

Lead Poisoning in the UK Today

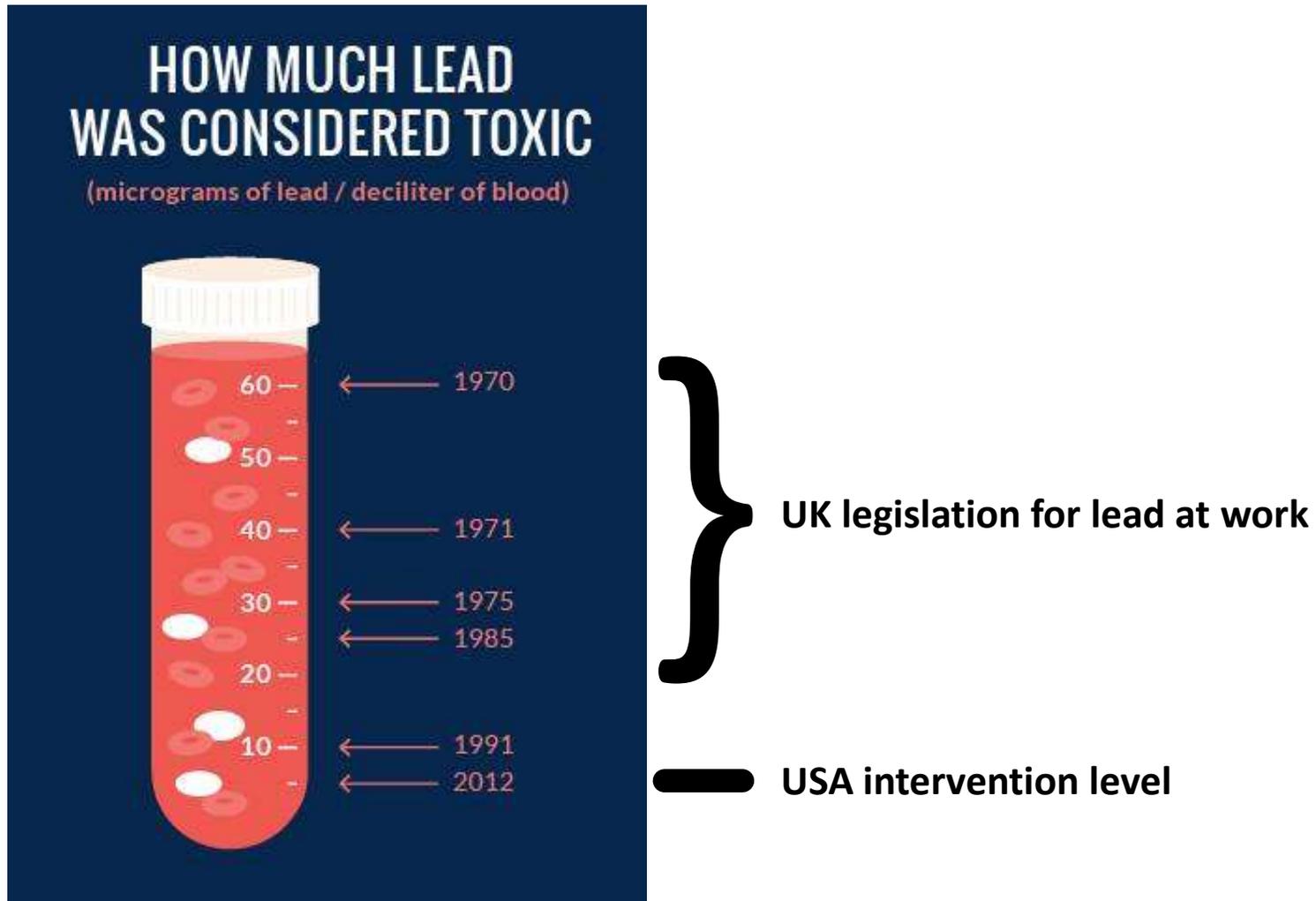
5th March 2017

v 2.1

What I need to tell you about lead

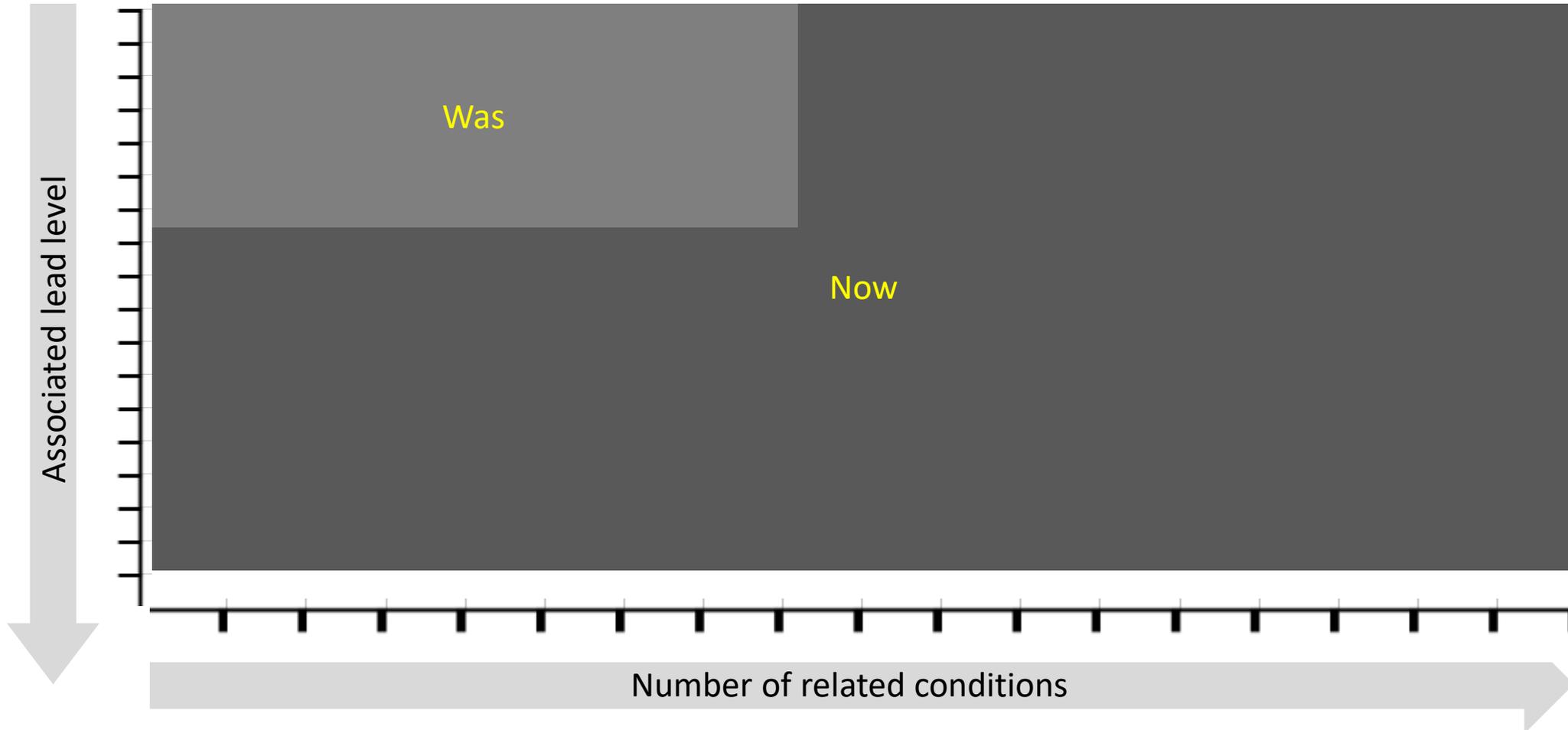
- How we got here
- Why the problem is bigger than we thought
- What the health impacts are
- How many people are affected
- Where the lead is coming from
- How little does it take
- What is happening in the USA
- Economic impact
- What can be done

Recent history of lead knowledge



No known safe level of lead

We thought it was a smaller problem, but...



Environmental and incidental
bone lead accumulation

A life with lead below 5 $\mu\text{g}/\text{dL}$



Low birth weight (S)
Reduced foetal growth (S)

Problem behaviours (S)
Attention problems (S)
Lower academic achievement (S)
Decreased IQ (S)
Reduced cognitive function (S)
Delayed puberty (L)
Electro-cardiogram abnormalities (L)

Kidney disease (S)
Essential tremor (L)
Clinical cardiovascular diseases (L)

A life with lead between 5 and 10 $\mu\text{g}/\text{dL}$



Reduced post-natal growth (S)
Spontaneous abortion (L)
Preterm birth (L)

Decreased hearing (S)
Delayed puberty (S)
Hypersensitivity (L)
Autism (1)

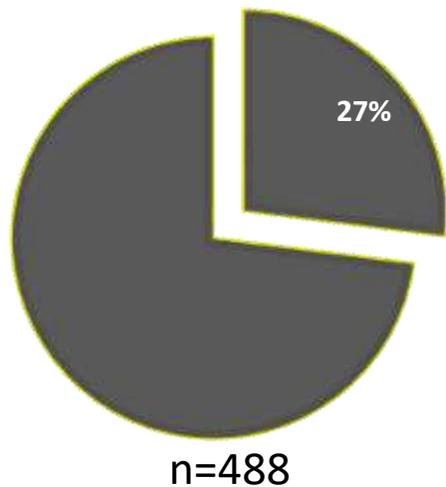
Increased blood pressure (S)
Essential tremor (S)
Psychological effects; depression, anxiety, panic (L)
Motor neurone disease (L)
Cardiovascular disease - stroke, heart attack, coronary (L)

Alzheimer's? (2)
Dementia? (3)

How much lead poisoning is in the UK?

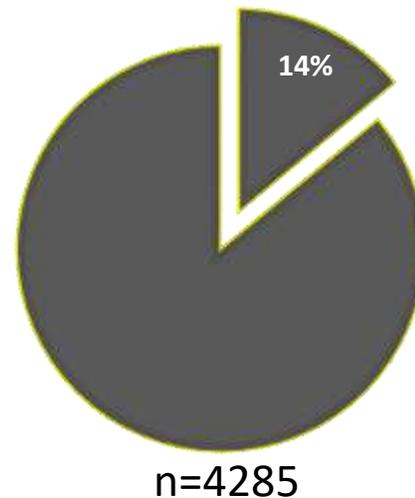
- Very little research has been done in the UK
- Quarterly Journal of Medicine, 2015, noted one study since 2000
- Found research, percentages above 5 $\mu\text{g}/\text{dl}$:

30MTH OLDS



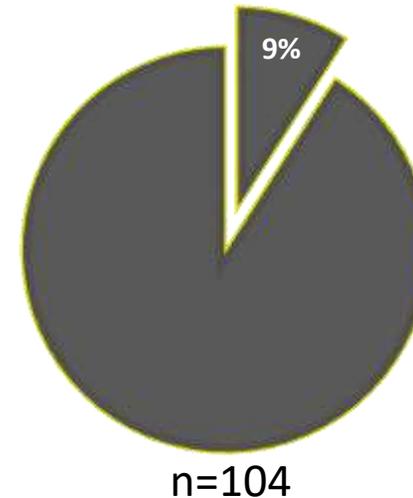
Arch Dis Child 2009;94:844-848

PREGNANT WOMEN



PLOS ONE 2013; 0072371

SEN CHILDREN



Arch Dis Child 2014;99:A133-A134.

Some Lead Exposure Source Examples



Some More Examples of Lead Exposure Sources



Affinity Water – Only 2 out of 84558 customer tap tests failed for lead. Elsewhere?



Some More Possible Lead Exposure Examples



Further research may be needed to assess the health impacts of lead from these and other sources

One case

- Child in Camden Borough living in a co-owned flat
- Lead levels 11 to 15 $\mu\text{g}/\text{dl}$
- Mother also had elevated levels
- Effects attributed by the mother to lead
 - Autism
 - Bad behaviour
 - Stomach pains
 - Hand drop – unable to feed himself at 3 years old
- Possible exposure routes
 - Renovation of windows
 - Work on lead pipes
 - Construction near his school
- Could ignorance have damaged this child for life?

How much lead does it take?

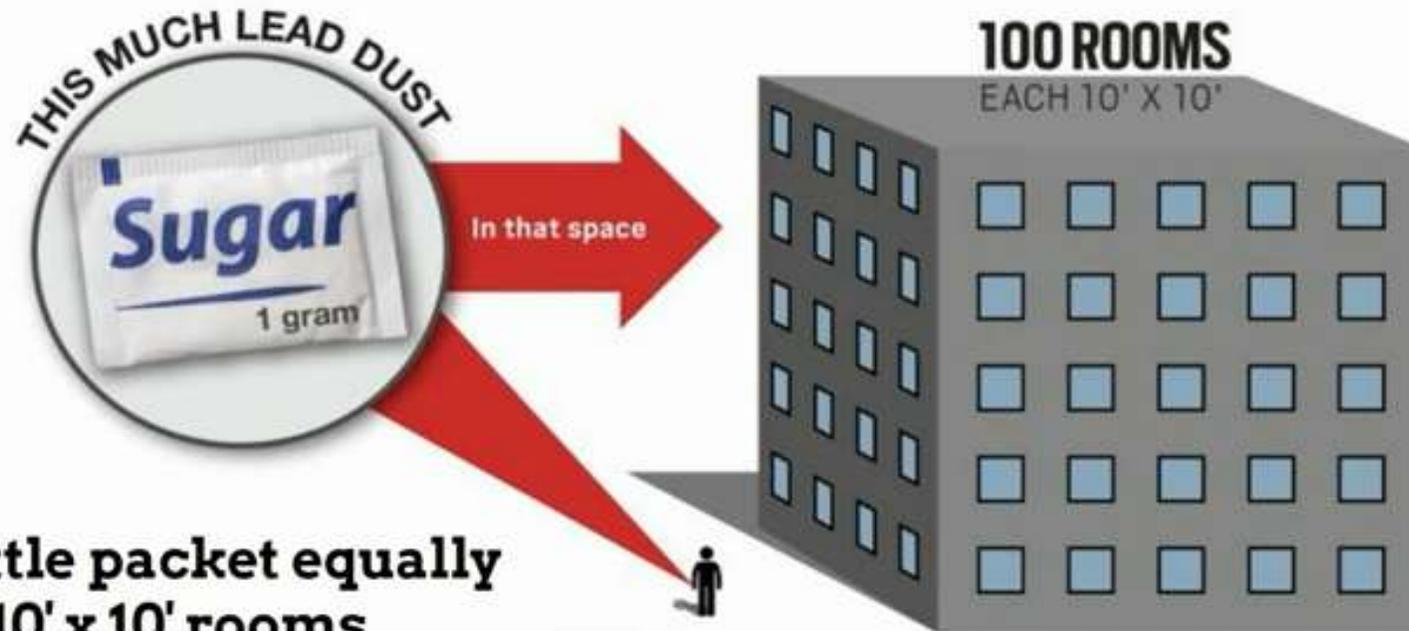
2 X TOO MUCH

**Think about
this sugar
packet**

**Picture it
filled with
lead dust**

**Spread that little packet equally
through 100 x 10' x 10' rooms**

**That amount of lead dust in each room would still be twice
the hazard level**

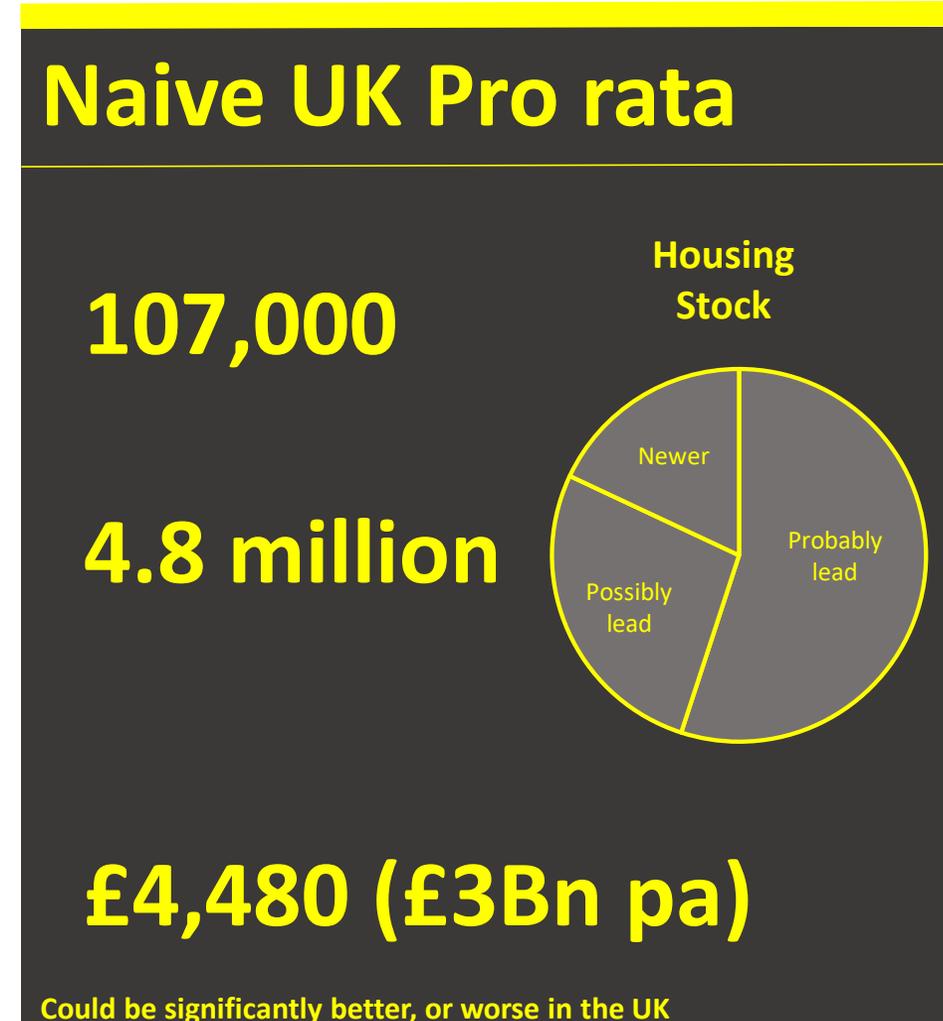


What are other countries doing?

- US EPA
 - Lead poisoning: **number one** environmental health threat to children ages six and younger in the U.S
- Ben Carson, US Housing and Urban Development
 - Lead prevention and treatment to become a **top priority** across the country.
- US Presidential Task Force
 - Reducing lead exposure in children is a **priority**
- Costs of lead poisoning, e.g. education, health care, social, ...:
 - Estimates, per year:
 - USA **\$43Bn** pa (Environmental Health Perspectives, 2002)
 - France **€23Bn** pa (Environmental Health, 2011)
 - Simple UK population prorata = **£7Bn - £19.5Bn** pa
 - Lead paint hazard control gives **17 to 221** times RoI (Environ Health Perspect. 2009)

Some Numbers – At any one time

USA Government Center for Disease Control



Summary – We can save misery and money

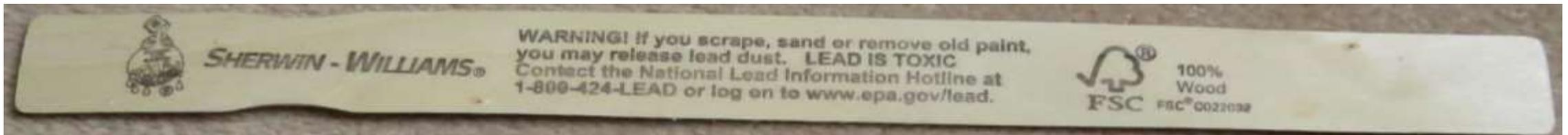
- Lead is still around
- No safe blood lead level in children has been identified
- Available data suggest many in the UK could be affected
- It could be costing £billions
- The USA are taking this very seriously
- Most agree there is a big problem
- **LET'S DO SOMETHING**

What can be done

- Institutions
- Retailers
- Manufacturers
- Services
- Government

What can be done

- Institutions
 - Home surveys to including warnings, or tests
 - Establish a 'lead safe' training and certification scheme for painters and builders
 - Establish post-work lead clearance standards
- Retailers
 - Antique shops to provide warnings on furniture, ceramics, doors, toys, etc.
 - Stock testing kits
 - Provide free paint stirrers with warnings



What can be done

- Manufacturers
 - All vacuum cleaners to include HEPA filters
 - Label articles for food preparation and serving with more than 90ppm lead
 - Abrasives to have warnings on paper and packaging
 - Paint stripper to warn that lead could be left exposed
 - Phase out lead from light aircraft engines
 - Exclude lead plasticisers from PVC, windows, pipes – Probably done?
 - Develop a consumer lead dust ‘traffic light’ test
 - Red = $>250\mu\text{g}/\text{sq ft}$
 - Amber = in between
 - Green = $<40\mu\text{g}/\text{sq ft}$
- Services
 - Door dippers to provide warnings
 - Double glazers to provide warnings where lead decoration is applied

What can be done

- Government
 - Regulatory
 - School tests for paint, dust and water
 - Extend Housing Health and Safety Rating System (HHSRS) to adults
 - Implement equivalent of US 'Renovation, Repair and Painting' standard
 - Lower CLAW suspension, action and surveillance levels
 - Advisory
 - Improve DEFRA advice on DIY
 - Fix the DEFRA lead website
 - DEFRA or NHS to provide a help line
 - Legislative
 - Bring forward legislation to ban lead in road markings
 - Ban lead in light aircraft
 - Phase out lead bullets in recreational shooting
 - Health
 - GPs to recognise BLLs lower than the normal range as dangerous
 - PHE to conduct research into UK blood lead levels
 - Depending on the result, introduce screening of children

What I am doing

- Wrote to DEFRA (Andrea Leadsom) -> DoH -> Public Health England
- Hope to present to PHE consultation on screening this year
- Writing to industry, e.g. test kits in B&Q, update web site requests
- Sharing with other campaigners in USA and Australia
- Helping people with concerns via Facebook
- Self:
 - Blood lead level 5.4 $\mu\text{g}/\text{dl}$ (e. g. 2.5 times likelihood of stroke, Navas-Acien, 2006)
 - Apply lead-safe practices in DIY tasks
 - Diet – Calcium, iron, fruit and veg
 - Exercise – Keep the bones strong, keep the lead in
 - Behaviour – Shoes off, wash hands

Campaign

- Social
 - Email uk1@leadsafeworld.com
 - Facebook Lead Safe World UK
- Benjamin Franklin, July 31, 1786, letter on lead, “you will observe with concern how long a useful truth may be known and exist, before it is generally received and practiced on”