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Research Article

ReAttach Therapy for Persistent Post-Concussion Syndrome: An Occupational Therapy Research Protocol (2025)

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Abstract

Persistent post-concussion syndrome (PCS) affects 30–50% of patients following mild traumatic brain injury (mTBI), causing significant functional impairment. Autonomic nervous system dysregulation is increasingly recognized as a key maintaining factor. ReAttach therapy, targeting autonomic regulation through bilateral stimulation and co-regulation, may address this neurophysiological component. This protocol describes a case series study evaluating an occupational therapy intervention combining ReAttach therapy with psychoeducation and activity-focused interventions for persistent post-concussion symptoms. Ten adults with symptoms persisting beyond six weeks post-mTBI will receive four to six individual sessions. Outcome measures include the Rivermead Post-Concussion Symptoms Questionnaire (RPQ-13), Perceived Stress Scale (PSS-10), Canadian Occupational Performance Measure (COPM), and Activity Balance Scale, assessed at baseline, post-treatment, and 4- and 12-week follow-up. The combination of neurophysiological and occupation-focused outcomes demonstrates the value of an occupational therapy perspective in post-concussion rehabilitation. Results will be presented at the Global ReAttach Summit 2026 and published in peer-reviewed journals. In general, the study focusses To describe clinical outcomes of patients with persistent post-concussion syndrome (PPCS) receiving occupational therapy integrated with ReAttach therapy.

Keywords: post-concussion syndrome, mild traumatic brain injury, ReAttach therapy, occupational therapy, autonomic regulation, COPM

Introduction

Persistent post-concussion syndrome (PCS) represents a significant clinical challenge affecting 30–50% of individuals following mild traumatic brain injury (mTBI). While most patients recover within weeks, a substantial minority experience persistent symptoms including headache, dizziness, cognitive difficulties, sensory hypersensitivity, fatigue, and emotional lability lasting months or years. The functional consequences are considerable, with limitations in work capacity, social participation, and daily life.

Growing evidence indicates that autonomic nervous system dysregulation plays a central role in maintaining persistent symptoms. Patients often exhibit sustained hyperarousal, altered stress responses, and impaired self-regulation capacity. This autonomic component—characterized by heightened sympathetic tone and reduced parasympathetic activity—may perpetuate symptoms even in the absence of structural brain injury.

Standard rehabilitation approaches focusing on rest and gradual cognitive reactivation are often insufficient. Consequently, there is a growing demand for individualized, multimodal interventions that address both neurophysiological regulation and functional participation. ReAttach therapy is a transdiagnostic intervention designed to restore autonomic balance through bilateral stimulation combined with therapeutic co-regulation. Integrating principles from EMDR, attachment theory, and polyvagal theory, it facilitates adaptive processing of dysregulated physiological states. Preliminary studies indicate its effectiveness across populations with autonomic dysregulation, including PTSD and chronic pain.

Occupational therapy (OT) emphasizes meaningful participation and activity-based recovery. By integrating ReAttach therapy within an OT framework, this study seeks to combine autonomic

regulation with activity re-engagement, promoting both symptom reduction and restored participation.

Study Design

This research follows a **prospective case series design (N=10)**. The objective is to describe clinical outcomes of adults with persistent post-concussion symptoms receiving occupational therapy integrated with ReAttach therapy.

Setting: Private occupational therapy practice in Kollum, The Netherlands, and patient homes in the Friesland region. **Duration:** October 2025 – March 2026.

Participant Selection
Inclusion Criteria:

Adults aged 18–70 years with documented mild TBI, persistent symptoms (>6 weeks post-injury), and at least three ongoing symptoms (e.g., headache, dizziness, fatigue, emotional instability). Participants must experience functional limitations in work, study, or daily life and demonstrate motivation for therapy.

Exclusion Criteria:

Moderate/severe TBI with structural damage, active psychiatric crisis, or any condition precluding participation.

Recruitment:

Participants will be recruited via general practitioners, neurologists, occupational therapy referrals, and direct inquiries. A recruitment log will document screening, inclusion, and follow-up flow.

Intervention Components

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Integration Approach: How ReAttach and OT Are Combined

The integrated intervention combines ReAttach therapy and occupational therapy within the same treatment sessions to ensure direct linkage between autonomic regulation and functional participation. Each 45–60 minute session follows a consistent structure:

Opening (5 minutes): Brief check-in, review of previous session, and regulation of attention.

ReAttach Component (20–25 minutes): Bilateral stimulation and co-regulation techniques facilitating autonomic balance and emotional processing.

Occupational Therapy Component (20–25 minutes): Goal-directed activity coaching, energy management, and graded participation tasks guided by COPM goals.

Integration and Homework (5–10 minutes): Reflection on physiological and functional outcomes, with individualized assignments to consolidate learning.

Rationale for Integration:

Combining ReAttach and OT components within the same session creates a dynamic bridge between neurophysiological stabilization and real-world activity engagement. This model allows patients to immediately apply self-regulation experiences to meaningful occupational tasks, enhancing embodiment and functional carryover.

Session-to-Session Progression:

Sessions 1–2: Assessment and psychoeducation emphasizing self-awareness and pacing.

Sessions 2–5: Balanced integration of ReAttach and activity coaching.

Sessions 4–6: Consolidation of regulation skills and relapse prevention.

Illustrative Example:

For instance, a patient experiencing sensory overload during computer work may first use ReAttach bilateral stimulation to regulate hyperarousal, followed by graded exposure to computer-based tasks guided by pacing and ergonomic strategies. This immediate connection between physiological calm and functional activity exemplifies the therapeutic integration.

Therapist Qualifications

Treatment is provided by a registered occupational therapist (Dutch Register) with over 30 years of experience in neurological rehabilitation. The therapist specializes in post-concussion, post-COVID, and stress-related dysregulation syndromes.

Professional credentials include certification as both **ReAttach therapist** and **ReAttach trainer** (authorized to train other professionals), in collaboration with the ReAttach Academy. The practitioner has extensive multidisciplinary training in physiotherapy, neurorehabilitation, NLP, and systemic approaches, and has published on related clinical topics.

Treatment fidelity is maintained by adhering strictly to standardized ReAttach protocols, ensuring consistency with international training standards and reducing therapist-specific bias.

Data Collection Procedures
Standardization

All assessments are administered in a consistent environment, either in-person or via secure online platforms. Each timepoint (baseline, post-treatment, 4-week, 12-week) follows a standardized administration order and duration. Participants

receive clear instructions and reassurance to minimize fatigue and response bias.

Data Recording

All outcome measures and observations are documented using structured forms. Data are entered into a secure digital database with participant ID codes to ensure confidentiality. Each session includes standardized notes recording symptom changes, functional progress, and autonomic regulation patterns.

Qualitative Observations

In addition to quantitative outcomes, therapists record qualitative observations regarding participant experiences, emotional regulation, engagement, and contextual facilitators or barriers. These records use structured observation templates and contribute to thematic qualitative analysis.

Quality Assurance

Data completeness is reviewed weekly. Missing data triggers standardized follow-up protocols. Accuracy is verified through random cross-checks and participant confirmation of key data points.

Privacy and Confidentiality

All procedures comply with GDPR and Dutch professional standards. Data are password-protected, encrypted, and accessible only to the research team. Participants may withdraw at any time without consequences.

Data retention period: All anonymized data will be securely stored for ten years following completion of the study, after which it will be permanently deleted.

Qualitative Data Analysis

In addition to quantitative analyses, qualitative data derived from session documentation and case reports will undergo **thematic analysis** following a structured five-step process:

Familiarization with data.

Coding and identification of meaningful units.

Generation of initial themes.

Review and refinement of themes.

Synthesis and reporting.

Analysis focuses on identifying mechanisms of change, treatment engagement patterns, contextual influences, and individual variation in functional outcomes. Each case will be examined individually before performing cross-case synthesis to identify recurrent themes.

Qualitative findings will complement quantitative data, offering richer insight into how autonomic regulation contributes to occupational participation and recovery. The combination of both data types will strengthen ecological validity and deepen understanding of clinical processes.

Data Analysis

Descriptive statistics will summarize quantitative outcomes across all time points. Clinically significant improvement will be defined as ≥3-point reduction in RPQ-13 or ≥2-point increase in COPM performance and satisfaction scores. Within-group effect sizes (Cohen's d) will be calculated. Correlations between symptom duration and treatment response will be explored.

Qualitative results will be presented alongside quantitative trajectories to provide a multidimensional understanding of therapeutic change.

Ethical Considerations

This study follows Dutch healthcare and GDPR regulations. Participation is voluntary, and participants may withdraw at any time. The protocol documents standard occupational therapy care and therefore poses minimal ethical risk.

Discussion

This protocol outlines an integrated, occupation-centered intervention addressing both neurophysiological and functional dimensions of persistent post-concussion syndrome. By embedding ReAttach therapy within occupational therapy practice, the study bridges the gap between autonomic regulation and meaningful activity participation.

The short, structured intervention (4–6 sessions) offers a practical, cost-effective approach for clinical settings with long waiting lists. While the small sample and lack of control group limit generalizability, the study provides valuable groundwork for future controlled trials.

Future Directions

Future studies will examine:

Randomized controlled trials comparing OT + ReAttach versus standard OT.

Mechanistic studies incorporating HRV and neuroimaging.

Long-term follow-up and relapse prevention analysis.

Online or hybrid adaptations to expand accessibility and cost-effectiveness.

Conclusion

This research protocol demonstrates an innovative integration of autonomic regulation and occupational participation within concussion rehabilitation. By systematically documenting clinical outcomes, the study contributes foundational evidence toward a multimodal, occupation-centered model of post-

concussion recovery.

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