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Sir David Cooksey
Consultation Responses
Cooksey Review Secretariat
HM Treasury
1 Horse Guards Road
London
SW1A 2HQ

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Dear Sir David,

Re: Response to the Review of UK Health Research

The Physiological Society welcomes the Chancellor's proposals to increase the support for UK health research and development. A boost to the already successful UK basic biomedical research base, together with enhanced collaborations with university clinical departments and the NHS, offer the potential to deliver better health care and a competitive advantage for wealth creation. Rather than responding to the individual questions in the consultation, since this is being done in a separate response from the Biosciences Federation (BSF) of which our Society is a member, we are in this response focusing attention on a few important general points that may be overlooked by other organisations.

The internationally acknowledged success of the UK's basic life science research may lead some to suggest that priority should now be given to support for clinical research. Although clinical, like basic, investigators clearly need additional resources, we would argue that any increase in clinical research funding should not be at the expense of the preclinical sciences. The UK's relatively strong standing in basic preclinical research will not necessarily continue automatically (see below) and the long term benefits for this country, including those associated with wealth creation, may not materialise to the extent expected in the absence of enhanced investments. In this respect it is important to understand that the benefits from new discoveries in the life sciences may take a long time to materialise, and mostly depend on continued further detailed investigations by basic scientists, often in the context of intensive collaborations with clinical investigators. A vigorous and internationally acknowledged life science base is vital for expanding high-quality clinical research and for providing the right climate for investment by, for example, the pharmaceutical industry. In the intensely competitive world of life science research we note the continued supremacy of the US, the continuing and expanding strengths of Japan and Korea and the emergence of credible new competitors, for example China in the short-term and India in the long-term.

The MRC funds the whole range of biomedical research and has an international reputation for research excellence, including an outstanding portfolio of work in the developing world supporting the Government's international development agenda. It has a distinguished track record in producing major advances in clinical medicine and arguably has the best record in technology transfer and innovation of any of the UK Research Councils. Indeed further consideration should be given as to whether MRC Technology could be extended to absorb the knowledge and technology transfer needs of the new ring-fenced fund. However, a particular concern in recent years has been the increasing pressure on the MRC's research funds, resulting in very low success rates and the rejection of too many excellent (alpha-A rated) proposals. This represents many missed opportunities for gaining new and valuable knowledge and for expanding and consolidating recent discoveries. It also, in the long term, represents a significant loss to the UK economy and a serious threat to the continued excellence of the UK's strength in the basic life sciences. The Physiological Society would therefore advocate that the new ring fenced budget should specifically aim to strengthen the MRC and allocate it additional funding. Careful consideration should also be given to the potential knock on effects of the new funding arrangements on other major funders of health research, for example, the BBSRC, The Wellcome Trust, Cancer Research UK and the British Heart Foundation.

Over the years the Department of Health (DH) has recognised the importance of some areas of research to the delivery of effective, coherent and evidence-based patient care. However, we are aware of the problem that research in the NHS has suffered through the diversion of money intended for research and infrastructure development into direct patient care. We recognise that this has been due to intense pressure on NHS Trust managers to meet certain healthcare targets. However, one crucial objective of the arrangements for the new health research fund must be to ensure that resources intended for research are indeed spent on research. Considering that almost all high-quality clinical research is carried out by staff in university departments, many of whom of course also have honorary NHS appointments, it would be logical to focus support of clinical research from the new Health Research Fund on the universities rather than their associated NHS Trusts. This would also be much more helpful in enhancing the crucial collaboration between basic scientists and clinical investigators.

We would like to emphasise our support for the point made in the BSF response that the system for funding allocations should be based on the high quality transparent procedures developed by the MRC and its sister councils, not on the rather opaque arrangements currently operated by the DH. Also concerning governance, we do not think that the budget for the new Health Research Fund should be held separately from the other research councils. Medical research would then become separated from all other areas of scientific endeavour. The relative success of the UK's scientific enterprise, in spite of rather limited funding by international standards, is to some extent due to the Haldane principle as well as the benefits from having a science budget held by the Office of Science and Innovation (OSI) that spans the entire range of research from fundamental physics to medicine to social science and now also including arts and the humanities. This makes obvious sense, also with regard to interdisciplinary research.

Medicine is essentially applied physiology and rational scientifically based medicine (diagnosis and therapy) is unthinkable without the ground-breaking work undertaken by physiologists over the past century and very much continuing today. Diagnosis requires knowledge of the workings

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of the body (physiology) and one only needs to compare undergraduate medical physiology textbooks written 50 years ago with those available today to realise the enormous gains in specific and precise knowledge, from molecules to integrated function, that have occurred in our lifetime. It is essential that this process continues, since there are very many holes in our knowledge and ignorance is the greatest enemy of medical progress. Physiology is thus a key underpinning area of knowledge for clinical medicine and also for training in other life sciences such as biochemistry, molecular biology and genetics. Without this, people trained in these other disciplines can lack the fundamental physiological knowledge needed to translate their research results into relevant clinical applications, therefore slowing down medical innovation.

Physiological research is often done by relatively small teams supported by relatively modest grants, which are nevertheless crucial for success. Since government departments and funding agencies tend to measure their impact by the amounts of money distributed for various purposes, rather than the quality of the work done, they often forget about the very significant advances made by physiologists. The MRC is no exception! Physiologists (members of The Physiological Society) have in fact made extremely important discoveries that have been crucial to our present understanding of how the body functions (Nobel Prizes: Henry Dale [1936], Alan Hodgkin and Andrew Huxley [1963], Bernard Katz [1970], James Black [1988], Erwin Neher and Bert Sakmann [1991]), Rod MacKinnon and Peter Agre [2003]. Many of these discoveries have had very important consequences for medicine. For example, a very substantial part of our current therapeutic arsenal for serious disorders of the cardiovascular system are in fact based on agents interfering with ion channel function and this development would have been unthinkable without the basic knowledge gained from fundamental physiological studies. A fresh example is the work of Frances Ashcroft and her group of physiologists at Oxford University, whose basic research has revealed how sugar controls insulin secretion: this has been instrumental for important recent advances in therapy, particularly for child diabetes.

In conclusion, generating knowledge through excellent biomedical and clinical research, transferring that knowledge into medical practice and ensuring that the UK is internationally competitive, should be the primary objectives of the UK health research fund. It will therefore be very important that the new ring-fenced budget provides sufficient funding for excellent physiological and other basic science research, and supports its translation into clinical applications and medical research training.

Yours Sincerely



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