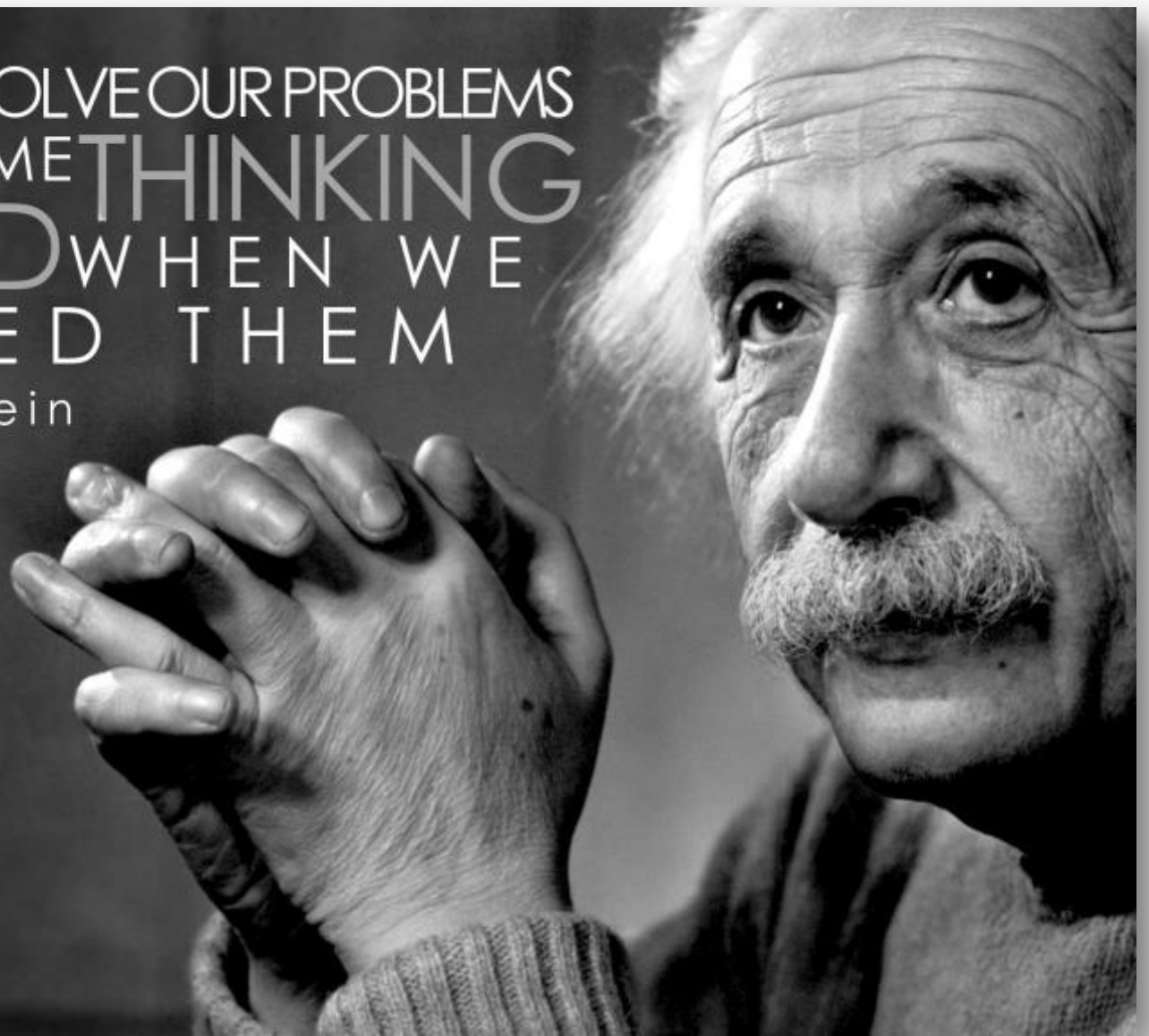
Something is better than nothing.

Start small and build up gradually:
just 10 minutes at a time provides benefit.

MAKE A START TODAY: it's never too late!

WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM

-Albert Einstein



OCTOBER 4, 2010

Environment Special:
The oceans—why 70%
of our planet is in danger

The Facebook Movie:
The secret history of
social networking

TIME

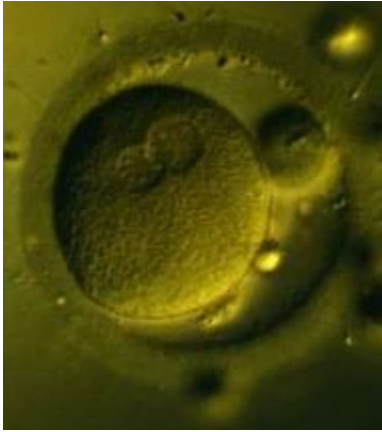


How the first nine months shape the rest of your life

The new science
of fetal origins

BY ANNIE MURPHY PAUL

www.time.com



Developmental origins of adult disease

- Cancer
- Cardiovascular disease
- Allergies
- Asthma
- Hypertension
- Diabetes
- Obesity
- Mental illness
- Arthritis
- Osteoporosis
- Cognitive decline

Prenatal health and life outcomes

Unequal beginnings

A child's long-term well-being is more profoundly shaped by influences in pregnancy than used to be realised

Apr 4th 2015 | From the print edition



2.3k



131



Getty Images

<http://www.economist.com/news>

Early BRAIN DEVELOPMENT

Brains are built over time, from the bottom up.

In the first few years of life, 700 new neural connections are formed every second. After this period of rapid proliferation, connections are reduced through a process called pruning.

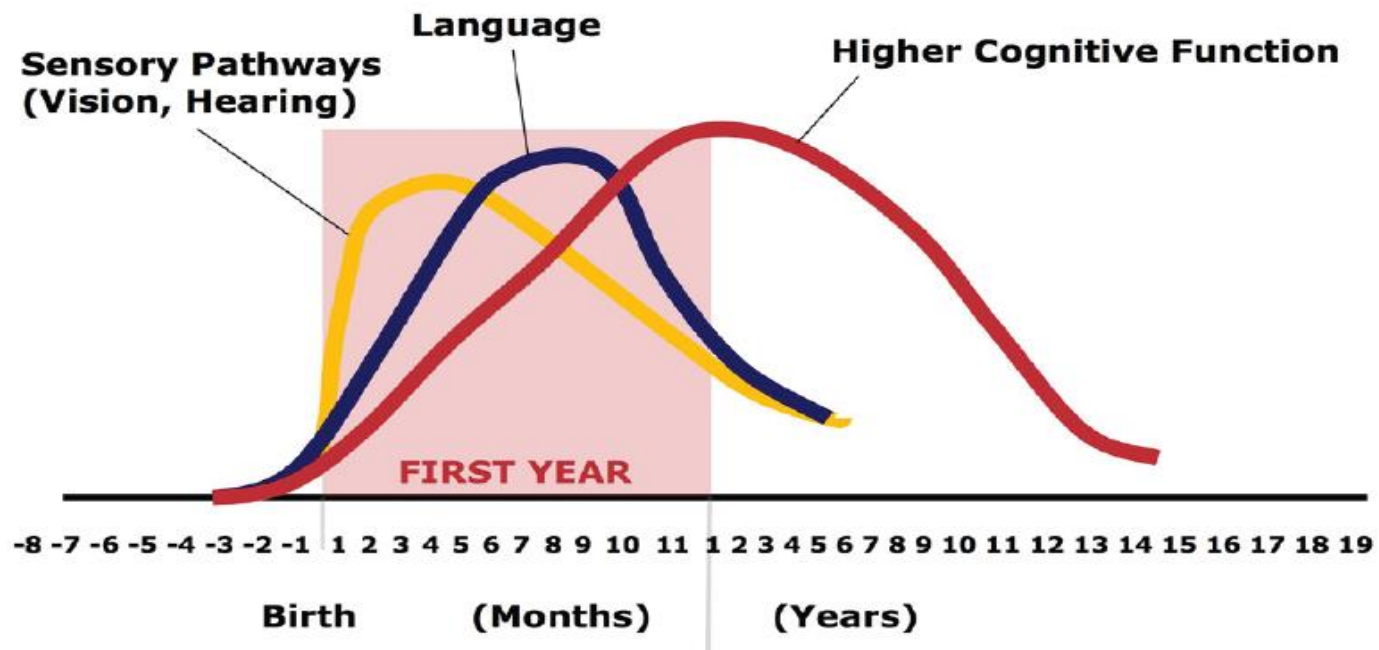
Connections proliferate and prune in a prescribed order, with later, more complex brain circuits built upon earlier, simpler circuits.



Center on the Developing Child
HARVARD UNIVERSITY

Human Brain Development

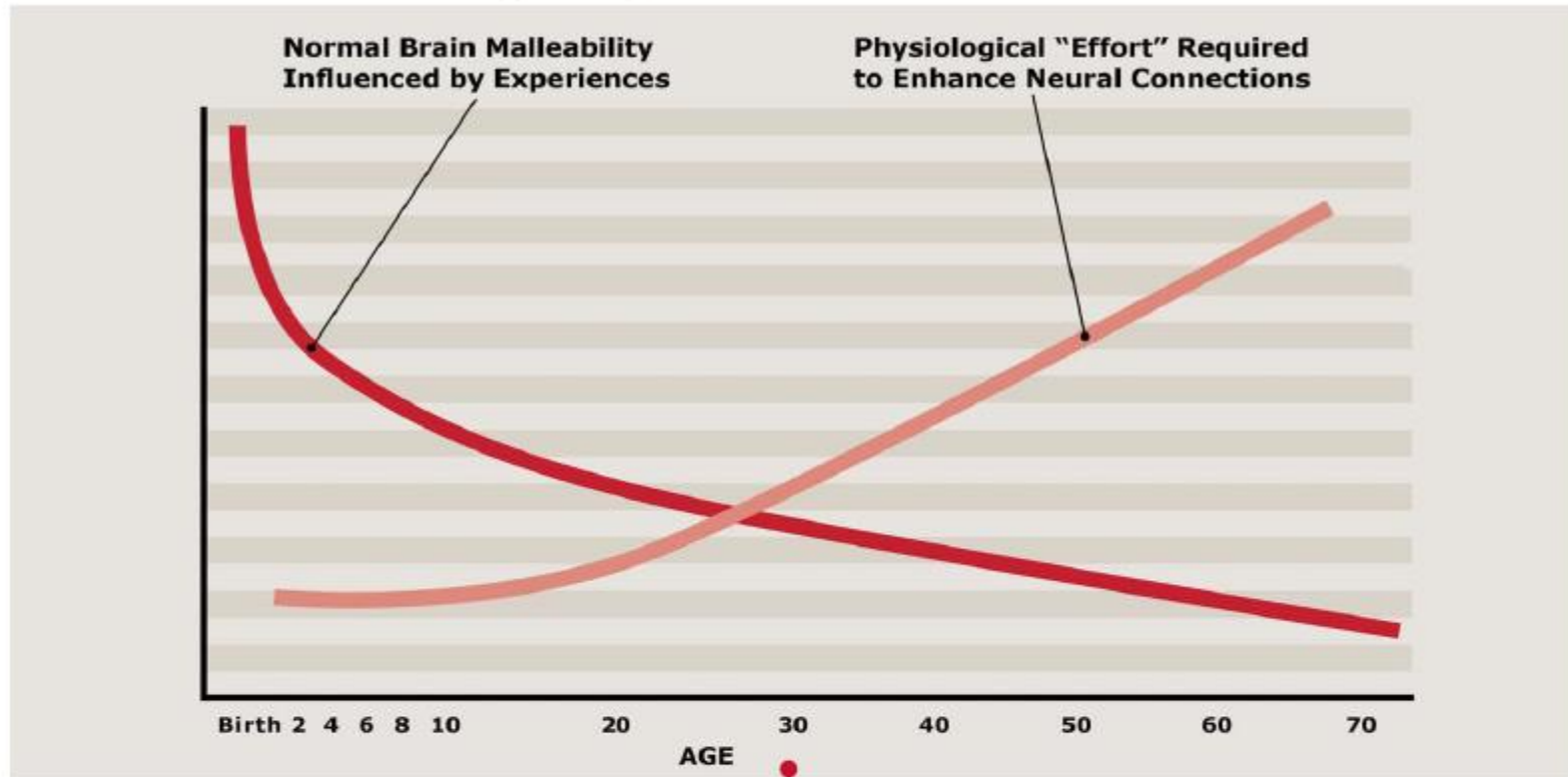
Neural Connections for Different Functions Develop Sequentially



Source: C.A. Nelson (2000)

CORE CONCEPTS IN THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT

The Ability to Change Brains and Behavior Decreases Over Time



7

As the maturing brain becomes more specialized to assume more complex functions, it is less capable of reorganizing and adapting. For example, by the first year, the parts of the brain that differentiate vocal sounds are becoming specialized to the language the baby has been exposed to and are already starting to lose the ability to recognize important sound distinctions found in other languages. As the brain prunes away the circuits that are not used, those that are used become stronger and increasingly difficult to alter over time. Declining plasticity means it's easier and more effective to influence a baby's developing brain architecture than it is to rewire parts of its circuitry in the adult years. In other words, we can "pay now" by ensuring positive conditions for healthy development, or "pay more later" in the form of costly remediation, health care, mental health services, and increased rates of incarceration. *Graph Source: P. Levitt (2009)*

2 The interactive influences of genes and experience shape the

3 The brain's capacity for change decreases with age. The brain is most flexible, or "plastic," early in life

4 Cognitive, emotional, and social capacities are inextricably intertwined throughout the life course. The brain is a highly interrelated organ, and its multiple functions operate in a richly coordinated fashion. Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities, and together they are the bricks

5 Toxic stress damages developing brain architecture, which can lead to life-long problems in learning, behavior, and physical and mental health.

For more information, see "The Science of Early Childhood Development" and the Working Paper series from the National Scientific Council on the Developing Child.

www.developingchild.harvard.edu/library/

Child Development –nature and nurture

- First 1000 days critical – prenatal and postnatal environment
- Effects of maltreatment on development persist across the life course
- New genetics suggest certain genotypes are a risk factor in adversity , but also confer resilience

Early Years – Shared Vision

getting
it right
for every child
in Lanarkshire

To make Scotland the best place in the world

to grow up in by improving outcomes and reducing inequalities for all babies, children, mothers, fathers and families across Scotland, to ensure that all children have the best start in life and are ready to succeed.



Early Years Collaborative

- Global Aim :Scotland is the best place to grow up and the best place in the world to bring up children
- First ever national , multi agency Quality Improvement Programme led by Community Planning Partnerships

National Outcomes

- Our children have the best start in life and are ready to succeed.
- We have improved the life chances for children, young people and families at risk.
- Our young people are successful learners, confident individuals, effective contributors and responsible citizens.

The benefits of having a laugh with your little one

Your child is

**30x
more**

likely to laugh
at something
when they are
with you.



Babies learn to laugh

before they learn
to talk, crawl, or walk.

The
average
3 year
old laughs
300
times a day



Laughter
improves your
little one's
quality of
sleep

Happiness and laughter

is contagious - just

**watch a baby
in a full belly laugh**

HA HA HA HA

HA

The
more you and
your little one
LAUGH
the more
likely

you are to
LIVE LONGER



1 minute
of intense
laughter
sets your heart
at the same level as

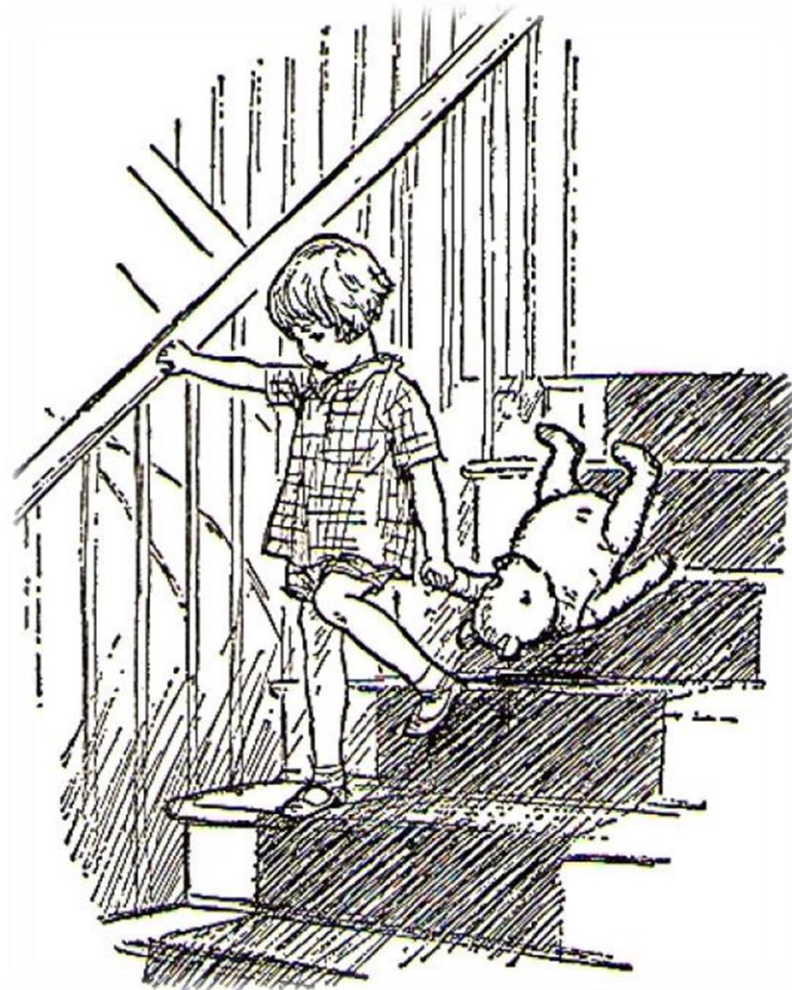
10
minutes



Here is Edward Bear coming downstairs now, bump, bump, bump, on the back of his head, behind Christopher Robin.

It is, as far as he knows, the only way of coming downstairs, but sometimes he feels that there really is another way...if only he could stop bumping for a moment and think of it!

A. A. Milne



Getting in touch with me



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