higher risk of stroke in all regions, which reinforces the need to reduce the high smoking rates in countries such as China and India through tough anti-smoking policies if a growing stroke and coronary disease epidemic is to be averted.[7,8] The identification of waist-to-hip ratio (as opposed to body-mass index) as a risk factor for stroke is consistent with previous INTERHEART findings for myocardial infarction, and provides further evidence that this ratio might be a better measure of obesity to identify individuals at high risk for these disorders.[9] A surprising finding was the relatively low prevalence of cardiac causes of stroke (eg, atrial fibrillation, rheumatic heart disease) in China and India compared with high-income countries, but this result may reflect, in part, lower rates of cardiac diagnostic testing.

Identifying the causes of stroke across many diverse regions with a standardised approach is a difficult research undertaking for many reasons. Although a large international prospective cohort study might be the ideal, one would need to enrol a very large sample in view of the relatively low incidence of stroke in the general population, and the challenges of the long follow-up required would be considerable. A more efficient approach is to use a matched case-control design, as in INTERSTROKE, in which patients (or their proxies if they could not communicate) in hospital with acute stroke were interviewed and examined for possible risk factors, and results compared with a control population matched for age and sex from the hospital or the community.[10] Such a design can yield useful information but selection or recall biases might occur in terms of the individuals (or their proxies) who agree to take part as either cases or controls.[11,12] The INTERSTROKE investigators were aware of these limitations and did sensitivity analyses that showed that their findings were generally consistent between respondents (patient or proxies) and between hospital and community controls.

Phase 1 of INTERSTROKE suggests that hypertension, smoking, abdominal obesity, physical inactivity, and diet are the most important modifiable risk factors for stroke. These important findings should help to inform stroke prevention strategies around the world and to reduce the global burden of stroke.

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I am supported by a Canada Research Chair in Health Services Research and a Career Investigator Award from the Heart and Stroke Foundation of Ontario.
I declare that I have no conflicts of interest.

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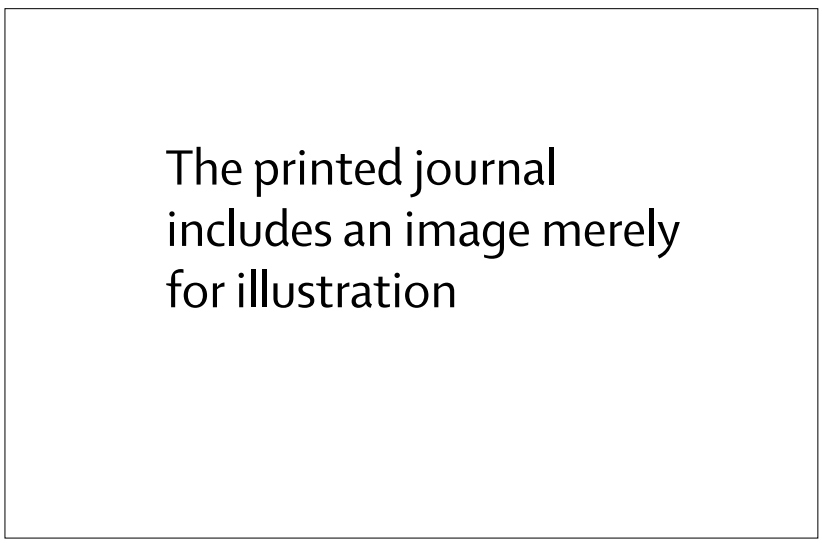
Public health research funding: independence is important

See **Editorial** page 69

The Diet and Health Research Industry Club (DRINC) is a £10 million (US$16·7 million, €11·2 million), 5-year partnership between the UK's Biotechnology and Biological Sciences Research Council (BBSRC) and a consortium of leading companies.[1] DRINC's goal is to generate high-quality research into diet and health while enhancing the international competitiveness of the UK's food industry and its ability to develop healthier foods. Research includes design of foods with enhanced nutritional properties and assessment of the health benefits of bioactive ingredients. The companies involved, which include Cadbury, Coca Cola, Nestlé,



Reuters

PepsiCo, and Unilever, will contribute £1 million, with the research councils (including the BBSRC, Engineering and Physical Sciences Research Council, and Medical Research Council) paying the remaining £9 million. The BBSRC manages the fund and a Steering Group, with heavy representation from industry, sets out the scope of research. Although the remit of the BBSRC is not explicitly the improvement of population health, a stated goal of DRINC is to "develop products that deliver enhanced health benefits for consumers".[1]

A crucial question thus arises: who benefits most from this research? The benefits to the food industry are clear while those to consumers could be contested. First, the research explicitly aims to help the UK's food industry to launch new profitable products with enhanced nutritional properties, whose advantages over a balanced healthy diet are at present unclear. Indeed, most health claims by industry lack scientific grounding.[2] Second, while research that creates healthier foods might benefit wealthy and health-conscious UK consumers, those most affected by nutrition-related diseases in the UK tend to have low incomes[3-5] and will not be able to afford expensive niche products labelled as functional foods. Such research might thus widen the already wide socioeconomic inequalities in nutrition-related diseases.[6] Third, the companies involved will gain considerable credibility through identification with the research councils, a credibility which is essential for continuing influence on policy and which underlies their corporate strategies for social responsibility.[7,8] Fourth, there is compelling evidence that commercial funding of research increases the likelihood of outcomes biased in favour of the funders.[7] Understanding of this phenomenon is well recognised in the tobacco field[9–11] but is only now becoming clear in relation to food and nutrition, with a review on the links between soft drinks and obesity showing how effect size varies according to the funding source.[12] Finally, such research will tend to show-case and bias the evidence base in favour of expensive high-technology solutions to nutritional problems. These last three issues combine to present the food and drinks industry as part of the solution to, rather than part of the cause of, current public health nutritional problems, an ideal outcome for the companies listed above, many of whose products are overwhelmingly calorie-rich but nutrient-poor.

The benefits to research councils of such an alliance are less clear, particularly in view of the relatively small contribution from industry. It is of course possible that, by having the research councils administer the funding, the extent of industry influence on research focus and outcomes might be limited and that the process of engagement with researchers could encourage the food industry to give greater consideration to population health. However, as public bodies funding and conducting health research, research councils and universities must recognise that corporate behaviour is, by definition, primarily driven by the pursuit of value to shareholders, not altruism[13] or public health. It is therefore important to ensure that public funding is used to support research that food companies would not otherwise fully fund themselves, and which will directly benefit the wider public and tackle inequalities.

Publicly funded research on diet and health demands transparency and avoidance of undue influence by vested interests. These points require first that the research councils and other public funders establish adequate governance arrangements, and second that UK universities establish clear terms of engagement with the food and soft-drink industry to minimise conflicts of interest. Until such changes occur, tax payers would be right to question why their money is being used to support research that industry could and would fund directly and which might not be in the public interest.

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CK is supported by a grant by the European Commission Research Directorate-General. AG is supported by a Health Foundation Clinician Scientist Fellowship. KL is supported by a National Institute of Health Research Fellowship. MM is an unremunerated member of the advisory board for the Community Interventions for Health Initiative of the Oxford Health Alliance, which receives funding from several food companies.

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Monitoring of neuromuscular blockade in general anaesthesia

The use of neuromuscular blocking agents (NMBAs) remains an essential part of general anaesthesia. The muscle relaxation they produce enables interventions both by the anaesthetist and the surgeon. However, an international survey confirmed that there is considerable variation in anaesthetists' understanding of the subject, in their use of objective monitoring of the drugs' effects, and in their use of antagonists to reverse them.[1] Research evidence and advances in monitoring technology and drug development suggest that there is room for improvement in practice.

A major problem is persistent weakness in the recovery period, so-called postoperative residual curarisation. This effect is thought to affect up to 30% of patients receiving these drugs to some degree,[2] although clinically significant events are less common. Residual blockade causes decreased chemoreceptor sensitivity to hypoxaemia, and pharyngeal and oesophageal muscle dysfunction.[3] The ventilatory response to hypoxaemia is thus blunted[4] and the airway less patent and more at risk of regurgitation and aspiration, leading to critical respiratory events in the recovery room[2] with the risk of postoperative pulmonary complications. If the patient is aware of the residual weakness, it is uncomfortable and distressing. Contributory factors include the substantial variability in individual response to a given dose of a given NMBA,[5] making it impossible to predict how long the drug's effect will last, and the possibility of persisting blockade even when an antagonist is given.[2] Evidence now links reversal of neuromuscular blockade and reduced postoperative mortality.[6]

Naguib and colleagues' survey[1] revealed that 19·4% of European and 9·4% of US respondents did not routinely use a neuromuscular monitor. There was also substantial variation in the use of reversal agents and in the appreciation of the poor value of clinical tests for predicting adequate recovery of neuromuscular function.[5] If anything, the findings of this survey might paint too rosy a picture: in a study from the UK, over 60% of respondents did not routinely use a monitor.[7] As Naguib and colleagues state,[1] practice will vary widely within a given average, both throughout Europe and within the USA. It is also likely that those who respond do so because they are aware their practice is more in line with current standards and thinking.

Until now, reversal of blockade has been achieved with anticholinesterases such as neostigmine, which requires the co-administration of an antimuscarinic agent such as