

Time matters in brain health

How should society prepare for a growing population at risk of neurodegenerative diseases?

Alastair Noyce

Wolfson Institute of Preventive Medicine,
Queen Mary University of London, London, UK





Additional authors

- **Professor Gavin Giovannoni**, Blizard Institute and Wolfson Institute of Preventive Medicine, Queen Mary University of London, and Barts and The London School of Medicine and Dentistry, London, UK
- **Professor Philip Scheltens**, Alzheimer Center Amsterdam, Amsterdam University Medical Centers, Amsterdam, Netherlands
- **Professor Daniela Berg**, Department of Neurology, Christian-Albrechts University of Kiel, Kiel, Germany
- **Professor Laurie Brown**, Institute for Governance and Policy Analysis, University of Canberra, Canberra, Australia
- **Professor Kris Dierickx**, Centre for Biomedical Ethics and Law, Catholic University of Leuven, Leuven, Belgium
- **Professor Giovanni Frisoni**, Centre de la Mémoire, University Hospitals and University of Geneva, Geneva, Switzerland
- **Mr Jean Georges**, Alzheimer Europe, Luxembourg City, Luxembourg
- **Professor John Hardy**, Department of Neurodegenerative Diseases, University College London, London, UK
- **Dr Karl Heilbron**, 23andMe, Inc., Sunnyvale, CA, USA



Why does time matter?



People at risk

'Brain diseases' are generally regarded as a problem for the elderly, but neurodegeneration begins in middle age



Growing burden

The number of affected individuals is predicted to rise; we are poorly prepared to deal with this



Window of change

There is a window of opportunity to make changes earlier, to reduce risk and prevent or delay the onset of symptoms



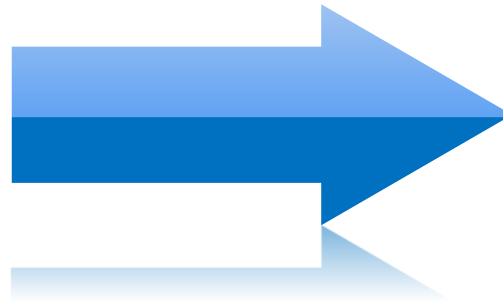
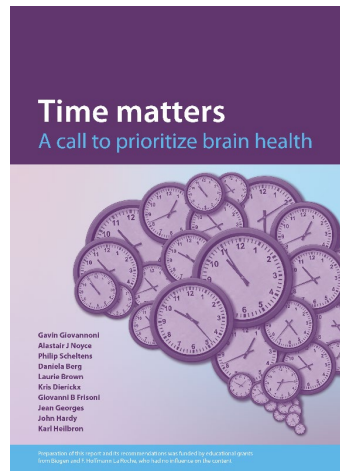
High priority

We need to encourage society and individuals to prioritize brain health and prevent neurodegeneration



How was the report developed?

An expert group developed **evidence-based recommendations** and a **call to action** encouraging positive behaviour change and policies to promote brain health, working towards the prevention of neurodegenerative diseases



Health promotion



Clinical



Research



Priority recommendations

- The message “**what’s good for your heart is generally good for your brain**” needs to be widely communicated and understood
- The group produced 18 recommendations:
 - 5 health promotion
 - 2 clinical practice
 - 11 research/decision-making



Encourage behaviours at all ages that help to improve brain health, such as healthy eating and taking adequate exercise



Identify the effectiveness and cost-effectiveness of interventions to promote brain health



Understand the extent to which an individual’s awareness that he or she has strong risk factors for a neurodegenerative disease may motivate them to change their behaviour, and how best to support that behaviour change



Assess the relative weight of different risk factors (e.g. lifestyle, genetic and molecular factors) and the interactions between them, so that decision-makers can decide how to prioritize and address them



What next?

A collaborative effort is needed to achieve our common goals



Behaviour change

The report highlights the need for everyone to prioritize their brain health and to implement behaviours that reduce the risks as they age



Education

Policymakers, public health bodies and health professionals must educate and empower the public



Research

Further work is needed to validate diagnostic tools to identify people at risk and develop effective treatments



Health checks

National programmes could be introduced in the future to assess risk for neurodegeneration and detect and treat disease early



Acknowledgements and disclosures (1)

- Support for the development of this publication was provided by Oxford Health Policy Forum CIC, UK, funded by grants from Biogen and F. Hoffmann-La Roche, who had no influence on the content
- **Alastair Noyce** is funded by the Barts Charity. He reports additional grants from Parkinson's UK, Virginia Kieley Benefaction, grants and non-financial support from GE Healthcare, and personal fees from Bial Pharmaceuticals, Britannia Pharmaceuticals, Profile Pharmaceuticals, F. Hoffmann-La Roche and Biogen
- **Gavin Giovannoni** has received compensation for serving as a consultant or speaker for, or has received research support from, AbbVie, Actelion, Atara Bio, Biogen, Canbex, Celgene, EMD Serono, Japanese Tobacco, Sanofi-Genzyme, Genentech, GlaxoSmithKline, GW Pharma, Merck, Novartis, F. Hoffmann-La Roche, Synthon BV and Teva
- **Philip Scheltens** has received consultancy/speaker fees (paid to the institution) from Biogen, People Bio, Roche (Diagnostics) and Novartis Cardiology. He is Principal Investigator of studies with Probiodrug, EIP Pharma, IONIS, CogRx, AC Immune and Toyama



Acknowledgements and disclosures (2)

- **Daniela Berg** has within the last year received compensation in the form of consultancies, honoraria or grants from AbbVie, Biogen, BIAL, Lundbeck, UCB Pharma, Zambon, Desitin, GE Healthcare, Janssen Pharmaceutica NV, German Parkinson's Disease Association, German federal support (BMWi and BMBF), Parkinson Fonds Deutschland, European Union, Novartis Pharma and Damp Foundation
- **Jean Georges** reports that Alzheimer Europe has received grants from AbbVie, Amgen, Biogen, Danone, GE Healthcare, GSK, Janssen, Lilly, Lundbeck, MSD, Novartis, Otsuka, Pfizer and F. Hoffmann-La Roche
- **John Hardy** has received funding and support from Dementia Research Institute, Medical Research Council, Wellcome Trust Hardy, Dolby Family Fund and National Institute for Health Research University College London Hospitals Biomedical Research Centre
- **Karl Heilbron** is an employee of and has stock, stock options, or both, in 23andMe
- **Laurie Brown, Kris Dierickx** and **Giovanni Frisoni** have no disclosures to report
- The authors acknowledge the expertise of **Dr Nick Fahy**, University of Oxford, in providing guidance about policy recommendations and processes