

Medical Research Funding in Horizon 2020

At its final meeting in October 2012, EMRC, the **European Science Foundation (ESF)** Standing Committee for the European Medical Research Councils prepared a statement regarding the discrepancy between public investment for healthcare and public support for (broadly defined) biomedical and health research with the intention of informing the public at large and the medical world including the medical science organisations and patient organisations, of the consequences of this situation.

The situation of biomedical research input in € and scientific output is further detailed in **Table 1**.

(Bio)medical research OUTPUT	EU25	USA
No. of publications (2009) (world = 100%)	~ 38%	~ 33%
No. of top 10% or top 1% higher ranked publications (2007) (relative numbers)	1	2
No. of citations (2007) (world = 100%)	~ 42%	~ 48%
Public INPUT for (bio)medical research	EU21	USA
€ per person / per year (purchase power equivalent 2009 for Health and Biomedical Research)	~ 40	~ 143
EU FP7	<15% of total budget for 'health research'	
Horizon 2020 proposal	10.5% plus unknown share of ERC grant money but about 30% already committed to EIT, IMI, industry, etc.	
Comparative data		
€ per person / per year for global healthcare (purchase power equivalent in €)	2,730	6,400
€ spend for alcohol and tobacco	~ 800	n/a
Industrial return		
R&D Investment by pharma (2011 estimate)	27.5 bn €	38.5 bn \$
Number of biotech companies (relative number)	1	4

Table 1: (Bio)medical research input by public funding in the European Union (2009-2011) compared with the research output as assessed by publications and citations (2007-2009) in comparison with other related data and industrial R&D investment in health research.

Acronyms:

EIT: European Institute of Innovation and Technology

IMI: Innovative Medicines Initiative

These data clearly indicate a persistently low public funding for biomedical research especially at the EU level.

The final target for the statement was the European Parliament that has to decide about the budget for research in Horizon 2020 and each Member of the European Parliament received a copy of the statement (attached) in November 2012. This statement received the unanimous approval and support of the 32 members of EMRC along with 14 major medical and scientific societies and organisations throughout Europe (the full list can be found in the attached document).

At the end of 2012, EMRC was replaced by the **ESF Scientific Review Group for the Biomedical Sciences (SRG-MED)** who wishes today to renew its statement supporting the increase of the health research funding budget in Horizon 2020. In parallel, **Science Europe's** newly appointed **Medical Sciences Scientific Committee (MED)** has added its valued support to this statement with the same desire expressed by the SRG-MED to amend the Horizon 2020 budget so as to implement a major step forward in collaborative, international healthcare research in Europe. Together, ESF and Science Europe have strong arguments in favour of an action that would fill a major gap in the European landscape for biomedical/medical/health research and strengthen innovation in an essential field of our societies.

More precisely **we ask the Members of the European Parliament, the European Commission and the Council of Europe**

- to substantially increase the budget for biomedical research, estimated at 5bn € for the next 7 years;
- to create a funding mechanism for health research aiming at supporting excellent non-commercial academic research projects that require a broad international collaboration as to really affect the health prospects of the EU citizens;

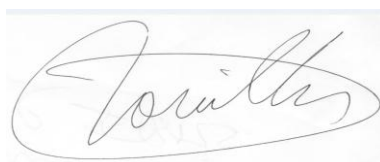
and to note that:

- this funding mechanism should work as the successful European Research Council and be driven by peer review and excellence;
- together with the introduction of a single European patent and a new Clinical Trials Regulation, such a new funding mechanism could reinvigorate the historically strong tradition of leadership of Europe in innovative health research.

For these reasons, we hope that a large number of Members of the European Parliament will support this strategy to amend the Horizon 2020 plan so as to allow the new project for funding multinational health research. Such a support would create a multiple win-win situation not only for present and future patients but also for healthcare providers, funders and the European healthcare industry. This project is fully in line with the EU policy for an innovative Europe working towards the wellbeing and welfare of all European citizens.



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Sources:

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Dr. Michael Stolpe's personal communication (Kiel Institute for the World Economy, University of Kiel (DE)).

List of supporting organisations:



Alliance for Biomedical Research in Europe

The Alliance for Biomedical Research in Europe and its supporting member societies:

- European Association for the Study of Diabetes (EASD)
- European Atherosclerosis Society (EAS)
- European Association for the Study of the Liver (EASL)
- European CanCer Organisation (ECCO)
- European Federation of Neurological Societies (EFNS)
- European Renal Association – European Dialysis and Transplant Association (ERA-EDTA)
- European Respiratory Society (ERS)
- European Society of Cardiology (ESC)
- European Society of Clinical Microbiology and Infectious Diseases (ESCMID)
- European Society of Hypertension (ESH)
- European Society of Human Reproduction and Embryology (ESHRE)
- European Society of Radiology (ESR)
- United European Gastroenterology (UEG)

Other supporting organisations:

- European Orthopaedic Research Society (EORS)
- European Organisation for Research and Treatment of Cancer (EORTC)

EMRC statement on medical research in the EU

Health and healthcare are highly appreciated in all societies and in Europe we collectively spend about 10% of the GDP on healthcare, corresponding to 2730 € per person per year (Fig 1). Health research and health researchers are also highly esteemed by society. However, we spend in Europe only about 40 € per person per year on the broad field of biomedical and health research (Fig 2). Spending per capita for alcoholic beverages and tobacco is about 20-fold higher. Through their research funding agencies most countries in Europe spend in the region of 25-35% of their global research budget on biomedical and health-related research. However, the European Framework Programmes have spent less than 15% on medical research and, in the new Horizon 2020 plans, only about 11% of the total budget of 80 billion € will be dedicated to biomedical and health-related research. In contrast, biomedical and clinical research generate more than 50% of the research output in Europe, as measured by number of publications and citations.

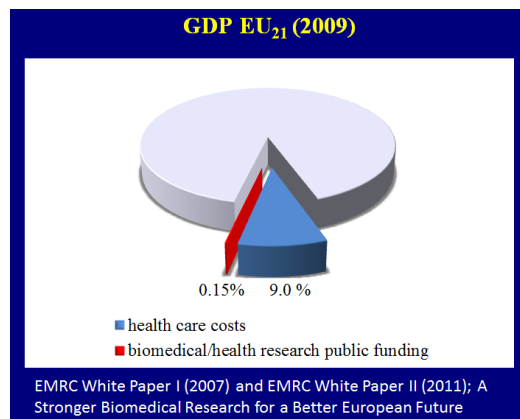


Figure 1: public spending for health care and health research in the EU₂₁ (2009).

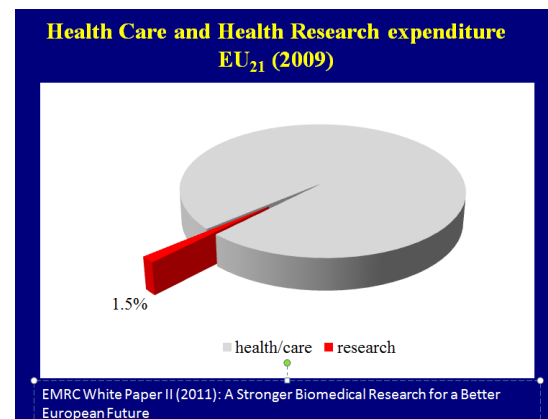


Figure 2: EU₂₁: Austria-Belgium-Czech Republic-Denmark-Finland-France-Germany-Greece-Hungary-Ireland-Italy-Netherlands-Norway-Poland-Portugal-Slovakia-Spain-Slovenia-Sweden-UK

Both in absolute and relative (to GDP) terms, the US spends more on health care (about 6400 € at purchasing power parity exchange rates). Moreover, about 50% of all public US money for research is going to medical research and that translates to their public spending for biomedical research being about 3.5- fold higher per capita (143 € for 2009) than is the case in Europe.

This situation is far from optimal for the European citizen and societies as biomedical and health-related research generates multiple win-win situations:

1. First, patients (and this is sooner or later all of us) profit from better research as it improves their health and quality of life. There is indeed ample evidence for a very high societal impact of biomedical research (examples are the benefit of vaccination; imaging; drugs against infections; cardiovascular and metabolic disease, and major progress in survival of children with cancer with the large majority now surviving instead of dying from their disease). This also translates into an important economic benefit as amply demonstrated in a UK report (Wellcome Trust RAND publication, 'Medical Research: What's it worth?') indicating a return on investment of more than 30% per year for many years.
2. The health research community and the healthcare providers also profit from better understanding of diseases, from prevention, diagnosis to treatment as it allows better decisions and greater efficacy of their interventions.

3. Industry is also highly dependent on public healthcare investment and research and so it is no surprise that the bigger public investments in biomedical research attract all large and medium sized (SME) pharmaceutical and biotechnology industries. In practice, private investment by pharmaceutical companies in the US is 2-fold higher than in Europe and the gap is growing. For biotech and SME companies the difference is even greater with more than 80% of the private investments being located in the US and thus 4-times greater than in Europe. Moreover, biomedical research is very dependent on innovation and biomedical and clinical research is, by itself an important driver of innovation and high quality employment.
4. Healthcare costs are rising rapidly around the world but a large percentage of these expenses are not productive (30% in the US according to a recent 2012 report in the New England Journal of Medicine and in the Journal of the American Medical Association, JAMA, and an unknown percentage in most European countries). Medical research could generate solutions to health problems so that health care €€€ are better invested and generate a better cost-benefit ratio.

How much longer can we accept these obvious weaknesses in Europe? Quousque tandem??

At its meeting in Prague on 4-5 October 2012, the Standing Committee of the European Medical Research Councils (EMRC) wished to attract the attention of all parties involved. First, the public at large should be better informed about the funding shortfall in Europe compared to the US as they are not only the final tax payers but also the first losers by this undesirable and unfortunate situation of biomedical and health research. Secondly, we call upon all patient organisations, scientific societies and medical academies, to convince our policy-makers to urgently change this research situation.

Above all, we ask the European Commission and especially the Commissioners for Research and Health, and all members of the EU parliament to amend the Horizon 2020 proposal on research so as to substantially increase the total amount of European investments in biomedical and health research. We ask them to increase their investment in the field of biomedical and health research in general, so as to reach at least the same level as generated by the national or regional funding agencies (25-35%). With due respect to the subsidiary principle, EMRC proposes as top priority to invest this extra European budget into a new funding mechanism (along the principles of the very successful ERC) to support clinical or health research projects that require a multinational approach to be efficient such as clinical trials for rare diseases, for research on new aspects of medicine such as personalised medicine, and for health research where answers require large cohorts of patients with longitudinal follow-up over the life course. A funding mechanism such as the one we propose is virtually totally lacking on a European scale today. Such a European Clinical Research Fund should be largely working with a "bottom-up" approach so that the best projects with the best return on investment would be funded. A budget of 1 billion € per year, with gradual increase over time, seems most appropriate to allow the support of studies that can really matter for healthcare in Europe and, indeed the world. In addition we ask the EU Parliament and Commission to start the process of a scientist-led overall strategic planning of health-related research in Europe and Horizon 2020 in order to promote innovation and combat the major challenges facing Europe. .

EMRC ask all parties involved to support such an innovative European initiative that would fulfill a real gap in the European Research Area and would benefit all its citizens and the world community.

Signed on behalf of all members of the Standing Committee of the European Medical Research Councils (EMRC) of the European Science Foundation (ESF):

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Approved and supported by the Alliance for Biomedical Research in Europe (see **Annex 1**).



Alliance for Biomedical Research in Europe

EMRC call for funding

List of supporting member societies

- European Association for the Study of Diabetes (EASD)
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- European Society of Hypertension (ESH)
- European Society of Human Reproduction and Embryology (ESHRE)
- European Society of Radiology (ESR)
- United European Gastroenterology (UEG)

Executive Committee:

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Vice President: Prof. K. Sipido, Belgium

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References:

ESF-EMRC White Paper I

Present Status and Future Strategy for Medical Research in Europe
November 2007

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