# Moving the Economy:
# Why Physical Activity is a Fiscal Imperative

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## 1 Introduction

Australia's long-term economic prosperity depends not only on capital accumulation and technological innovation but also on the health and wellbeing of its people. Productivity, in its broadest sense, reflects the capacity of individuals to contribute effectively to the labour force, innovate, and sustain participation across the life course. Poor health outcomes, particularly those associated with chronic disease, physical inactivity, and ineffective physical activity (unsupervised high-risk exercise and maladaptive training practices), undermine economic growth (and weaken productivity) through four linked channels:

- Higher disease and premature mortality, which shrink the available labour pool and experience base.
- Increased absenteeism and reduced labour-force participation.
- Reduced on-the-job performance (presenteeism).
- Higher long-term disability.[2]

Physical inactivity and ineffective physical activity also increase the demand for, and the cost of, health and social care services.[3] A worldwide study of the economic impact of physical inactivity that was undertaken in 2016 found that physical inactivity cost health-care systems worldwide about US$53.8 billion in 2013. This equates to about 0.64% of all health-care expenditure. In addition, physical inactivity related deaths contributed to US$13.7 billion in productivity losses, and physical inactivity was responsible for 13.4 million Disability Adjusted Life Years.[4] Physical inactivity and ineffective physical activity also contribute to absenteeism and presenteeism. The productivity losses due to these two factors are estimated to be at least as large as the productivity losses related to death due to physical inactivity and ineffective physical activity.[5]

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[2] Bloom D, Cafiero E, Jané-Llopis E, Abrahams-Gessel S, Bloom L, Fathima S, and Weinstein C. (2011). *The Global Economic Burden of Noncommunicable Diseases.* Geneva: World Economic Forum.

[3] Mou C, Wang Z, and Ke Z. (2025). Association between physical activity and multimorbidity: a population-based cohort study. *Arch Public Health* 83(1):71.

[4] Ding D, Lawson K, Kolbe-Alexander T, Finkelstein E, Katzmarzyk P, van Mechelen W, and Pratt M. (2016). The economic burden of physical inactivity: a global analysis of major non-communicable diseases. *The Lancet* 388(10051):1311. Note: These estimates are conservative. The analysis is restricted to the financial value of lost productivity due to premature mortality. The analysis uses a friction cost approach that only considers replacement costs within the labour market (and that assumes a 3-month friction period).

[5] Goetzel R, Long S, Ozminkowski R, Hawkins K, Wang S, & Lynch W. (2004). Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting U.S. employers. *J Occup Environ Med*. 46(4):398-412.

A study in 2019 by the Rand Corporation, which used a dynamic computational general equilibrium model, found that the rate of growth of global GDP would be about 0.4% per annum higher if individuals with a sedentary or low physically active lifestyle become active and those who are already active improved their activity levels as well. The study found that reduced presenteeism drives the highest proportion of economic gain as a result of reducing physical inactivity – about 70 % – with reduced mortality and reduced sickness absence responsible for only about 30 percent of the overall GDP gains projected. The modelling also found that between US$8.7 billion and US$11.2 billion in present global healthcare expenditure could be saved by making people physically more active, with those savings rising to between US$16 billion and US$20.6 billion by 2050.[6]

In Australia, modelling commissioned by Medibank Private and undertaken by KPMG-Econtech found that physical inactivity cost the Australian health care system $1.5 billion in 2007-08. It also found that the productivity loss due to physical inactivity in 2007-08 was about 1.8 working days per worker per year. This amounted to about $9.3 billion in lost economic production in 2007-08 (0.8% of GDP), with another $3.8 billion in productivity losses in 2007-08 (0.3% of GDP) from premature mortality due to physical inactivity.[7]

It is no surprise, therefore, that the Productivity Commission has recommended in the interim report of its inquiry into *Delivering quality care more efficiently* that the Australian Government should work with state and territory governments to establish a National Prevention Investment Framework to 'support investment in prevention, improving outcomes and slowing the escalating growth in government care expenditure'. Importantly, the Commission has also recommended that the funding mechanism that supports eligible prevention initiatives should enable consideration of the second-round and longer-term fiscal effects of prevention programs.[8]

Australia has a National Preventive Health Strategy, which aims to provide more balance to the health system by enhancing the focus on prevention and by building systems-based change over the 10-year period for 2020-2031.[9] It is very important that any new National Prevention Investment Framework should build on the *National Preventive Health Strategy 2020-2031* and not replace it. In particular, the National Prevention Investment Framework should continue to recognise the important role that helping Australians to achieve an appropriate level of physical activity can play in improving their well-being, their health and the quantity and quantity of their economic participation.

This paper is concerned with identifying the opportunities for improving productivity in Australia through greater investment in the prevention of the disease burden that arise from physical inactivity and ineffective physical activity. Particular emphasis in this regard needs to be paid to the role of Accredited Exercise Physiologists, who are allied health professionals uniquely qualified to design and deliver safe, evidence-based exercise interventions for people living with or at risk of chronic disease, complex conditions, and injury. Accredited Exercise Physiologists are recognised within the Australian health system under Medicare, the Department of Veterans' Affairs, workers' compensation schemes, and private health insurance, making them a nationally

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6 Hafner M, Yerushalmi E, Phillips W, Pollard J, Deshpande A, Whitmore M, Millard F, Subel S, Van Stolk C. (2019). *The economic benefits of a more physically active population: An international analysis*. Rand Corporation.

7 Medibank Private. (2008). *The cost of physical inactivity*.

Note: These estimates are conservative. They do not account for productivity losses due to 'permanent absenteeism' – individuals being permanently outside the workforce due to physical inactivity. They also do not account for the value of lost unpaid work.

8 Productivity Commission. (2025). *Delivering quality care more efficiently, Interim report*. Canberra: Productivity Commission.

9 Australian Government. Department of Health, Disability and Ageing. (2021). *National Preventive Health Strategy 2020-2031.* Canberra: Australian Government. Department of Health, Disability and Ageing.

regulated and integrated part of the health workforce. Accredited Exercise Physiologists provide a service that bridges clinical care and health promotion. They are not fitness trainers. Their expertise lies in applying exercise to complex medical conditions where safety and clinical judgement are paramount. While physiotherapists often focus on acute injury and musculoskeletal rehabilitation, Accredited Exercise Physiologists specialise in chronic disease prevention and long-term functional management. This distinction ensures Accredited Exercise Physiologists complement rather than duplicate other allied health professions.[10]

The economic and health burden of disease in Australia due to physical inactivity is discussed in Section 2 of this paper. Opportunities for improving productivity in Australia through greater investment in the prevention of the disease burden that arise from physical inactivity are discussed in the section 3 of this paper. The need for funding mechanisms to take a long-term view is discussed in section 4.

## 2 Burden of Disease due to Physical Inactivity in Australia

Because physical activity is essential to good mental and physical health and well-being, the Australian Government has published a series of physical activity and exercise guidelines (see Exhibit 1), with different sets of guidelines for infants and preschoolers; children and young people; adults, pregnancy; older people; and people with disability and chronic conditions.[11]

***Exhibit 1: Australia physical activity and exercise guidelines***

| | 5 to 17 years | 18 to 64 years | 65 years and over |
|---|---|---|---|
| **Physical activity** | 60 minutes of moderate to vigorous physical activity per day.<br>Vigorous activities should be incorporated at least 3 days per week.<br>Several hours of light activities per day. | 150–300 minutes per week of moderate physical activity,<br>OR 75–150 minutes per week of vigorous physical activity,<br>OR an equivalent combination of both per week. | 30 minutes or more of physical activity on most, preferably all, days. |
| **Strength** | Three days or more per week. | Two days of more per week. | Do a range of activities that incorporate fitness, strength, balance and flexibility. |
| **Sedentary time** | Minimise and break up long periods of sitting.<br>No more than two hours of sedentary recreational screen time per day. | Minimise and break up long periods of sitting. | |

Unfortunately, many Australians do not meet the physical activity and exercise guidelines.[12] With respect to the physical activity component of the guidelines:

- 83% of adolescents aged 15 to 17 did not meet the guidelines.
- 37% of adults aged 18 to 64 did not meet the guidelines.
- 57% of adults aged 65 or older did not meet the guidelines.

With respect to the muscle-strengthening activities component of the guidelines:

- 80% of adolescents aged 15 to 17 did not meet the guidelines.

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[10] Exercise and Sports Science Australia. (2025). *Accredited Exercise Physiologist Professional Standards for Accreditation 2025*.

[11] Australian Government. Department of Health, Disability and Ageing. (2021). *Physical activity and exercise guidelines for all Australians.*

[12] Australian Institute of Health and Welfare. (2024). *Physical activity*.

- 73% of adults aged 18 to 64 did not meet the guidelines.
- 84% of adults aged 65 or older did not meet the guidelines.

According to the Australian Institute of Health and Welfare, physical inactivity and ineffective physical activity was responsible for 1.0% of the total disease burden in Australia in 2024, including 1.6% of Years of Life Lost and 0.5% of Years of Life Lived with Disability.[13] If the disease burden associated with being overweight or obese is added to these figures, then physical inactivity (expanded definition) was responsible for 5.2% of the total disease burden in Australia in 2024, including 5.6% of Years of Life Lost and 4.8% of Years of Life Lived with Disability. Exhibit 2 breaks down these results by gender.

***Exhibit 2: Burden of Disease due to Physical Inactivity, Australia, 2024***

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| | YLL | YLWD | DALYs | YLL | YLWD | DALYs |
| All Causes | 1,111,661 | 1,661,135 | 2,772,826 | 1,563,840 | 1,461,757 | 3,025,597 |
| Physical Inactivity | 22,446 | 9,345 | 31,791 | 20,882 | 6,288 | 27,170 |
| Overweight and Obesity | 49,136 | 75,709 | 128,844 | 58,411 | 60,057 | 118,469 |
| **Share due to Physical Inactivity and Overweight and Obesity** | **6.4%** | **5.1%** | **5.6%** | **5.1%** | **4.5%** | **4.8%** |

The Australian Institute of Health and Welfare estimates that the cost to the health system of diseases caused by physical inactivity and ineffective physical activity was $2.4 billion in 2018-19 and that $1.7 billion in disease spending was prevented by effective physical activity.[14]

## 3 'Exercise as Medicine'

The scientific evidence that physical activity not only contributes to well-being but is also essential for good health, and to economic participation, has been compelling for many years. Exercise was an important component of ancient medical theory and a physician's duties included the preservation and promotion of health as well as the prevention of disease. The *Sushruta Samhita*, an ancient Sanskrit text on medicine that dates to about 600 BCE tells us that 'diseases fly from the presence of a person habituated to regular physical exercise'.[15] Similarly, the Greek physician and philosopher Hippocrates (circa 460-370 BCE) wrote that 'eating alone will not keep a man (*sic*) well; he (*sic*) must also take exercise'.[16]

Over the last 50 years, numerous scientific studies have confirmed the importance of structured physical activity and exercise in improving wellbeing and reducing health care costs, including in diseases that do not primarily manifest as disorders of the locomotive apparatus. Indeed, structured physical activity represents a cornerstone in the primary prevention of numerous chronic conditions:

- Cancer.
- Cardiovascular diseases (hypertension, coronary heart disease, heart failure, and cerebral apoplexy).

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[13] Australian Institute of Health and Welfare. (2024). *Australian Burden of Disease 2024.*

[14] Australian Institute of Health and Welfare. (2023). Economics of sport and physical activity participation and injury.

[15] Bhishagrata, K. (1963). *The Sushruta Samhita (Vol. 2).* Varnasi, India: Chowkhamba Sanskrit Series Office.

[16] Hippocrates. (1931). *Nature of Man. Regimen in Health. Humours. Aphorisms. Regimen 1–3. Dreams*. (W. Jones, Trans.) Cambridge, MA: Harvard University Press.

- Metabolic diseases (obesity, hyperlipidemia, metabolic syndrome, type 2 diabetes, type 1 diabetes).
- Musculo-skeletal disorders (osteoarthritis, osteoporosis, back pain, rheumatoid arthritis).
- Neurological diseases (dementia, Parkinson's disease, multiple sclerosis).
- Psychiatric diseases (depression, anxiety, stress, schizophrenia).
- Pulmonary diseases (chronic obstructive pulmonary disease, asthma, cystic fibrosis). [17]

A useful summary of the evidence can be found in USA Surgeon General's 1996 report on the connection between physical activity and good health.[18] The Surgeon General found, *inter alia*, that:

- Physical activity has numerous beneficial physiologic effects on the cardiovascular and musculoskeletal system and on the functioning of metabolic, endocrine, and immune systems.
- People of all ages, both male and female, undergo beneficial physiologic adaptations to physical activity.
- Higher levels of regular physical activity are associated with lower mortality rates.
- Regular physical activity prevents or delays the development of high blood pressure, and exercise reduces blood pressure in people with hypertension.
- Regular physical activity is associated with a decreased risk of colon cancer.
- Regular physical activity lowers the risk of developing non–insulin-dependent diabetes mellitus.
- Regular physical activity is necessary for maintaining muscle strength and joint structure/function.
- Weight-bearing physical activity is essential for normal skeletal development during childhood and adolescence and for achieving and maintaining peak bone mass in young adults.
- Strength training and other forms of exercise in older adults preserve the ability to maintain independent living status and reduce the risk of falling.
- Physical activity appears to relieve symptoms of depression and anxiety and improve mood.
- Physical activity appears to improve health-related quality of life by enhancing psychological well-being and by improving physical functioning in persons compromised by poor health.

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[17] Booth F, Roberts C, & Laye M. (2012). Lack of exercise is a major cause of chronic diseases. *Compr Physiol* 2:1143-211.

Pedersen B, & Saltin B. (2015). Exercise as medicine – evidence for prescribing exercise as therapy in 26 different chronic diseases. *Scand J Med Sci Sports* 25:1-73.

Hills A, Street S, & Byrne N. (2015). Physical Activity and Health: 'What is Old is New Again'. *Adv Food Nutr Res*. 75:77-95.

Anderson, E., & Durstine, J. (2019, september 10). Physical activity, exercise, and chronic diseases: A brief review. *Sports Med Health Sci.* 1(1):3-10.

Cunningham, C., O' Sullivan, R., Caserotti, P., & Tully, M. (2020, MAy). Consequences of physical inactivity in older adults: A systematic review of reviews and meta-analyses. *Scand J Med Sci Sports* 30(5), 816-27.

Marquez, D., Aguiñaga, S., Vásquez, P., Conroy, D., Erickson, K., Hillman, C., . . . Powell, K. (2020). A systematic review of physical activity and quality of life and well-being. *Transl Behav Med.* 10(5):1098-120.

Duijvestijn, M., de Wit, G., van Gils, P., & Wendel-Vos, G. (2023). Impact of physical activity on healthcare costs: a systematic review. *BMC Health Serv Res* 23(1):572.

[18] USA. Department of Health and Human Services. (1996). *Physical activity and health: a report of the Surgeon*

## 3.1 Cost Effectiveness Studies

In 2004, the UK Chief Medical Officer published an in-depth review of the impact of physical activity on health. That report also found that people who are physically active reduce their risk of developing major chronic diseases – such as coronary heart disease, stroke and type 2 diabetes – by up to 50%, and the risk of premature death by between 20% and 30%.[19]

Exercise and Cardiovascular disease and type 2 diabetes mellitus.

A systematic review and meta-analysis of epidemiological studies, which assessed the independent association between physical activity levels and both cardiovascular disease and type 2 diabetes mellitus, found that an increase in 11.25 Metabolic Equivalent of Task hours per week for an inactive individual was associated with a 23% reduction of risk for cardiovascular mortality and a 26% reduction in diabetes mellitus incidence, independent of body weight.[20]

Exercise and Mental Health

People with mental disorders experience high rates of comorbid chronic physical diseases including diabetes, obesity, and cardiovascular disease, contributing to an increased mortality risk, regardless of psychiatric diagnosis.[21] A 2019 Lancet Psychiatry Commission on protecting the physical health of people with mental illness recommended that structured physical activity be incorporated as part of routine psychiatric care regardless of diagnosis and across all treatment settings.[22] In addition to the established physical health benefits, structured physical activity can have both preventive and treatment effects on psychiatric symptomatology for people experiencing a range of mental disorders, including depression, anxiety disorders and psychosis.[23]

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[19] UK. Department of Health. (2004). At least five a week: Evidence on the impact of physical activity and its relationship to health: A report by the Chief Medical Officer.

[20] Wahid A, Manek N, Nichols M, Kelly P, Foster C, Webster P, Kaur A, Friedemann Smith C, Wilkins E, Rayner M, Roberts N, Scarborough P. (2016). Quantifying the Association Between Physical Activity and Cardiovascular Disease and Diabetes: A Systematic Review and Meta-Analysis. *J Am Heart Assoc.* 5(9):e002495.

Note: 1 MET (Metabolic Equivalent of Task) is the energy expenditure of sitting quietly. 11.25 MET h/week could be achieved by walking at a moderate intensity (e.g., 4.5 METs) for 150 minutes (2.5 hours) each week (4.5 METs x 2.5 hours = 11.25 MET-hours).

[21] Correll CU, Solmi M, Veronese N, Bortolato B, Rosson S, Santonastaso P, Thapa-Chhetri N, Fornaro M, Gallicchio D, Collantoni E, Pigato G, Favaro A, Monaco F, Kohler C, Vancampfort D, Ward PB, Gaughran F, Carvalho AF, and Stubbs B. (2017). Prevalence, incidence and mortality from cardiovascular disease in patients with pooled and specific severe mental illness. *World Psychiatry* 16(2):163–80.

Walker ER, McGee RE, and Druss BG. (2015). Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. *JAMA Psychiatry* 72(4):334–41.

[22] Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, Allan S, Caneo C, Carney R, Carvalho AF, Chatterton ML, Correll CU, Curtis J, Gaughran F, Heald A, Hoare E, Jackson SE, Kisely S, Lovell K, Maj M, McGorry PD, Mihalopoulos C, Myles H, O'Donoghue B, Pillinger T, Sarris J, Schuch FB, Shiers D, Smith L, Solmi M, Suetani S, Taylor J, Teasdale SB, Thornicroft G, Torous J, Usherwood T, Vancampfort D, Veronese N, Ward PB, Yung AR, Killackey E, Stubbs B. (2019). The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. *Lancet Psychiatry* 6(8):675-712.

[23] Choi KW, Chen C, Stein MB, et al. (2019). Assessment of Bidirectional Relationships Between Physical Activity and Depression Among Adults: A 2-Sample Mendelian Randomization Study. *JAMA Psychiatry* 76(4):399–408.

Schuch FB, Vancampfort D, Firth J, Rosenbaum S, Ward PB, Silva ES, and Stubbs B. (2018). Physical Activity and Incident Depression: A Meta-Analysis of Prospective Cohort Studies. *American Journal of Psychiatry* 175(7), 631–648.

Schuch FB, Vancampfort D, Richards J, Rosenbaum S, Ward PB, Stubbs B. (2016). Exercise as a treatment for depression: A meta-analysis adjusting for publication bias. *J Psychiatr Res.* 77:42-51.

Exercise and Cancer

Cardiovascular disease is the leading cause of death after treatment for endometrial cancer. A recent study has examined the cost effectiveness of an exercise intervention post treatment for endometrial cancer that was structured over 12 weeks, comprising a total of 18 sessions individually supervised by an Accredited Exercise Physiologist. Exercise training was prescribed to enhance neuromuscular strength, endurance, balance, flexibility, cardiorespiratory fitness, or cardiovascular function in participants and to instil exercise self-efficacy by the end of the trial so that participants could self-manage their own exercise safely thereafter. The study found that the intervention had an incremental cost-effectiveness ratio (ICER) of AUD $5,184 per QALY gained.[24]

## 3.2 Cost Effectiveness of Accredited Exercise Physiologists

When it comes to supporting individuals in their pursuit of better health, both Accredited Exercise Physiologists and fitness trainers play valuable roles. However, when addressing whole-of-person issues – where physical health intersects with psychological, social, and medical factors – Accredited Exercise Physiologists are uniquely equipped. Their higher education, clinical training, and evidence-based practice frameworks make them better positioned to support complex health needs beyond fitness goals.

A key difference lies in qualifications. Accredited Exercise Physiologists hold at least a four-year university degree, often accredited by national professional bodies such as Exercise & Sports Science Australia. The course covers: musculoskeletal anatomy, biomechanics, physiology, pathology, psychology, evidence-based chronic disease management; cardiopulmonary and metabolic rehabilitation, injury prevention and return to activity; health promotion and behaviour change; and nutrition for exercise and health.[25] At the University of Sydney, for example, students also complete over 500 hours of clinical and non-clinical placements across the final two years of their course in addition to a community project placement in the final year.[26]

By contrast, many fitness trainers hold short vocational certificates, which provide essential knowledge for general fitness programming but not the clinical depth required for chronic disease management or psychosocial complexity. This deeper academic foundation and extensive clinical training placements enable Accredited Exercise Physiologists to interpret medical histories, tailor interventions for specific conditions, and ensure safe, effective progression for individuals with comorbidities.

Another important issue is that whole-of-person care requires an ability to address chronic illnesses such as cardiovascular disease, diabetes, arthritis, cancer, and mental health conditions. Accredited Exercise Physiologists specialise in exercise prescription for prevention, treatment, and management of these conditions,

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Stubbs B, Vancampfort D, Rosenbaum S, Firth J, Cosco T, Veronese N, Salum GA, and Schuch FB. (2017). An examination of the anxiolytic effects of exercise for people with anxiety and stress-related disorders: A meta-analysis. *Psychiatry Res*. 249:102-108.

Stubbs B, Vancampfort D, Hallgren M, Firth J, Veronese N, Solmi M, Brand S, Cordes J, Malchow B, Gerber M, Schmitt A, Correll CU, De Hert M, Gaughran F, Schneider F, Kinnafick F, Falkai P, Möller HJ, and Kahl KG. (2018). EPA guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and Position Statement from the European Psychiatric Association (EPA), supported by the International Organization of Physical Therapists in Mental Health (IOPTMH). *Eur Psychiatry* 54:124-144.

[24] Wang S, Gordon LG, Cormie P, and Hayes SC. (2023). Cost-utility of an accredited exercise physiologist-led intervention for women with endometrial cancer. *Supportive Care in Cancer* 3:470.

[25] See, for example: University of Sydney. (2025). *Bachelor of Applied Science (Exercise Physiology) Unit of Study Table*. Accessed September 2025 at: https://www.sydney.edu.au/handbooks/medicine-health/coursework/exercise-physiology/exercise-physiology-table.html.

[26] University of Sydney. (2025). *Bachelor of Applied Science (Exercise Physiology) Professional Practice*. Accessed September 2025 at: https://www.sydney.edu.au/courses/courses/uc/bachelor-of-applied-science-exercise-physiology7.html.

working alongside general practitioners, physiotherapists, and other allied health professionals. Accredited Exercise Physiologists fill the practice gap that exists in the delivery, maintenance, and follow-up of patients for whom lifestyle modification has been prescribed. For example, general practitioners often provide excellent advice on physical activity and dietary changes, but are less likely to provide tailored exercise or ongoing support given a lack of time, understanding of the physiological and metabolic responses to exercise, or understanding of patients' readiness to change behaviours.[27] This practice gap is filled by Accredited Exercise Physiologists.

As noted above, Accredited Exercise Physiologists (AEPs are recognised within the Australian health system under Medicare, the Department of Veterans' Affairs, workers' compensation schemes, and private health insurance, making them a nationally regulated and integrated part of the health workforce. They also deliver supports that are funded by the National Disability Insurance Scheme and the Australian Government's aged care programs.

- Medicare funding is available through the Medical Benefits Scheme for exercise physiologists where the patient has a chronic condition and complex care needs that are being managed by a medical practitioner (other than a specialist or consultant physician) under either a GP chronic condition management plan that has been prepared or reviewed in the last 18 months; or a multidisciplinary care plan.[28]
- Veterans who hold a Gold Care can access exercise physiology services that are funded by the Department Veterans Affairs.[29]
- People who are receiving support through the Commonwealth Home Support Program or who have a Home Care Package can access support from exercise physiologists. Older people receiving care funded though the short-term restorative care program of the residential aged care program can also receive support from AEPs through those programs.[30]
- Participants in the National Disability Insurance Scheme can use the funds in their plans to purchase supports from exercise physiologists that are reasonable and necessary.[31]
- State Government workers compensation and transport accident schemes also fund the provision of exercise physiology.[32]
- Private health insurance also funds the provision of exercise physiology as part of 'extras' cover.[33]

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[27] Soan EJ, Street SJ, Brownie SM, Hills AP. (2014). Exercise physiologists: essential players in interdisciplinary teams for noncommunicable chronic disease management. *J Multidiscip Healthc.* 7:65-8.

[28] Australian Government. Department of Health, Disability and Ageing. (2025). M*edicare Benefits Schedule (MBS) Online.*

[29] Australian Government. Department of Veterans Affairs. (2025). *Exercise Physiologist Schedule of Fees Effective 1 July 2025*.

[30] Australian Government. Department of Health, Disability and Ageing. (2025). *Commonwealth Home Support Program (CHSP) 2025-27 Manual.*

Australian Government. Department of Health and Aged Care. (2024). Home Care Packages (HCP) Program Operational Manual: A guide for home care providers.

[31] National Disability Insurance Agency. (2025). *National Disability insurance Scheme Pricing Arrangements and Price Limits 2025-26.*

[32] State Insurance Regulatory Agency (New South Wales). (2025). *Accredited Exercise Physiology Fees and Practice Requirements.*

Transport Accident Commission (Victoria). (2025). *Exercise Physiology.*

WorkSafe Victoria. (2025). *Allied health provider fee schedule*.

WorkSafe Queensland. (2023). *Allied health fee schedule*.

[33] Exercise and Sports Science Australia. (2024). *Accredited Exercise Physiologists guide to private health insurance.*

This integration into the broader healthcare landscape highlights their capacity to address health holistically rather than focusing solely on fitness outcomes.

Health is shaped as much by behaviour and mindset as by physical capacity. Accredited Exercise Physiologists are trained in behaviour change techniques such as motivational interviewing, self-efficacy building, and relapse prevention strategies. These skills are critical for sustainable lifestyle change, particularly for individuals managing obesity, depression, or substance-related health issues. Fitness trainers may offer encouragement, but Accredited Exercise Physiologists provide structured, evidence-based approaches to overcoming psychological barriers, aligning interventions with a patient's readiness for change and psychosocial circumstances. This expertise supports the development of better ongoing self-management which in turn supports the sustainability of the health and care systems.[34]

Whole-of-person health often involves populations with higher risk, older adults, people with disabilities, or those recovering from injury or surgery. Accredited Exercise Physiologists are equipped to conduct detailed assessments of cardiovascular risk, musculoskeletal function, and overall health status. They develop safe, personalised exercise plans with an awareness of medications, side effects, and contraindications. Fitness trainers, while skilled in general program design, lack the clinical training to manage such risks comprehensively.

Finally, whole-of-person care requires coordinated, interdisciplinary support. Accredited Exercise Physiologists are recognised allied health professionals who communicate with doctors, nurses, psychologists, and other specialists to ensure continuity of care. This collaboration ensures that exercise interventions are not isolated activities but integral to a broader treatment plan. Fitness trainers typically operate outside the medical system, limiting their ability to provide truly holistic care.

While fitness trainers play an important role in promoting general fitness and motivation, Accredited Exercise Physiologists bring a deeper, evidence-based, and clinically informed perspective. Their ability to integrate physical, psychological, and medical considerations makes them better suited for addressing whole-of-person issues. In an era where chronic disease and mental health concerns dominate healthcare systems, exercise physiologists stand out as essential practitioners for delivering safe, effective, and holistic care.

Although participation in physical activity by generally healthy individuals can be self-directed, there are demands for prescribed exercise for people with specific needs or care, such as older adults, individuals with disability, and patients who require exercise as a part of their treatment or rehabilitation for a disease, injury or operation. Accredited Exercise Physiologists are well placed to assess need and prescribe exercise programs and to deliver those programs. For example, they can play a key role in the assessment and support of individuals with Autism Spectrum Disorder by evaluating motor skills, physical health, and sensory needs to design safe, tailored, and engaging exercise programs. These programs aim to improve gross and fine motor skills, coordination, balance, and cardiovascular fitness, which can lead to increased confidence, better social participation, and improvements in mood and regulation. Accredited Exercise Physiologists also identify barriers to exercise, such as sensory challenges and coordination difficulties, and adapt interventions to be fun, game-based, and effective for the individual's specific need.[35]

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[34] Kirwan M, Gwynne K, Laing T, Hay M, Chowdhury N, Chiu CL. (2022). Can Health Improvements from a Community-Based Exercise and Lifestyle Program for Older Adults with Type 2 Diabetes Be Maintained? A Follow up Study. *Diabetology* 3(2):348-354.

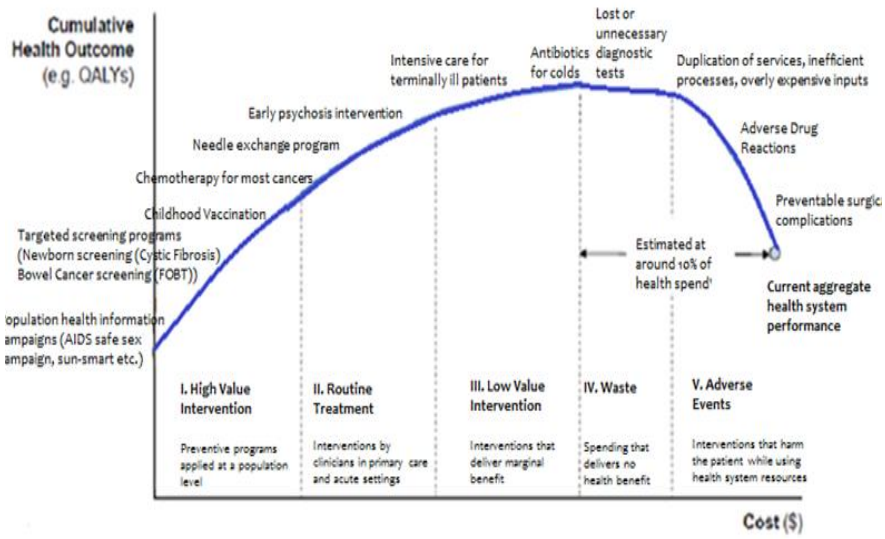
[35] Jiang J, Wang G, Gu Q, Wang X, and Liu J. (2024). Quantifying the efficacy of physical activity on motor skills and stereotypies in children with autism spectrum disorder: A meta-analysis of randomized controlled trials from the last decade. *Research in Autism Spectrum Disorders* 114:102395.

## 4 Health as Investment

In general, governments do not tend to take account of the second-round effects of their expenditure when they make their budget decisions. For example, Departments are not allowed to reduce the net cost of a new policy proposal to the Budget because of the fact that around one third of departmental costs are returned to the Treasury through the tax system. Similarly, the multiplier effect of all Government expenditure in the economy as a whole, and the resultant increase in tax, are not usually counted. There are a number of reasons why this should be the case. First, there are multiplier effects (and so second-round effects) with any Government spending and to the extent that these multiplier effects are roughly equal nothing is gained, when comparing bids) from taking them into account. Second, if multiplier effects of new expenditure were counted, then they would also need to be counted for offset expenditure that is being discontinued. Taking them into account would therefore often be a zero-sum gain. Third, if the Government were not to spend a given amount of funds, and indeed did not raise those funds through taxation, then those funds would be expected to be spent in the non-government sector of the economy, with similar multiplier effects. However, even accepting that second round effects should not be considered in the Budget Process, the same rules should not be applied to the additional economic growth that may be driven by expenditure. Again, this argument holds most sway when arguing for an increase in the share of government expenditure devoted to a particular sector rather than to offsetting moves within a sector, although even there the relative efficiencies of the two expenditures should be considered.

The overall efficiency of Australia's health system is impacted by health interventions with widely varying levels of cost-effectiveness (see Exhibit 3).[36]

***Exhibit 3: Health system performance (Australian estimates)***




Source: Based on Pacific Strategy Partners analysis; TO Tengs, et al, 'Five-hundred life-saving interventions and their cost effectiveness'. Risk Analysis, 1995, 15(3); 369-484

Notes: 1 Australian Estimates based on Productivity Commission (2006),'Potential Benefits of the National Reform Agenda', Report to COAG. National Health and Hospitals Reform Commission (2009) 'The Australian Health Care System: The Potential for Efficiency Gains -

[36] Cullen DJ, and Ergas H. (2014). *Efficiency and Productivity in the Australian Health Care System*. Canberra; Australian National University.

Health care interventions as either: 1) High-Value Interventions, which are typically public health or primary care preventive programs applied at a population level; 2) Routine Treatment, which encompasses interventions by clinicians in primary care and acute setting; 3) Low-Value Interventions, which may be cost effective but at a lower rate than other interventions; 4) Waste, including duplication; and 5) Adverse Events, which create further demand for health services.

The approach to improving efficiency/productivity needs to be different in each of these domains. Moreover, it needs to be recognised that potentially contentious Issues of distribution will inevitably arise. For example, while a pure efficiency analysis might argue for the allocation of scare resources to areas of the cost curve in Exhibit 3 offering the largest marginal improvement, this might clash with equity goals. For example, a pharmaceutical can only be listed on the Commonwealth's Life Savings Drug Program if it has been accepted by the Pharmaceutical Benefits Advisory Committee as clinically effective but not recommended for inclusion on the Pharmaceutical Benefits Scheme due to unacceptable cost-effectiveness. In this case, the issue of technical efficiency (within the program) is subordinated to issues of distribution and to judgements about equity of access. This is perhaps unavoidable, and indeed may be desirable, but it must be understood lest system wide measures are inappropriately applied.

In the case of expenditure on prevention, there are strong arguments for government taking a longer term and wider view when addressing the issue of cost effectiveness. The effects that are of concern here are those related to investment in human capital (essentially public and private health and education spending). In brief, this expenditure can be better thought of a being of a capital nature (that is, investment) and hence the relevant question is what return on investment (additional economic growth) does the expenditure induce. Because the national accounts do not consider the human capital equation the usual multipliers that are developed from those national accounts do not measure this impact. A proper understanding of the long-term impact of health investments requires that the long-term economic benefits of the investment also be taken into account.

## 5 Conclusion

The evidence is unequivocal: physical inactivity and ineffective physical activity are not only public health issues but also economic liabilities that undermine national productivity, workforce participation, and long-term fiscal sustainability. Lost workdays, reduced output, and premature exits from the labour market are preventable consequences that drain billions from the economy each year. Continuing to underinvest in preventive health strategies and exercise promotion means tolerating escalating costs, widening inequalities, and missed opportunities for economic growth. The scale of the problem demands that policymakers, employers, and health systems treat physical activity promotion as a central component of economic as well as health policy.

To reverse these losses, urgent action is needed across multiple fronts. Governments should prioritise investment in preventive health infrastructure, incentivise workplace wellness programs, and embed exercise physiology services more deeply into chronic disease management. Employers must recognise that fostering active workplaces is not a discretionary cost but a high-return investment in productivity and competitiveness. And communities must be supported through urban planning, active transport, and inclusive facilities that make daily movement the easy choice. The costs of inaction are already clear and unsustainable. The time to act is now – turning the burden of inactivity into an opportunity to improve health, strengthen the workforce, and unlock substantial economic dividends. Accredited Exercise Physiologists specialise in exercise prescription for prevention, treatment, and management of chronic conditions, and offer a cost-effective option for investment in prevention, working alongside general practitioners, physiotherapists, and other allied health professionals.

The issues raised by physical inactivity and ineffective physical activity should therefore be a key concern for the Productivity Commission's proposed new National Prevention Investment Framework as they offer significant opportunities for improving productivity in Australia.

## About the Author

Dr David Cullen is currently Adjunct Professor at MUCHE (Macquarie University for the Health Economy).

Prior to his retirement in 2022, Dr Cullen held senior roles in the Australian Public Service working in the aged care, disability services and health sectors for twenty-five years, including as:

- Chief Economist of the National Disability Insurance Scheme (2016-2022).
- Chief Economist and Head of Strategic Policy at the Australian Department of Health (2012-2016).
- Principal Advisor, Aged Care Policy at the Australian Department of Health (2001-2012).
- Principal Advisor to the Chair of the Royal Commission into Aged Care Quality and Safety (2018-2021).

Internationally Dr Cullen is recognised as one of Australia's leading health economists and as an expert in the regulation of social service markets.

- Invited speaker at the OECD's Global Forum on Competition (2024).
- Commissioned by the World Bank to advise the Malaysian Government on options to develop an Inclusive and Sustainable Aged Care System for Malaysia (2021).
- Invited Member, OECD High Level Reflection Group on Health Statistics (2015 to 2017).
- President of the OECD's Expert Group on the Economics of Prevention (2014 to 2015) and member of the Expert Group (2012 to 2013).
- Member, OECD Health Committee's Expert Group on Payment Systems (2014 to 2015).
- Fellow of the Royal Society for Public Health since 2013.
- Fellow of the Royal Statistical Society since 2014.