Care Research & Technology Centre

Pioneering new technologies aimed at supporting people to live well for longer.
The Care Research & Technology Centre is one of seven Centres that collectively make up the UK Dementia Research Institute (UK DRI).

The Centre is based at Imperial College London and runs in collaboration with the University of Surrey and the Surrey and Borders Partnership NHS Foundation Trust (SABP).

The Centre leads the Minder Study (page 8) which is pioneering a smart home system to support people living in their homes.

“We have brought together a diverse team of doctors, engineers and scientists who together can harness recent advances in artificial intelligence, engineering, robotics and sleep science to create novel technologies that will deliver the highest quality dementia care in the home by establishing a smart home environment.”

- Professor David Sharp
  Centre Director, UK DRI CR&T
The Centre has six core research groups with three cross-cutting themes.
The **Biosensor Hardware** team develop novel bioelectronic systems focusing on compliance - specifically, low cost, unobtrusive, non-contact sensing technologies.

The **Point-of-Care Diagnostics** team investigate risk factors for adverse infective outcomes using synthetic biology methods to revolutionise the management of common infections.

The **Cognition & Behaviour** team develop novel ways to measure, understand, and treat behavioural effects of dementia, developing digital biomarkers for behavioral abnormalities.

The **Sleep & Circadian** team identify optimal approaches to monitor sleep and circadian rhythms at home and study new treatments for sleep disturbance produced by dementia.

The **Robotics & A.I Interfaces** team develop robotic devices to augment the capability of the Minder platform by supporting direct interactions with people living with dementia, carers and their homes.

The **Machine Intelligence** team develop the Minder platform and its machine learning capabilities through cross-cutting data science programmes.

The **Helix Centre** works with people living with dementia, scientists, clinicians and engineers through co-design processes to maximise the acceptability and usability of the Minder platform and associated products.

The **Health & Social Care Translation** team ensure safety and wellbeing of participants with a team of experts including Occupational Therapists, General Practitioners, Local Authorities and Clinical Consultants.

The **Software Engineering** team develop the Minder Platform which is a healthcare data collection, integration, clinical monitoring and research platform. It features a clinical dashboard and visualisation, analysis, and reporting tools.
Minder is the name of the study and system we are developing.

The study is developing a smart home system to support people living in their homes and learn more about different health conditions. This is to help us treat and manage these conditions in the future.

It takes the scary bits away; it means I’m not on my own.

I feel reassured that there’s a way ahead and it’s not a dark future.

It is invisible support for carers.
A note about privacy, none of these devices can photograph or film people in their homes.

As part of this study, some sensors and electronic devices are placed in the homes of people living with dementia. By monitoring activity and taking daily measurements we can support the health and wellbeing of our participants remotely.
Study sponsors:  

Health & social care partners:

Primary care partners:

Technology partners:

Funded by

Find out more:  
UK DRI CR&T  
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