

UK COSMOS NEWSLETTER 2026

Updates from the international study of mobile phone use and health

Thank you for taking part in the COSMOS study, one of the largest international studies investigating mobile phone use and health. As mobile phones and wireless technologies have become part of everyday life, important questions have emerged about whether long-term patterns of use may influence health. The COSMOS study was established to investigate these questions by following participants over many years and linking information on technology use with health.

In this newsletter we share updates from recent COSMOS research exploring areas of interest, including studies investigating the association of mobile technologies and brain tumours, headaches, sleep quality and hearing. The work also improves how mobile phone use is measured in large population studies. We outline below the next phase of COSMOS follow-up and the continued work of the international COSMOS collaboration.

We thank you for your continued participation in the study and for your contributions to support this important long-term research. We hope you find the updates in this newsletter interesting.

Professor Paul Elliott, CBE, FRS, Principal Investigator, **UK COSMOS**

Professor Mireille B. Toledano, Co-Principal Investigator, **UK COSMOS**

COMING SOON: A COSMOS SURVEY

We are continuing to monitor the health of UK COSMOS participants, and we will shortly invite you to complete a follow-up survey online from home.

The survey asks about technology use as well as other lifestyle factors that may be linked to long-term health. The survey will ask about:



how you use mobile phones and newer technologies, such as 5G



social media and night-time use, and how these may affect your sleep and exposure to blue light



your lifestyle and your general health

The survey will include four parts:

1. Questionnaire

2. Cognitive test

3. Hearing test

4. Environment

Even if your lifestyle or how you have used your mobile phone has not changed, or has changed only slightly, your continued participation is vital in helping us understand the long-term effects of mobile phone use and digital technologies on health.

Why do a cognitive test and a hearing test? Existing research suggests that various lifestyle factors and hearing may be linked to memory and changes in cognitive performance. There is also uncertainty about whether exposure to radiofrequency electromagnetic fields (RF-EMF) may play a role. By taking part, you help us to better understand these connections and support research aimed at improving long-term health. You will also have the option to view your cognitive and hearing test results.

The different parts of the survey do not need to be completed all at once – you can take a break and return later, and the survey will pick up where you left off.

REFRESHER: WHAT IS COSMOS?

COSMOS (Cohort Study on Mobile Phone Use and Health) is a large international study investigating whether use of mobile phones and other digital technologies may affect health. In the past two decades, the use of new communication technologies, like mobile phones and wireless internet, has rapidly increased. These devices are a source of exposure to radiofrequency electromagnetic fields (RF-EMF), so it is important to understand whether human exposure to RF-EMF from mobile phones may have an effect on our health.

Over **100,000 participants** from the UK are taking part, making the UK the largest contributor to the international study.

COSMOS AT A GLANCE:



Over 100,000 participants in the UK



Approximately 300,000 participants across Europe



Participants followed for over 15 years so far



Self-report combined with mobile network operator information on mobile phone use



Findings published in leading international scientific journals

RESEARCH FINDINGS FROM COSMOS

Overall, our findings to date in the COSMOS study are reassuring.

Your participation and contribution have been invaluable in helping us investigate important health questions related to mobile phone use.

However, continued follow-up of participants through surveys and linkage to health data remains essential. This is because for some health conditions, such as cancers and neurodegenerative conditions, it may take many years for possible effects to become apparent.

Key questions investigated to date include:

BRAIN TUMOURS



In a COSMOS study including over 265,000 participants across the UK, Denmark, Finland, The Netherlands, and Sweden, **we found no evidence of increased risk of brain tumours associated with mobile phone use - even beyond 15 years (Feychting et al., 2024)**. However, we need to continue surveillance of this important question to look for possible longer-term effects.

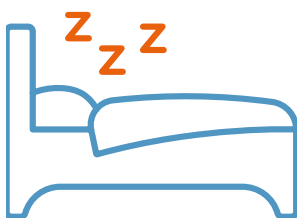
HEADACHES, TINNITUS AND HEARING LOSS

In a COSMOS study of 78,000 participants from the UK and The Netherlands, **we found no link between time spent on calls and headaches.** However, frequent texting was associated with more frequent headaches, suggesting that factors such as posture or lifestyle, rather than RF-EMF exposure, may explain the findings ([Traini et al., 2024](#)).

In a COSMOS study of 25,000 participants in Sweden and Finland, people who spent the most time on phone calls reported slightly more headaches, but this was a **weak association that was not explained by RF-EMF exposure.** Researchers also reported **no evidence of association between mobile call time and either tinnitus or hearing loss** ([Auvinen et al., 2019](#)).



SLEEP QUALITY



Among 25,000 COSMOS participants in Sweden and Finland, those who spent **4+ hours per week on calls reported slightly more sleep difficulties.** However, overall, it seems likely that sleep issues were linked to behavioural factors, such as excessive or late-night phone use, rather than RF-EMF exposure ([Tettamanti et al., 2020](#)).

OTHER RESEARCH QUESTIONS

Researchers have been working to better understand the mobile phone use and RF-EMF exposure of COSMOS participants. We compared your self-reported survey information on mobile phone use against data from mobile network operators. This showed that COSMOS participants tended to **underestimate rather than overestimate their mobile phone use** in the survey when their use levels were high ([Toledano et al., 2018](#)).

Building on this finding, we have used advanced statistical methods to combine your self-reported survey information with data from mobile network operators ([Reedijk et al., 2024](#)). These improvements help ensure that COSMOS research provides robust and reliable evidence about potential links between mobile phone use and health.

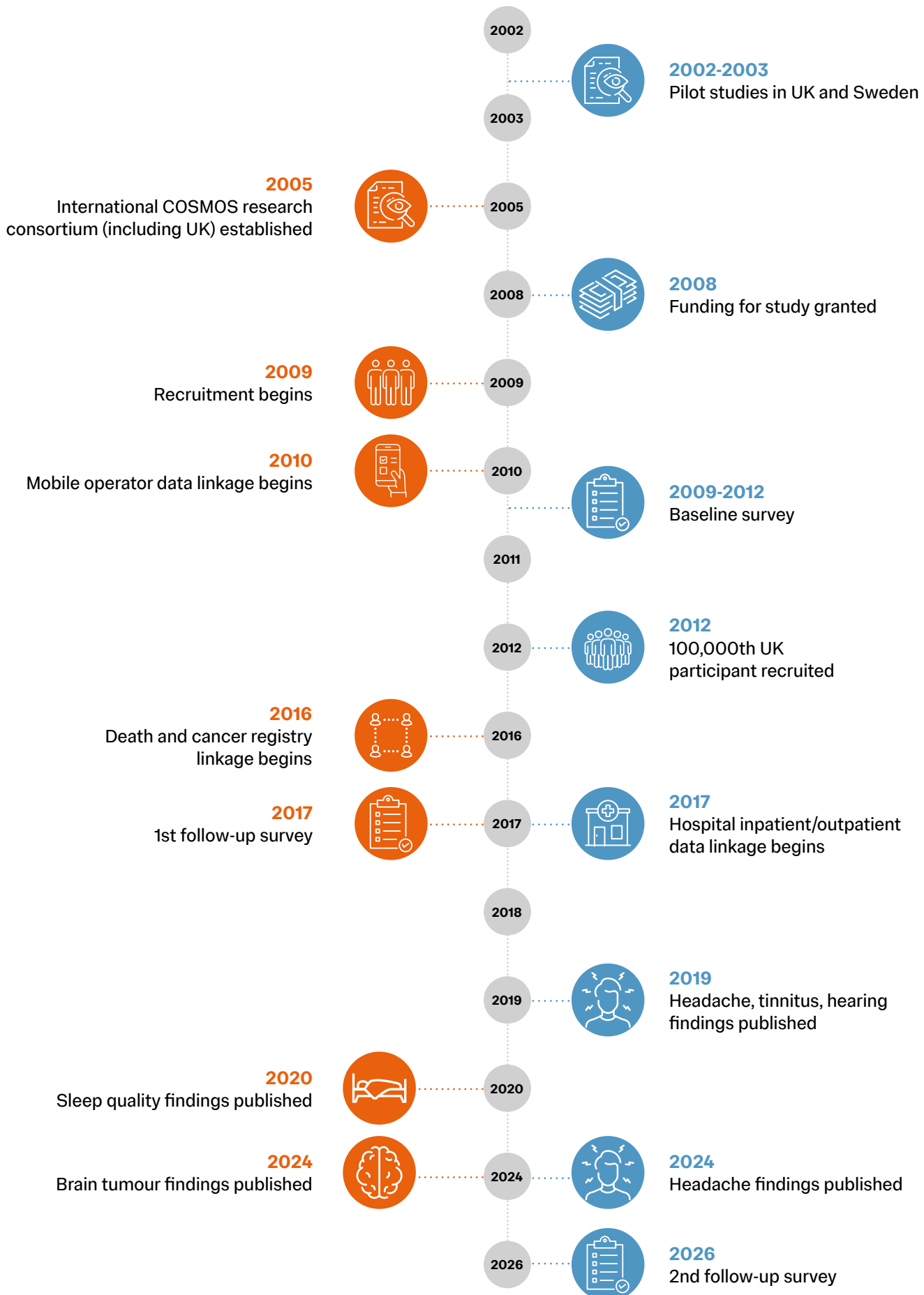
CURRENT AND FUTURE WORK

COSMOS continues to investigate how mobile phone use and digital technologies may relate to health over the long term.

Researchers are currently examining whether patterns of mobile phone use are associated with conditions such as obesity, heart disease, stroke and fertility problems. These analyses build on the detailed information collected from COSMOS participants over many years, as well as improved methods for estimating mobile phone exposure.

Future research will explore possible links between long-term mobile phone use and cognitive performance, brain diseases such as Alzheimer's disease and Parkinson's disease, as well as mental health. It will also focus on addressing public concern regarding 5G technology.

THE TIMELINE OF UKCOSMOS



UK COSMOS RESEARCH TEAM



Professor Paul Elliott

Principal Investigator and Head of the Department of Epidemiology and Biostatistics



Professor Mireille B. Toledano

Co-Principal Investigator and Director of the Mohn Centre for Children's Health and Wellbeing

Dr David Muller

Co-Investigator and Senior Lecturer in Cancer Epidemiology and Biostatistics

Professor Helen Ward

Collaborator, Professor of Public Health

Professor Adam Hampshire

Collaborator, Visiting Professor

Dr Rachel B. Smith

Mohn Research Fellow in Population Child Health

Dr Chiara Di Gravio

Research Associate

Dr Rie Goto

Research Associate

Dr. Catherine Sinfield

Senior Scientific Program Manager

Mr Joel Heller

Research Assistant

INTERNATIONAL COSMOS COLLABORATORS



Professor Maria Feychting
(Karolinska Institute)



Dr Aslak Harbo Poulsen
(Institute of Cancer Epidemiology)



Professor Hans Kromhout
(University of Utrecht)



Professor Anssi Auvinen
(Tampere School of Public Health)



Professor Joachim Schuz
(International Agency for Research on Cancer)

Professor Christoffer Johansen
(University of Copenhagen)

Professor Roel Vermeulen
(University of Utrecht)

Professor Isabelle Deltour
(International Agency for Research on Cancer)

WE WELCOME YOUR FEEDBACK



If you have any comments about the COSMOS study or this newsletter, we would be pleased to hear from you. You can contact the UK COSMOS study team at:

Email: ukcosmos@imperial.ac.uk | info@ukcosmos.imperial.ac.uk

Website: ukcosmos.org