

# Clinical Exercise Physiologists

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Clinical exercise physiologists (CEPs) specialize in managing long-term, non-communicable health conditions using scientific rehabilitative exercise prescription, which alleviates the burden of these conditions on health care systems. This is evident, particularly in Australia (AUS), where they are registered as health care workers. CEPs have been shown to reduce the physical burden of long-term conditions on populations and the economic load that these place on national health departments.

Clinical Exercise Physiologists

Chronic Disease

## 1. Introduction

A CEP holds a minimum of a 3 year Bachelors Degree in Science and a postgraduate qualification, either a one year Postgraduate Diploma or a 2 year Masters Degree specializing in clinical Exercise Physiology. They are allied health professionals specializing in the delivery of scientific exercise interventions for people with acute, subacute, or chronic medical conditions across a wide spectrum of health, including but not limited to cardiovascular, respiratory, endocrine, musculoskeletal, mental and neurological disease. In order to register as a CEP, the practitioner must meet the standards expected of practicing CEPs as per the Standards Met by Registered CEPs in NZ document of 2015, and complete 500 h of documented clinical experience under the supervision of a registered CEP within a tertiary education environment while registered for the postgraduate course. Once the hours and qualification have been completed the CEP must sit the Clinical Exercise Physiology Board of NZ competency exam. If successful, the CEP may then register with the Clinical Physiology Registration Board (CPRB) as a Registered Clinical Exercise Physiologist (RCEP) to maintain clinical competency and receive their annual practicing certificate. These registrations are similar internationally with the American College of Sports Medicine-CEP registration, Canadian Society for Exercise Physiology, South African Biokinetics Association and Exercise & Sport Science AUS-Accredited Exercise Physiologist, and the British Association of Sport and Exercise Science-CEP.

Studies indicate that CEPs provide effective multidisciplinary care, and Gillam noted that exercise advice given to patients by physicians in primary care settings was translated more effectively by CEPs, which motivated people with chronic conditions to exercise <sup>[1]</sup>. A systematic review by Schuch et al., noted that the multidisciplinary treatment of people with severe mental illness should focus on improving cardiovascular fitness to improve all-cause mortality, and recommended that qualified professionals that could support these patients with exercise therapy, be included as part of the multidisciplinary team in mental health treatment <sup>[2]</sup>. According to Soan et al., cardiac programs designed and facilitated by CEPs were extremely successful in altering exercise patterns and

physical behaviors. They also helped prevent or delay subsequent cardiac arrest, improved exercise tolerance, circulation, and muscle atrophy, significantly reduced risk factors for comorbidities, and improved quality of life [3]. Understanding the current global burden of NCDs indicates the massive cost that these chronic conditions are placing on the world. NZ is a small, high income country with its own enormous burden of NCDs. This article will discuss the implications of the financial cost of these conditions as well as evidence that exercise intervention strategies by CEPs have reduced the financial impact of cardiovascular disease (CVD) including ischaemic heart disease and stroke, mental illness (particularly depression) and type 2 diabetes mellitus (T2DM) in AUS, and that there is the potential for the same to occur in NZ if the government will recognize this profession as the key to cost-effective models of prevention and treatment of NCDs.

Australian CEPs have been providing exercise-related services funded by Medicare AUS since 2006. Medicare is AUS's universal health care scheme, which provides Australian residents access to health care. The integration of CEP's was an essential step in effecting a hands-on healthcare model focused on prevention. This includes timely detection and treatment of the significant risk factors of inactivity, obesity, and metabolic risk [4]. Medicare rebates allow for five sessions with a qualified CEP. CEPs have been proven to reduce overall health costs in certain long-term, chronic conditions. However, there is no government-assisted funding for CEPs in NZ where the burden of NCDs is extremely high. In South Africa, CEPs are healthcare providers registered with the Health Professions Council of South Africa, in the same allied health category as physiotherapists and podiatrists, since 1983.

## 2. The Role of the Clinical Exercise Physiologist in Reducing the Burden of Chronic Disease

The evidence suggests that CEP supervised exercise programs for managing CVD, mental illness, and T2DM are incredibly cost-effective and can result in large reductions in health system costs. Although there is substantial evidence to support the positive health effects and increase in QALYs of CEP intervention programs in many chronic disease conditions worldwide, there is little evidence on the economic benefit of CEP intervention programs within NZ. The fact that AUS and NZ share similar NCD profiles and healthcare systems could imply that NZ would benefit economically from CEPs being recognized health care practitioners. Developing CEP-led exercise and NCD intervention strategies that address the reduction of NCDs economic burden and address the need for improved health outcomes in Maori and Pacific peoples, particularly, is imperative within NZ. This is a future area of research that needs to be led by CEPs in NZ.

Multidisciplinary interventions, which include CEPs, must endorse engagement and retention of obese patients [5] as NZ now has the third-highest occurrence of overweight and obesity in the OECD. It is acknowledged that obesity is the leading risk factor creating health loss in NZ [6] and is directly related to CVD and T2DM. The 2014 Canterbury District Health Board findings from interventions for obesity conducted in NZ confirm international literature that states individualizing and regular continued contact enhance adherence and effectiveness of interventions [7]. Program content, setting, and delivery must be individualized. Maori, Pacific, and other health models need to be merged to support and guide wider health and cultural beliefs and provide the opportunity for including family and community support. These models need to be tailored to the individual so that the intervention

effectiveness is enhanced, specific diet and physical activity behaviors are directed, social support is available, and firm behavior change practices are used. They need to be pro-equity, affordable, and easily accessible for both patients and referring practitioners [7]. “A practical strategy may be for health professionals to work alongside their patients to choose an evidence-based intervention that aligns with their personal values and can be tailored to their lifestyle and abilities” [7], (p. iv–v). These areas all fall within the clinical expertise of the CEP.

“Living well, staying well and getting well” are the three key concepts the NZ Ministry of Health has made its primary focus in its ongoing vision for a healthier NZ [8]. He Korowai Oranga- the Maori Health Strategy, supports the Ministry of Health and DHB to improve Maori health outcomes [8]. There is no evidence that CEPs have been included within this funding model despite the large improvement in health and the economic impact they can make within this demographic.

‘Ala Mo’ui- Pathways to Pacific Health and Well-being is a strategy to improve Pacific peoples’ health and wellbeing, address life expectancy, health expectancy, and reduce ambulatory sensitive hospital (ASH) admission rates in the Pacific population within NZ. The original plan spanned four years from 2010–2014 to supply high-quality health services that would meet Pacific people’s needs. It was successful, and a second term from 2014–2018 followed [9]. Although the key health system and health status indicators are long-term measures, it is imperative that all three indicators reflect positive health trends for Pacific families and communities in order to reach equity in health outcomes [9]. CEPs would be best placed to influence life expectancy, health expectancy, and reduce ASH rates.

The Primary Healthcare Strategy was developed in 2001 and included the establishment of PHO’s, which set the direction for NZ’s health care. The NZ. Health Strategy of 2016 highlights the need for a move away from treatment to prevention and improve people’s lives. The main aim is to support improved financial sustainability [8]; and CEPs are health professionals that improve mortality outcomes and quality of life utilizing scientific exercise prescription while reducing economic burden.

Rising to the Challenge looks to enhance outcomes for patients, their families, and the supportive community who utilize primary and/or specialist mental health and addiction services. It offers planners, funders, and providers who deliver government-subsidized mental health services with some direction in terms of priority areas for service development [10]. Although there has been some implementation of physical activity provided for this program, and there is clear evidence to motivate for structured and individualized intervention, the preferred providers should be CEPs.

Living Well with Diabetes is a strategy for individuals with a high risk of developing T2DM or those living with the disease. The health sector has attempted to recognize those at risk of acquiring diabetes sooner and advance the quality of services for people who already suffer. The government states it is dedicated to maintaining a systematic approach that is sustainable in order to reduce the burden of diabetes and the associated comorbidities in NZ [11]. CEPs must be included in this healthcare model as there is evidence that individualized lifestyle interventions early on are effective in both the management and prevention of T2DM.

Green Prescription (GRx) is when general practitioners prescribe physical activity formally to patients as a cure or for management of an existing medical condition, or as a tool for preventing disease/disability. Patients can access advice and support as well as subsidized physical activities. Sixteen providers deliver GRx to patients and/or families that have been referred to. There are two primary health organizations (PHOs) and fourteen regional sports trusts <sup>[12]</sup>. Some of these organizations employ CEPs to manage their high-risk patient profiles. CEPs would be best placed to run the Green Prescription programs, funded by the Ministry of Health, within their community practices, based on the evidence supporting their success in disease management and prevention in AUS and the UK.

CEPs need to be utilized to improve health outcomes and reduce NCDs' economic burden within NZ.

There is also a dire need for Maori and Pacific CEPs to support the underlying themes of both the He Korowai Oranga and the 'Ala Mo'ui. The advancement of more Pacific undergraduate health and sports science students towards postgraduate CEP qualification is necessary to align with the four priority outcomes of 'Ala Mo'ui. The same is true of the need for more postgraduate Maori trained specialists within the field of clinical exercise physiology, which would directly influence the Maori health model of Te Whare Tapa Wha.

In a paper to evaluate the application of kaupapa (principle/policy) in lab-based research by Warbrick et al., the discussion of the application of, and an interface between, kaupapa Maori methods of research and those traditionally used in exercise physiology was explored. The paper concluded that exercise science has the potential to bridge indigenous and western approaches to research, informing both the prevention and the treatment of lifestyle illnesses that impact significantly on Maori communities <sup>[13]</sup>.

## **3. Conclusions**

A CEP holds a postgraduate tertiary qualification. They are allied health professionals specializing in delivering scientific exercise interventions for acute, subacute, or chronic medical conditions. These conditions include but are not limited to cardiovascular, respiratory, endocrine, musculoskeletal, mental, and neurological diseases.

According to Australian research, CEPs' interventions have extensive benefits for chronic conditions such as CVD, Mental illness, and T2DM. The benefits include reduced health system expenditure, improved productivity, and improved wellbeing, and this is by far the greatest benefit patients will encounter. CEPs are an immensely underutilized tool in the multidisciplinary care and treatment of those with chronic disease <sup>[14]</sup>. The CEP can also make judgments based on which exercise protocols may be the most effective to a variety of comorbidities and conditions and not detrimental to one in favor of progress in the other.

There is more than enough evidence to support the fact that CEP interventions improve physical outcomes in a variety of chronic disease patients, and the cost to benefit ratio has been clearly shown in AUS. The overall lifetime

burden of disease savings in exercise interventions in people with CVD, Mental illness and T2DM by CEPs is substantially higher than the cost of the intervention programs they offer.

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