International Phenome Centre Network

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Advanced Research for Innovative Global & Personalised Health

The International Phenome Centre Network (IPCN) is a global research consortium working to transform health care globally and improve disease prevention, detection and treatment by understanding the dynamic interactions between our genes, environments, microbiomes, diets and lifestyles.

A global network...

A partnership among leading research centres around the world, the IPCN uses cutting-edge analytical and mathematical approaches to study large, global data sets of rich biological information to unravel the molecular underpinnings of disease risk in individuals and populations. Our aim, through research harmonisation and high-quality data, is to create a global atlas of human disease and explain biology and disease in greater detail, accuracy and efficiency than previously possible.

...for a global health need

The world faces an unprecedented confluence of environmental and lifestyle factors that are dramatically increasing the risks of chronic disease. Global warming and its multiple biological consequences, antimicrobial resistance, aging populations, and the prevalence of lifestyle-related illnesses are systematically affecting world populations and posing the greatest scientific and public health challenges seen in modern times. Such challenges require global solutions on relatively short timescales that will rely on international cooperation and aligned research.

Metabolic phenotyping

IPCN research will measure an individual's health status that enables disease stratification and the development of new medicines via metabolic phenotyping. This uniquely comprehensive analysis of biological fluids or tissue samples can be used for predicting, preventing and treating disease.

Mass spectrometry and nuclear magnetic resonance (NMR) spectroscopy are technology drivers for high quality phenotyping.

This research will advance precision medicine by better characterising the pathology of disease and the role of the microbiome. The results will improve patient care, clinical outcomes and global health for diseases of worldwide significance, including:

- cancers
- mental health
- stroke
- autism
- obesity
- metabolic diseases
- type 2 diabetes

A global research consortium

Initiated by the MRC-NIHR National Phenome Centre at Imperial College London, the IPCN includes more than a dozen international partners with regional, multi-institutional hubs in: **Australia, Canada, China, Japan, Singapore, Taiwan, the United States, and the United Kingdom.**

High speed, efficient and accessible

85% of research is wasted because of poor study design and inaccessible study results.

The IPCN will generate and leverage harmonised data from around the world that is well-managed and accessible.

It enables affordable, timely and relevant research for individual and global health care problems.