Genes Nutr (2013) 8:435–437
DOI 10.1007/s12263-013-0334-x

COMMENTARY

Social sciences for food and health research

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Received: 5 October 2012 / Accepted: 14 February 2013 / Published online: 9 March 2013

Abstract Healthier eating is a global challenge for chronic disease control. Food and Health Research in Europe (FAHRE) surveyed research structures and programmes in 32 countries, and reviewed research needs and gaps across nine themes. Food processing and safety research, nutrition and molecular research, and disease-based clinical research are strong; but research is weak on determinants of disease and healthier eating through policies and changing behaviours. Biomedical and commercial research for patents contrast with social research for the public interest. More funding and capacity support should go to social research in the food and health sector.

Keywords Research priorities · Nutrition policy · Social sciences

One of the most striking epidemiological trends of the twentieth century in food and health is related to food (Fig. 1). Cancers of the lung and stomach both have poor survival, and mortality rates in these slowly developing cancers show after long environmental exposure. The cigarette epidemic, starting first in men in the first half of the twentieth century, and in the second half in women, has brought its toll of lung cancer (and heart disease) (Levi et al. 2003). But, following a rise in the nineteenth century (Sonnenberg 2011), stomach cancer rates have fallen consistently through the second half of the century (Levi et al. 2003), and from third to fourteenth place in the frequency of cancers. This public health benefit happened without active policy, or effective medical interventions—and we do not really know why. The parallel rates of improvement for both men and women indicate shared environmental factors (rather than the gendered behaviours in smoking), including the rise in refrigeration, imported fresh fruit and vegetables around the year, reduced use of meat preservatives (stomach cancer rates are high in Japanese with high-salt diets) and changing infection with *H. pylori* (Crew and Neugut 2006).

In 2011, the United Nations held its second only summit to address the global challenge of chronic diseases (World Health Organisation 2011). The first summit, a decade ago, was for HIV/AIDS. As infectious diseases are being controlled through improved sanitation, hygiene and vector control, chronic diseases—including cancer, stroke, heart disease, stroke and diabetes—now cause up to 80 % of deaths globally. And four risk behaviours—smoking, alcohol, lack of exercise and unhealthy eating—are dominant risk factors for premature mortality. Since we know the risk factors, what should be done?

Through a call from the European Commission's Seventh Framework Research Programme, we have studied the food and health research programmes in EU member states. FAHRE (Food and Health Research in Europe) described the food and health research systems for 32 European countries (FAHRE 2012)—both public and industry—and assessed the needs and gaps for research (FAHRE 2011; McCarthy et al. 2011). There have previously been separate analyses of agriculture and food (EU Agri Mapping 2008) and public health (McCarthy and Clarke 2007; Conceicao et al. 2009) research systems, as well as road maps for biomedical research on chronic diseases (DIAMAP 2010; European Respiratory Society 2012). In FAHRE, we found much food research focused towards

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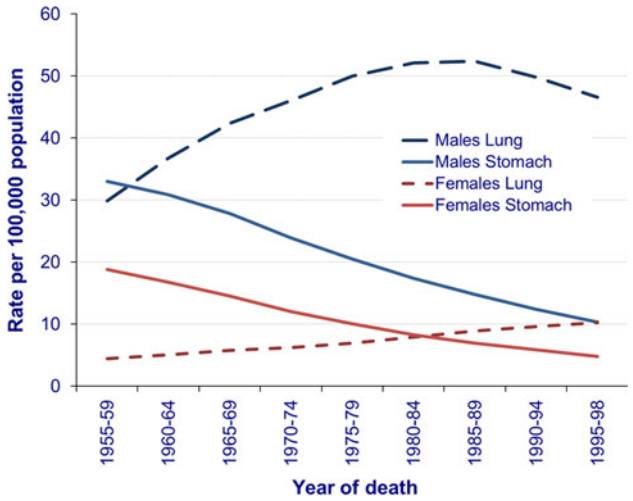

Fig. 1 Age-standardised mortality rates for lung and stomach cancers, by sex, European Union (15 member states in 1995–1998), 1955–1998 (Cancer Research UK 2012)

technologies for food processing and food safety, micronutrients, molecules and genomics, and biomedical research on specific diseases. But there was little research on theories, methods and impacts of food policy, health promotion and nutrition practice (McCarthy et al. 2011).

The European Commission is currently placing great emphasis on innovation to link research to economic benefits and encouraging legal patents so that knowledge can be protected for commercial development (European Commission 2012). Research funding is being directed towards fields with tradeable products and services, such as information technology. While food production is also a big component of national economies, healthy eating is a not-for-profit, non-tradeable behaviour. Food and health research has to be supported by public funds, and its impact must be measured by its benefit to society (McCarthy 2012).

Our genes are static, but epidemiological trends demonstrate the major risks and benefits to health of environmental and social change. We know we are eating the wrong food, and increasingly too much of it. Our governments seek to reverse these trends, at the level of the United Nations and through national policies. Research evidence is needed on the effectiveness of nutritional guidelines (WHO 2012), of the impact the food industry (C3 Collaborating for Health 2012)—the patterns of food production, processing, marketing and sales—and of the regulatory and cultural environments that determine consumption (IASO 2012). We need evidence for policy and interventions. And because we are linked politically, these are opportunities for collaborative research across Europe (McCarthy et al. 2013).

For several decades, the popular image of science has been the laboratory, with white coats, flasks and pipettes. In the twenty-first century, the biomedical and life sciences research budget has focused towards systems biology. Genome-wide association studies have significant challenges in determining the causal pathways of the major chronic diseases, and the hope of 'personalised' medicine for these diseases remains elusive (Janssens and van Duijn 2008). The population sciences that have demonstrated the links between social behaviours and disease patterns; and social sciences are needed to achieve effective interventions for healthier populations. Similarly, infrastructure grants are needed for fieldwork rather than equipment and support for young researchers in the social sciences as much as biomedicine. Maintaining the current biomedical and commercial paradigm of food and health research could prevent the aspirations of the United Nations. Directing national research agendas towards the sociomedical and public sector sciences could benefit the lives of millions of European citizens.

Acknowledgments This work was undertaken as dissemination of the European Union Seventh Framework Project FAHRE (Food and Health Research in Europe), contract number 245278.

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