



# Whitehall II 30<sup>th</sup> Anniversary

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# Why population cohort studies?

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- Study influence and interplay of biology, environment and lifestyle on health and wellbeing in population sub-groups over time
- Benefits
  - Real world populations
  - Exposures over time – repeat measures
  - Multiple risk factors
  - One risk factor on multiple outcomes
  - Familial clustering of risk and disease
- Disadvantages .....



# Population cohorts in the UK

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- Long history of funding population cohorts
  - Doll's GP cohort first to show harmful effects of smoking
- MRC funded cohorts include
  - Longest continuously running birth cohort
  - Largest study of women's health
  - Pre-conception birth cohort
  - UK Biobank
- Enabling UK environment
  - Consent for data collection and follow up
  - Data linkage
  - Cutting edge science



# Findings from UK cohort studies

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- 1946 birth cohort – childhood circumstances effect adult physical and mental health and survival
- Cognitive Function and Ageing Study – accurate assessment of dementia prevalence in past 20 years
- Whitehall study – understand the social gradient of health
- ALSPAC – evidence for back to sleep campaign
- EPIC Norfolk – exercise, healthy diet, not smoking increases life expectancy by 14 years

# Maximising the Value of UK Cohorts

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- UK supports an unparalleled collection of cohorts
  - insights into health, wellbeing
  - contributed to public health policy and clinical practice
- MRC Strategic priority - maximise the value of these assets for new scientific discovery and to inform policy
  - Review to map the landscape of all large UK population cohorts (funded by MRC and other funders)

Anticipated benefits for funders, academics, policy makers and industry

# Overview of the Portfolio

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- 34 of the largest UK Cohorts - 19 MRC funded and 15 supported by (10) other funders
- 2.2m people in the UK participate in cohort studies
- Diverse coverage of population – across life course, socioeconomic, ethnicity, intergenerational
- 92% females over 45 – (62% excluding million women)
- Half of cohorts followed >20 years
- Different scientific focus
- ~£30m pa spend on cohorts

# Review Findings

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- Similarities in types of variables collected – smoking, physical activity, alcohol, diet, physical characteristics, social and economic circumstances
- Two thirds collect data on cognitive function or mental health
- 31 have linked to routine data
- Biological samples collected in 31 cohorts
- High throughput science



# Recommendations

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- Improve cohort discovery and data sharing
- Adoption of common data standards, improving meta-data quality to enable more cross cohort analyses
- Explore more cost effective methods of establishing and maintaining cohorts
- Increase the research and translational potential of cohort studies
- Build skills and capacity in analysing complex datasets