Biography

Prof. David Bishop is Research Leader at the Institute of Sport, Exercise and Active Living (ISEAL), Victoria University, Australia, and leads the skeletal muscle and training research group. He has 20 years of experience as both a researcher and an applied sport scientist working with elite athletes. His team is interested in the molecular regulation of skeletal muscle adaptation to exercise training. A focus of his research group is to examine how diet, exercise, and genes interact to regulate skeletal muscle adaptations. Prof. Bishop has more than 240 peer-reviewed articles and 8 book chapters in the area of human movement and sport science. His research is currently funded by the ARC, the NHMRC, and the Australian defence force. He is also the past President of Exercise and Sport Science Australia (ESSA), and assistant editor of Medicine and Science in Sports and Exercise (MSSE). In the three years prior to the 2000 Sydney Olympics, he worked with Australian hockey, water polo, netball, beach volleyball and kayak teams. Professor Bishop has also gained invaluable experience consulting with professional teams such as the Fremantle Football Club.

Abstract

In 1999, Professor Francis Collins published one of the first documents outlining the promise of precision medicine entitled “Medical and Societal Consequences of the Human Genome Project” [1]. In this article, he predicted that individually tailored therapies would increasingly be used to prevent and treat disease, and to improve health. The next year, he proposed that by 2020 we would witness “a complete transformation in therapeutic medicine” [2]. These are exciting predictions, and “personalised” nutrition has since become a hot topic with researchers eagerly mining their data to try and find explanations for what appear to be between-subject difference in the response to a range of interventions (e.g., nutrition and exercise). Furthermore, it is an appealing concept as many practitioners, researchers, and members of the public, can describe observing human variability in response to food and nutrients.
However, we are rapidly approaching 2020 and it would seem fair to observe that the “complete transformation” in our approach to prescribing nutrition, exercise, or even medicine, has not occurred. One reason may relate to the imprecision of our many of our measurement tools to accurately detect and quantify individual variability. In fact, it has been suggested that the impact of within-subject random variation, which is inevitable even with ‘gold-standard’ measurement tools/protocols, is sometimes so substantial that it explains all apparent individual response differences[3]. In this presentation, I will ask whether our measurement tools are currently too variable to provide meaningful information about human variability in the response to nutrition?