Treasury R&D Tax Reliefs: consultation

Background:

The Physiological Society has a 140 year tradition at the forefront of life sciences. It is the largest network of physiologists in Europe with academic journals of global reach. When physiologists collaborate around the world, their research contributes to a better understanding of the complex functions of living organisms. Expanding physiological knowledge helps us to understand how the body works. It also helps us to determine what goes wrong in disease, facilitating the discovery for new diagnostics, treatments and preventative measures.

Our work has demonstrated that investment in scientific research including physiology supports jobs and economic growth, improves national productivity, health and wellbeing and is vital to achieving many of the Government's ambitions.[1] Physiology and its subdisciplines are a broad and essential component of the research and innovation landscape, delivering key societal and economic benefits.

Physiology is the science of life. It is the branch of biology that aims to understand the mechanisms of living things, from the basis of cell function at the ionic and molecular level to the integrated behaviour of the whole body and the influence of the external environment. Research in physiology helps us to understand how the human body works in health and how it responds and adapts to the challenges of everyday life; it also helps us to determine what goes wrong in disease, facilitating the development of new treatments and guidelines for maintaining health. The emphasis on integrating molecular, cellular, systems and whole-body function is what distinguishes physiology from the other life sciences.

As such, physiology is a broad discipline underpinning the discoveries and innovations made in all its sub-disciplines including neuroscience, cardiovascular research and Sport and Exercise Science. Sport and Exercise Science makes a valuable contribution to the UK economy, not only in terms of the savings it makes for the health and social care system but also in its role as a significant driver of employment and economic growth. The Physiological Society demonstrated these economic and social impacts in its 2019 report *Sport and Exercise Science Education: Impact on the UK Economy.* The report's economic data found that Sport and Exercise Science higher education provision provides an impact of £3.9 billion in added income to the UK economy each year. This is equivalent to 147,300 jobs.

Furthermore, physiological research makes a significant contribution to the UK economy. Research into cold water immersion from the University of Portsmouth has reduced the human cost of drowning which is estimated at £63 million per year. Similarly, stair falls are the leading cause of accidental death in older people. Falls on domestic stairs cause over 350,000 injuries to older UK residents each year[2], with personal consequences such as loss of independence, hospitalisation, and even death, not to mention £2 billion in demands on the NHS. Sport and Exercise Science research is investigating how interrelated physical attributes such as strength, balance, and cognitive status on causing stair falls.

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[1] https://static.physoc.org/app/uploads/2019/10/11135853/Growing-old-better-Full-report-and-summary-document.pdf

[2] The Physiological Society, 'Growing Older, Better', https://static.physoc.org/app/uploads/2019/10/11135853/Growing-old-better-Full-report-and-summary-document.pdf, p42

Consultation questions:

Question 10: Do you think R&D tax reliefs could better incentivise R&D with specific social value, for example developing green technology? Could R&D tax reliefs be used to disincentivise R&D in certain fields?

A girl born in the UK today has a 1 in 3 chance of living to 100, and the chance of living to 100 will double in the next 50 years. While life expectancy has reduced slightly in the UK recently, over the last few decades it has increased significantly.

Healthy life expectancy, which is the number of years lived in good health, has also increased, but not at the same rate as life expectancy. This means people are living more years in poor health. Our ageing population, with greater proportion of life spent in poor health, will increase costs for the NHS and means we need to change how we approach work, finances, health and care, and housing. We must therefore ensure that greater focus is given to keeping people healthier, for longer and R&D tax reliefs could better incentivise R&D with this goal in mind.

As the Government develops the UK's Innovation Strategy, we believe an important function of this Strategy should be to reinforce the need for research and innovation to focus on major societal challenges, particularly healthy ageing and the ageing workforce. This particular political agenda will have financial and societal ramifications beyond the sector and stimulate other areas of the economy providing a return beyond increasing the UK's R&D base.

With this in mind, The Physiological Society supports using R&D tax reliefs to incentivise research which focuses on better understanding the mechanism of ageing and how to slow or arrest the ageing process. The UK has demonstrated that it is a world-leader in this area and UK research is being translated into services and products that benefit not only domestic markets but globally too.

Complex societal challenges such as the ageing society and keeping people healthier for longer will require input from many research disciplines that may not necessarily be solely focused on ageing. Although we support using tax relief to further incentivise research into healthy ageing, this should not be at the cost of reducing the overall baseline rate of R&D tax reliefs below their current levels. As our report *Translating Knowledge and Research into Impact*: *Physiology and knowledge exchange* demonstrates, the benefits and impact of R&D go beyond the intended discipline or rely on an interdisciplinary approach to bring together the skills required to drive innovation. As such, incentivising certain areas of R&D should not be at the expense of other areas. As AstraZeneca noted in a recent Parliamentary & Scientific Committee, the attractiveness of the UK as a place for investment is in the strength of its broad research base.

Ensuring that tax credits are one part of the Government's approach to stimulating R&D to tackle major societal challenges

Despite The Physiological Society's support for tax credits, they should not be seen as a replacement for direct engagement with industry to build relationships that will tackle major societal challenges. Current datasets are insufficiently sensitive to be able to target the areas that support healthy ageing.

The upcoming Innovation Strategy should build on the UKRI Corporate Plan's vision of Government as a convenor and catalyser of research and innovation stakeholders by continuing to invest in networks and programmes that support industry and innovation leaders as well as enhancing and mobilising the value of research and innovation through engagement and collaboration between researchers, government, industry and the public.