

# Success story: how exercise physiologists improve the health of Australians

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There is now irrefutable evidence that physical inactivity plays a major role in the pathogenesis of many chronic diseases that result in reduced life expectancy.<sup>1</sup> In addition, maintaining cardiorespiratory fitness and regular physical activity throughout the lifespan are important not only to reduce morbidity and mortality, but also to maintain health, functional capacity and enhance quality of life in later years.<sup>2</sup> The focus on the health impact of increasing body weight and central adiposity has been countered by recent evidence that, to preserve cardiometabolic health and longevity, maintaining cardiorespiratory fitness during middle age is more important than changes in body weight.<sup>2</sup> However, the importance of maintaining physical fitness and regular physical activity throughout the lifespan has yet to be fully recognised by the general public and indeed by many medical practitioners.

While epidemiological data are important, cohort studies cannot prove cause and effect. Thus, exercise training studies that investigate the cellular mechanisms underlying improvements in cardiometabolic health and longevity are critically important. AMP-activated protein kinase (AMPK), a fuel-sensing enzyme, has been shown to be increased by moderate-intensity exercise, which then sets off a cascade of intracellular events that include activation of the protein SIRT1, the silent information regulator.<sup>3</sup> This biochemical cascade counteracts the metabolic dysfunction observed in metabolic syndrome, including insulin resistance and angiogenesis, thus increasing longevity. These events are analogous to the antidiabetic drug metformin.<sup>3</sup> AMPK activation may also be responsible for the lower incidence of neurodegenerative disease in active individuals.<sup>3</sup>

Medical practitioners have a key role in the clinical management of individuals with chronic disease and in determining the indications and any contraindications for exercise. This also includes making a referral to an appropriate allied health professional, such as an accredited exercise physiologist (AEP) or physiotherapist, to

develop an appropriate exercise prescription for their client's clinical condition.<sup>4</sup> Despite the evidence on the role of exercise to prevent and manage chronic disease, it is surprising that many medical practitioners do not routinely record physical inactivity or fitness as a 'vital sign', and consequently fail to recommend this important treatment to their patients.<sup>1</sup> Many healthcare systems also fail to provide adequate recognition of the need for integrated healthcare for individuals with chronic conditions, including the role that AEPs play within interdisciplinary teams. However, this is now gaining prominence in Australia.<sup>5</sup> Integrated care has been shown to enhance patient self-management, slow the progression of chronic disease and reduce the incidence of acute exacerbations of disease requiring hospital admission,<sup>4</sup> resulting in significant government and personal health savings.

Patients regard advice on how to adopt a healthy lifestyle, including exercise, as important, and they regard their medical practitioner as the most credible source for this advice. However, general practitioners (GPs) in many countries, including Australia, are generally not trained or sufficiently skilled to provide individualised exercise prescription for patients for the variety of clinical conditions that they may experience in their daily practice.<sup>6</sup> While many GPs may play a lead role in encouraging their clients to exercise, many GPs in Australia will refer clients on to specialist sports and exercise physicians, or appropriately trained allied health practitioners such as AEPs, who have the expertise and time to develop, instruct and supervise an exercise programme.

In 2006, AEPs were granted eligibility for a Medicare Provider number, as part of the Australian Federal Government's Medicare system. A client's GP develops a Team Care Arrangement with appropriate allied health professionals, including a Chronic Disease Management plan, which outlines the health objectives for their client.<sup>7</sup> Clients can then be referred to an AEP for up to five rebatable exercise physiology services per year. Since 2006, the number of referrals to AEPs has grown significantly: 80 000 AEP services were delivered in 2010, which increased sevenfold to 620 000 services in 2013.<sup>8</sup> AEPs are also eligible to claim rebates for their services

from the Department of Veterans Affairs and many Private Health Funds, and are approved for exercise rehabilitation services in Transport Accident and Workers Compensation claims.

A truly interdisciplinary system with appropriate cross-referral pathways is a healthcare system that addresses an increasing worldwide incidence of chronic disease. AEPs are an essential component of a modern, integrated healthcare system and are the most qualified allied health professional to prescribe and deliver exercise to assist in the prevention and in the management of many of the chronic diseases that will impact the future health of Australians.

Accredited exercise physiologists (AEPs) are university degree qualified allied health professionals, who must have completed at least a 4-year undergraduate degree or a Masters degree in clinical exercise physiology that is accredited by Exercise and Sports Science Australia (<http://www.essa.com.au>). AEPs specialise in clinical exercise interventions for persons at high-risk of developing, or with existing chronic and complex medical conditions and injuries.

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