

NDIS Evidence Advisory Committee Consultation September 2025 - Exercise Physiology Focus

Prepared by Cerebral Palsy Alliance

For the NDIS Evidence Advisory Committee

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Cerebral Palsy Alliance Submission to the NDIS Evidence Advisory Committee (EAC): Exercise Physiology Model

1. About Cerebral Palsy Alliance (CPA)

Cerebral Palsy Alliance (CPA) has evolved to become a global leader in CP, bringing together leading services, research, advocacy and technology to improve the lives of people with CP and their families at every stage of life. CPA's dedicated research institute is instrumental in privately funding research into CP leading to reduced rates and severity of the condition in Australia.

Founded in 1945, CPA delivers life-changing services to thousands of children and adults across New South Wales and the Australian Capital Territory, employing more than **225 allied health professionals**, including **14 Accredited Exercise Physiologists (AEPs)**, in a staff cohort of over 2500.

CPA's service model integrates clinical expertise with research translation through the **Cerebral Palsy Alliance Research Institute**, a global leader in neurorehabilitation and early intervention research. CPA's alliance with research institutions such as the University of Sydney enables real-world implementation of best practice in exercise, motor learning, and functional outcomes for people with disability.

Under the Strategy 30 framework, CPA's mission is to maximise functional independence, participation, and lifelong health for people with cerebral palsy and similar conditions. Exercise Physiology (EP) forms a cornerstone of this mission—by prescribing holistic exercise programs and delivering education to promote a healthy lifestyle to improve the individual's quality of life, personal capacity, independence and wellbeing while also minimising or prevent secondary conditions associated with their disability.

2. Executive Summary

Cerebral Palsy Alliance welcomes the opportunity to respond to the NDIS Evidence Advisory Committee (EAC) consultation on the Exercise Physiology (EP) model.

CPA strongly supports the continued and expanded inclusion of Exercise Physiology as a funded allied health support under the NDIS, recognising it as a safe, evidence-based, and cost-effective intervention that improves function, participation, and long-term health outcomes for people with complex disabilities.

There is compelling national and international evidence that an exercise program delivered and/or developed by an accredited Exercise Physiologist:

- Improves cardiovascular fitness, muscle strength, balance, and endurance in people with neurological conditions.
- Reduces the risk of preventable chronic conditions, such as cardiovascular disease, diabetes, and obesity.
- Enhances quality of life, independence, and community participation.
- Prevents or slows the progression of musculoskeletal deterioration associated with cerebral palsy and other lifelong conditions.

CPA's submission draws on the best available evidence and population-level studies as well as CPA's own data, practitioner insights and clinical case studies. Together, this evidence demonstrates that Exercise Physiology meets all EAC assessment criteria for *safety, suitability, and value for money*.

3. Safety and Suitability

Exercise Physiology is a clinically governed, evidence-based allied health profession regulated by **Exercise & Sports Science Australia (ESSA)**. Accredited Exercise Physiologists (AEPs) hold four-year tertiary qualifications and meet ongoing professional development and safety standards. According to ESSA's national guidelines, AEPs are qualified to design, deliver, and evaluate exercise interventions for people with chronic diseases, disabilities, and complex conditions.

AEPs and the Disability Context

Within disability settings, AEPs provide tailored interventions that address:

- Physical impairments (e.g., reduced strength, coordination, and balance).
- Functional goals (e.g., transfers, walking, wheelchair mobility).
- Participation outcomes (e.g., sport, recreation, community engagement).
- Prevention of secondary conditions (e.g., musculoskeletal pain, fatigue, obesity).

The ESSA (2021) Exercise for Disabilities eBook underscores that exercise programs for people with cerebral palsy should include both aerobic and strength training, delivered by qualified professionals who can manage the nuances of muscle tone, fatigue, spasticity, and energy expenditure. The document also provides direct [guidelines](#) on dosing—recommending a combination of 150 minutes of moderate-intensity exercise and 2–3 strength sessions per week, tailored to each individual's Gross Motor Function Classification System (GMFCS) level. The GMFCS is a five-level clinical tool used to classify the gross motor abilities of individuals with cerebral palsy, based on self-initiated movement such as sitting, standing, and walking. It provides a standardised

way to describe motor function, set realistic therapy goals, and match intervention intensity to an individual's movement capacity across the lifespan.

Safety in Practice

CPA's EP services operate under a robust *clinical governance framework*, aligned with NDIS Quality and Safeguards standards. Every EP intervention includes:

- Comprehensive pre-exercise screening and medical history review.
- Ongoing risk assessment and clinical documentation.
- Real-time monitoring of exercise responses (heart rate, fatigue, balance).

'Delivery within an interdisciplinary team to meet complex client needs; such as post surgical rehabilitation in conjunction with physiotherapists or speech pathologists for clients with complex communication / occupational therapists for assess to suitable equipment to enable safe delivery of intervention. CPA's EP practitioners report *zero adverse events* and high participant safety outcomes, with typical session ratios of 1:1 or small groups (maximum four participants) to ensure direct supervision or reduce risk of falls.

Hydrotherapy and Safe Accessibility

Hydrotherapy is an integral part of CPA's EP service and a key modality for individuals with limited mobility. Sessions are conducted in temperature-controlled pools (32–34°C), providing buoyancy and resistance that enhance joint mobility, circulation, and confidence. For clients who cannot safely perform load-bearing exercise, hydrotherapy enables movement otherwise impossible on land.

This integrated model—combining land-based therapy, hydrotherapy, and gym-based strength training—embodies best practice in safety, adaptability, and inclusiveness.

4. Evidence Base

Exercise Physiology is a rigorously evidence-based profession that delivers safe, effective and clinically important outcomes for people with cerebral palsy (CP) across the lifespan. A large body of systematic reviews and meta-analyses demonstrates that structured exercise interventions—whether aerobic, resistance, task-oriented, aquatic, plyometric or participation-based—produce meaningful improvements in strength, mobility, endurance and participation. Under the ESSA scope of practice, these interventions sit squarely within the remit of Accredited Exercise Physiologists (AEPs), who are trained to prescribe, supervise and evaluate such programs safely for people with neurological and developmental disabilities.

4.1 Exercise Intervention Evidence by Type

Aerobic and Mixed Training

Aerobic, resistance and combined programs consistently enhance gross-motor function, gait speed and muscle strength in individuals with CP.

- Wang et al. (2024) demonstrated that both aerobic and resistance interventions significantly improved gross motor function on the Gross Motor Function Measure (GMFM) scores and gait speed, with mixed or resistance programs producing the greatest functional gains.
- Ryan et al. (2017) found that aerobic exercise produced small, significant improvements in gross-motor outcomes, supporting its use as an effective therapy.

Functional, Task-Oriented and Strength Training

Task-oriented, functional and resistance training are strongly supported by evidence:

- Alhumaid et al. (2025) (review of reviews) concluded that task-specific and virtual-reality-assisted training most consistently improved limb and motor function, while progressive resistance training safely increased strength.
- Merino-Andrés et al. (2022) and Clutterbuck et al. (2019) showed that structured strength and functional activity training improved gait speed, balance and gross motor function.
- Liu et al. (2025) reported that resistance training increased muscle-fibre diameter and lower-limb strength, demonstrating physiological adaptation in CP.
- Booth et al. (2022) and Lin et al. (2025) found that treadmill and functional gait training improved walking speed, dynamic balance and endurance.

These interventions directly align with AEP competencies in neuromuscular conditioning, strength and functional retraining.

Aquatic, Sports, Plyometric and Whole-Body Vibration Training

- Li F et al. (2025) and Nakatani et al. (2025) reported that aquatic exercise improved GMFM scores, reduced muscle tone and enhanced walking ability, with high enjoyment and adherence.
- Garcia-Carrillo et al. (2024) found that plyometric-jump training significantly increased lower-limb power and mobility.
- Saquetto et al. (2015) showed that whole-body vibration training improved gait speed and bone density without safety concerns.

- Sousa Junior et al. (2024) demonstrated that sports-focused, participation-based exercise increased overall physical-activity levels and motor ability.

All of these modalities are explicitly encompassed within the ESSA-defined scope of practice for AEPs to deliver exercise in both clinical and community settings.

4.2 Evidence by Population

Children and Adolescents

The strongest evidence base relates to ambulant and semi-ambulant children. Active, high-repetition programs consistently improve gross-motor ability, postural control and participation (Clutterbuck et al., 2019; Xiao et al., 2024; Dewar et al., 2015). Liang et al. (2020) and Hsu et al. (2019) found that higher intensity and longer duration correlated with greater gains. Enjoyment and adherence were particularly high in aquatic-based programs (Nakatani et al., 2025; Velasco Aguado et al., 2025). These findings reinforce CPA's early-intervention approach, embedding EP into therapy from childhood to promote lifelong movement confidence and activity habits.

Adults and Across the Lifespan

Although fewer studies examine adults, results are positive. Andreopoulou et al. (2025) reported improvements in lower-limb strength and functional capacity in adults with CP, even when walking-speed gains were modest. Longitudinal surveillance (Peterson et al., 2015; Cremer et al., 2017) shows that regular exercise reduces chronic-disease risk and functional decline, underlining the importance of lifelong EP access. CPA's adult EP programs mirror this evidence through progressive resistance, aerobic conditioning and community-transition supports – having the potential to realise savings for the scheme through increased capacity / independence, and therefore less dependence on other NDIS supports.

4.3 Safety and Implementation

Across all systematic reviews, professionally supervised exercise interventions are consistently safe. No serious adverse events have been identified (Ryan et al., 2017; Clutterbuck et al., 2019; Alhumaid et al., 2025). Supervision by qualified practitioners is a key determinant of safety—highlighting the necessity of AEP-led delivery under ESSA accreditation and CPA clinical governance. It could compromise safety if exercise interventions were undertaken by unqualified workers, and benefits lost without supervised goal based and graded programs.

4.4 Physiological Rationale and Translational Evidence

Complementary studies clarify the biological rationale for exercise in CP. Verschuren et al. (2018) describe accelerated musculoskeletal ageing and early sarcopenia (muscle weakness reduced endurance and walking speed), advocating structured exercise and nutrition to preserve muscle mass. Peterson et al. (2015) and Cremer et al. (2017)

demonstrate a high prevalence of chronic conditions and multimorbidity, positioning exercise as preventive medicine. CPA's Research Institute translates these findings into practice by co-designing and evaluating evidence-based exercise protocols across the lifespan, ensuring that NDIS-funded EP services remain contemporary and measurable.

4.5 Synthesis

Collectively, the evidence shows that:

- **Effectiveness** – Aerobic, resistance, functional, aquatic and sports-based exercise programs improve gross motor function, strength, gait, balance and participation. This underscores effectiveness of EP to improve both functional capacity and health and wellbeing.
- **Safety** – No serious adverse events occur when delivered under professional supervision.
- **Scope** – All interventions fall within the ESSA-defined practice of Accredited Exercise Physiology, encompassing assessment, prescription and progression of therapeutic exercise. The effectiveness of exercise interventions developed and delivered by personnel without these qualifications has not been evaluated.
- **Lifespan Relevance** – Benefits extend from early intervention through adulthood, preventing secondary complications and sustaining independence.

Exercise Physiology is therefore an essential, evidence-based therapeutic intervention for people with cerebral palsy. When delivered within CPA's interdisciplinary model, EP achieves measurable, safe and cost-effective improvements in health, function and participation.

5. CPA's Exercise Physiology Model

Cerebral Palsy Alliance employs 14 Accredited Exercise Physiologists within a multidisciplinary workforce of over 225 allied health professionals. EPs are embedded within CPA's therapy teams and deliver both individual and group programs across clinic, hydrotherapy, and community settings.

Core principles of the CPA EP model include:

1. **Evidence-based practice** — Programs are designed according to ESSA and international research standards, drawing on peer-reviewed evidence and CPA's internal outcome data.
2. **Multidisciplinary integration** — EPs collaborate with physiotherapists, occupational therapists, and speech pathologists to align goals and maximise participation.

3. **Clinical governance and safety** — Delivery occurs within CPA's accredited governance system, AEP's receive regular quality clinical supervision and training, ensuring effective, safe service provision and compliance with NDIS Quality and Safeguards standards.
4. **Accessibility and flexibility** — Services are offered at CPA therapy centres, hydrotherapy pools, accessible gyms, schools, sports clubs, homes, and via telehealth.
5. **Outcome measurement** — Validated tools such as the *Gross Motor Function Measure (GMFM)*, *6-Minute Walk Test*, and *Fatigue Impact Scale* are routinely used to track functional progress and quality of life.

Service Modalities:

- *Hydrotherapy*: Conducted in temperature-controlled pools, promoting range of motion, circulation, and relaxation for those with limited mobility.
- *Clinic-based gym sessions*: Using accessible equipment to build strength, endurance, and fitness.
- *Functional land-based programs*: Gait, transfers, balance, and endurance activities tailored to real-life tasks.
- *Community and Group programs*: Socially engaging, cost-effective sessions promoting motivation and community participation.
- *Home exercise programs*: Customised plans supported by carers or support workers under EP supervision.

Telehealth programs: promotes client and carer coaching in their environment of choice, supports equitable access to physical activity participation

Integration with the Research Institute

CPA's EP practice is closely aligned with the CPA's Research Institute, which leads global studies on exercise, neuroplasticity, and early intervention. Research findings directly inform CPA's EP delivery, ensuring that interventions funded through the NDIS are clinically effective and evidence aligned.

6. Value for Money

Exercise Physiology represents significant value for money for the NDIS. Regular, structured exercise prevents secondary complications, maintains function, and reduces reliance on higher cost supports.

NDIS Value Proposition

NDIS-funded supports must be *reasonable, necessary, and cost-effective*. Exercise Physiology meets all three criteria by:

- Delivering measurable functional gains that reduce dependence on personal-care supports;
- Preventing costly deterioration and secondary complications; and
- Supporting sustainable independence and participation.

CPA's service data demonstrates that sustained EP engagement can reduce the need for physiotherapy hours, delay equipment upgrades and requirements for mobility aids, and improve wellbeing. For participants, these improvements translate into lower long-term support costs and greater autonomy.

Return on Investment

Even modest functional improvements—such as maintaining transfer ability or mobility—can defer high-cost support requirements for years. Ongoing EP engagement helps participants sustain independence and avoid regression, offering measurable cost savings for both participants and the Scheme

Investing in early and ongoing Exercise Physiology offers strong economic returns. Tonmukayakul et al. (2018) identified that the lifetime financial burden of cerebral palsy includes both direct healthcare costs and indirect costs from reduced productivity and informal care demands. Preventive, function-maintaining supports like Exercise Physiology can reduce these pressures by improving health and delaying loss of independence.

An example to demonstrate is a current CPA client: Female, 36 years that has been able to improve her functional mobility and core strength enabling her to transfer with the assistance of 1x support worker, rather than two support workers, reducing daily support costs.

Preventing Long-Term Health Costs

Studies show adults with CP have substantially higher rates of chronic, preventable conditions:

- Peterson et al. (2015) found two to three times higher incidence of arthritis, hypertension, and joint pain compared with adults without CP.
- Cremer et al. (2017) reported that nearly 60% of middle-aged adults with CP experience multimorbidity, double that of age-matched peers.

By improving cardiovascular health, bone density, and muscle strength, AEP-led programs reduce downstream healthcare utilisation, hospitalisations, and personal care needs.

7. Summary of Alignment with EAC Assessment Criteria

EAC Criterion	Evidence Supporting Exercise Physiology Inclusion
Safety	Accredited by ESSA; CPA reports zero adverse incidents. Supported by systematic reviews confirming no reported harm.
Suitability	Addresses functional goals, health maintenance, and participation needs across all GMFCS levels.
Value for Money	Demonstrated prevention of chronic disease, reduced care dependency, and lower long-term support costs.
Evidence Strength	Backed by ESSA standards, Cochrane and AACPDm reviews, and CPA's translational research.
Clinical Integration	Delivered in multidisciplinary teams under formal governance, aligning with NDIS goals and reporting standards.

8. Case Study to demonstrate importance of EP within the NDIS plan:

Client X is a 36-year-old male with histiocytosis, diabetes insipidus, and cerebellar ataxia — a progressive neurodegenerative condition affecting coordination, balance, and motor control. He lives part-time in CPA Supported Independent Living (SIL) housing and part-time with his family.

Client X engages in three weekly EP sessions at CPA: hydrotherapy, individual gym-based training, and group land therapy. These sessions maintain his ability to perform standing pivot transfers, mobilise independently in a manual wheelchair, and participate in wheelchair rugby and racing.

Without ongoing EP intervention, his condition deteriorates rapidly, increasing falls risk, dependence, and healthcare costs. His EP team adjusts programs weekly to accommodate fatigue, maintain cardiovascular fitness, and ensure safety.

Client X's NDIS plan initially limited funding to EP “assessment and program development only,” directing delivery to Allied Health Assistants (AHAs). However, due to his complex, progressive condition, AHA-led programs proved clinically insufficient. CPA absorbed the unfunded costs of ongoing EP sessions to maintain his independence — a clear example of system misalignment.

This case demonstrates that restricting EP access undermines functional maintenance and leads to higher long-term costs. Regular AEP-led interventions maintain independence, prevent regression, and optimise funding efficiency.

9. Recommendations for EAC to consider

1. **Recognise Exercise Physiology as a core allied health support** within the NDIS for people with neurological, musculoskeletal, and developmental disabilities.
2. **Maintain and expand funding** for EP under *Capacity Building – Improved Daily Living* and *Improved Health & Wellbeing* categories.
3. **Embed EP within interdisciplinary models of care**, ensuring collaborative delivery alongside physiotherapy and occupational therapy.
4. **Invest in longitudinal research and data partnerships** with organisations such as the CPA Research Institute to quantify outcomes and cost-effectiveness.
5. **Address restrictive funding interpretations** that limit EP to assessment-only activities, recognising the ongoing clinical necessity of direct intervention for lifelong and progressive conditions.

10. Conclusion

We thank the committee for providing us the opportunity to share our views on this vital model to support people with CP to have a full and fulfilling life. Please contact us for any more or clarifying information.

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