

Paediatric Manipulation & Mobilisation

Evidence-based Practice
Position Statement

POLICY BRIEF

World Physiotherapy
Specialty Groups –
IFOMPT & IOPTP
2024

May 27, 2024

An International Federation of Orthopaedic Manipulative
Physical Therapists (IFOMPT) & International Organisation of
Physiotherapist in Paediatrics (IOPTP) joint position statement
policy brief.



**International Federation of Orthopaedic Manipulative Physical Therapist - IFOMPT & International Organisation of Physiotherapy in Paediatrics - IOPTP
Joint Policy Brief 2024**

World Physiotherapy Specialty Groups IFOMPT & IOPTP briefing and evidence-based practice position statements to inform our member organisation and others about key issues that affect the physiotherapy profession.

Acknowledgement

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Paediatric Spinal Manipulation and Mobilisation

PURPOSE:

To develop IFOMPT and IOPTP evidence-based position statements on the role (benefits and harms) of spinal manipulation and mobilisation techniques in the treatment of infants, children, and adolescents.

OBJECTIVE:

1. Summarise and critically analyse the research evidence and practice of spinal manipulation and mobilisation treatments for musculoskeletal and non-musculoskeletal conditions in infants, children, and adolescents within the international physiotherapy community.
2. Investigate the clinometric properties of outcomes measures used in the scoping review.
3. Determine the perspectives of paediatric and orthopaedic manual physiotherapy experts through a Delphi survey methodology.
4. Establish position statements to guide physiotherapists in safe and effective use of spinal manipulation and mobilisation for paediatric populations.

“Spinal manipulation and mobilisation should not be performed on infants. Neck and low back manipulation should not be performed on children.”



“Spinal manipulation and mobilisation may be appropriate to treat musculoskeletal conditions in adolescents.”



“Spinal manipulation and mobilisation are not appropriate and should not be performed to treat non-musculoskeletal paediatric conditions among infants, children, and adolescents”.

INTRODUCTION AND CONTEXT

Although spinal manipulation and mobilisation techniques may be effective at treating musculoskeletal impairments, mild to severe harms can occur when applied on infants (< 2 years), children (2 to 12 years), and adolescents (13 to < 18 years) so much so that they have drawn governmental attention and even controlling legislation.

- *Manipulation - “A passive, high velocity, low amplitude thrust applied to a joint complex within its anatomical limit with the intent to restore optimal motion, function, and to reduce pain”.*
- *Mobilisation - “A manual therapy technique comprising a continuum of skilled passive movements that are applied at varying speeds and amplitudes to joints, muscles or nerves with the intent to restore optimal motion, function, and to reduce pain”.*

Spinal manipulation and mobilisation have been utilised for various acute and chronic musculoskeletal and non-musculoskeletal paediatric conditions. While spinal mobilisation tends to include slow controlled passive movements of varied speeds and amplitudes, spinal manipulation engages high velocity and low amplitude thrusts within the anatomic limits of a spinal joint’s range of motion and is perceived to hold greater risk. The utilisation of spinal manipulation and mobilisation require the health professional to be a registered practitioner practicing under laws and regulations of their jurisdiction. These techniques and their skilful application have been under quality control of organisations such as IFOMPT ([education standards](#)) and IOPTP ([statement on practice](#)). The prevailing concern was that little is known about the benefits and harms of their application in infants, children, and adolescents.

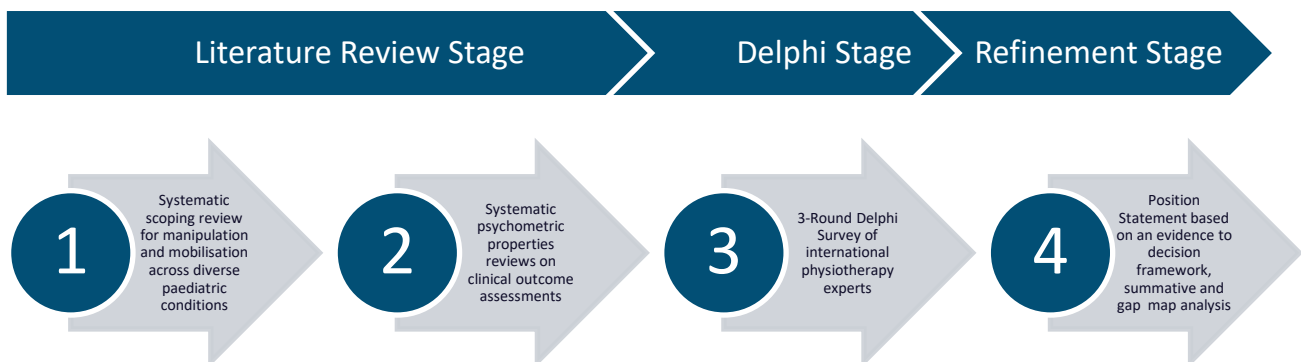
To this end an international taskforce of clinician-scientists was formed by specialty groups of World Physiotherapy – IFOMPT & IOPTP – with the aim to develop evidence-based practice position statements to guide physiotherapists clinical reasoning for the safe and effective use of spinal manipulation and mobilisation for paediatric populations (<18 years) with varied musculoskeletal or non-musculoskeletal conditions.

A three-stage guideline review process was used to develop seven position statements. This included a Literature Review Stage that consisted of a scoping review of the evidence to support the use of, and harms associated with spinal manipulation and

mobilisation in paediatric populations and two systematic reviews of the psychometric properties of the clinical outcome assessments used in the research found in the scoping review. Next, the Delphi Stage included a 3-Round Delphi survey of 26 international experts in paediatric physiotherapy and orthopaedic manipulative physiotherapy to understand the international context and perspective of physiotherapy experts. The final stage, referred to as the Refinement Stage, was based on the evidence to decision framework, summative analysis, position statement development, evidence gap map analyses, and multilayer review processes.

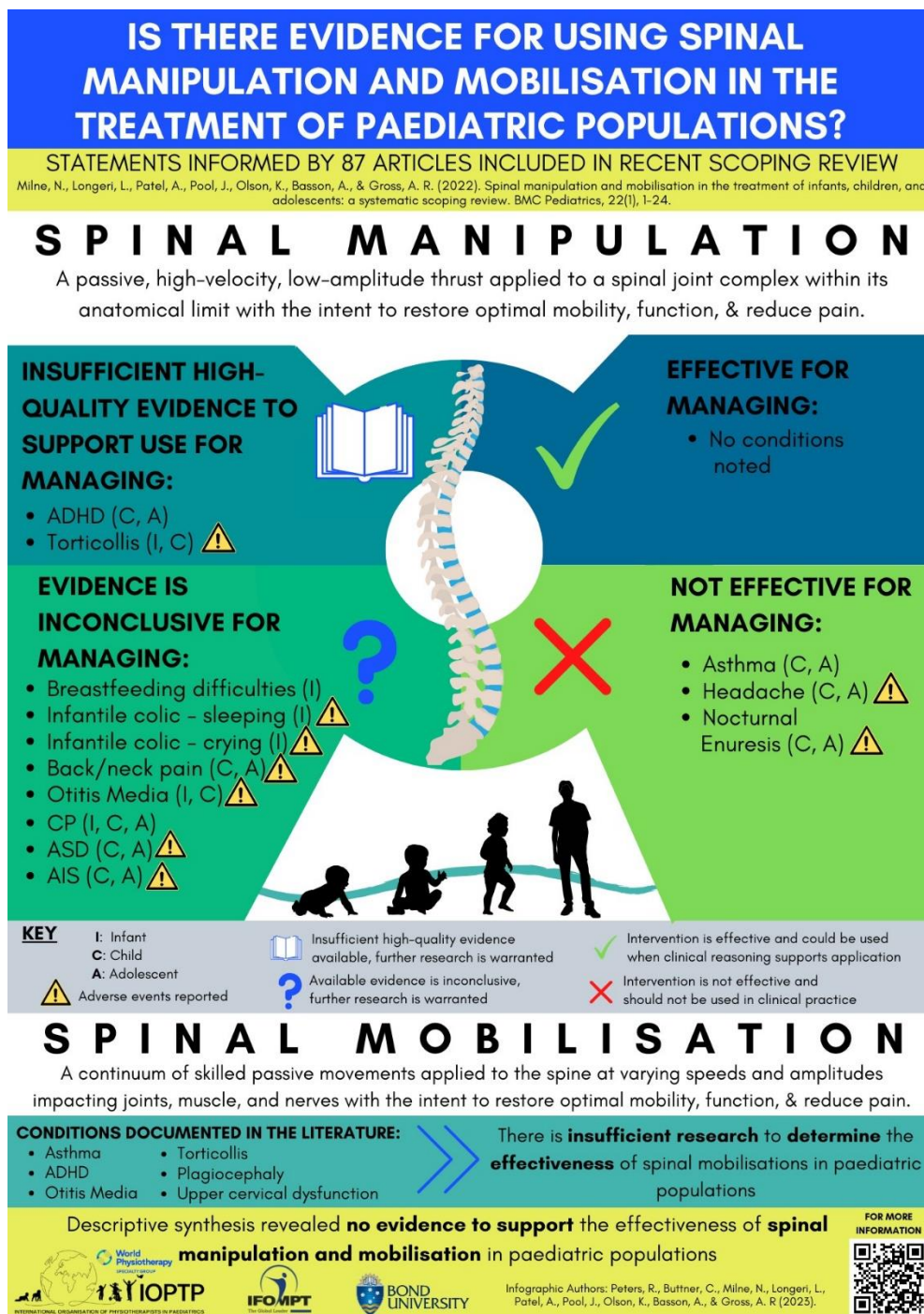
Protocols for each review were registered (scoping review <https://osf.io/zm8e6> and systematic review of psychometric properties <https://osf.io/rn4ux/>) and ethical approval (Delphi survey protocol by Texas Tech University Health Sciences Center Institutional Review Board (#L21-151) and Bond University #NM03322) was attained before project initiation. Methods were adapted from health research methods for guideline development [1] and the evidence to decision framework [2].

IDENTIFY THE RESEARCH BASE: A 3-STAGE GUIDELINE DEVELOPMENT PROCESS IN 4-STEPS.



1

Scoping review for use of spinal manipulation and mobilisation for paediatric populations – benefits, harms, policy/reports [3]

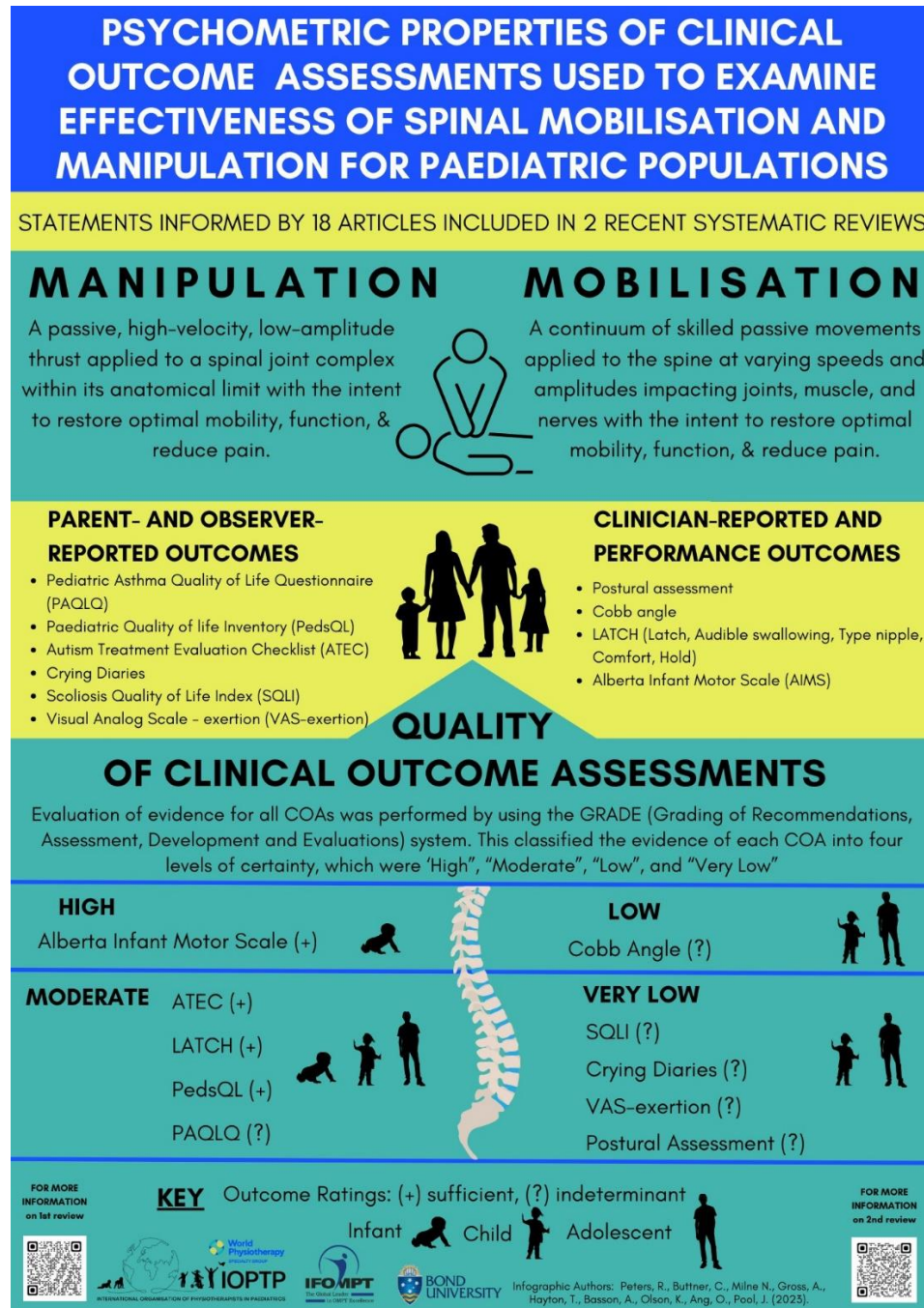


Milne, Nikki; Peters, Radd; Buttner, Claire; Longeri, Lauren; Patel, Anoki; Pool, Jan; et al. (2024). Paediatric Spinal Manipulation Taskforce_8. Infographic Scoping Review_FINAL. figshare. Media.

<https://doi.org/10.6084/m9.figshare.26038741>

2

Systematic review of the psychometric properties of clinical outcome assessments used to research spinal manipulation and mobilisation [4, 5]



Milne, Nikki; Peters, Radd; Buttner, Claire; Gross, Anita R.; Hayton, Tricia; Basson, Annalie; et al. (2024). Paediatric Spinal Manipulation Taskforce_9. Infographic COAs_FINAL. figshare. Media.

<https://doi.org/10.6084/m9.figshare.26038789>

PHYSIOTHERAPY EXPERT OPINION: SPINAL MANIPULATION AND MOBILISATION FOR PAEDIATRIC POPULATIONS

International Expert Survey Aim
A Delphi survey was conducted to build consensus between expert international PTs on spinal mobilisation & manipulation for infants, children, and adolescents.

Manipulative Therapy
Safety concerns and limited scientific evidence require expert opinion on the use of manipulation or mobilisation for spinal conditions in paediatric populations.

Infants
Experts agreed that manipulation or mobilisation is not recommended for infants across all conditions, impairments, and spinal levels.

Children
Experts agreed manipulation is not recommended for children to treat most conditions and spinal levels. Mobilisation may be recommended for pain / stiffness.

Adolescents
Experts agree manipulation and mobilisation may be recommended for adolescents to treat spinal region-specific joint hypomobility and pain.

Non-Musculoskeletal Conditions
Experts agree that manipulation and mobilisation is not recommended to treat most non-musculoskeletal conditions - asthma, congenital abnormalities, colic, breast feeding, cerebral palsy, etc.

**EXPERT
PHYSIOTHERAPY
OPINION**
on spinal manipulation
& mobilisation for
paediatric populations

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IFOMPT
International Federation of Occupational Manipulative Physiotherapists

**World
Physiotherapy
Organisation**
INTERNATIONAL ORGANIZATION OF PHYSIOTHERAPISTS IN PEDIATRICS

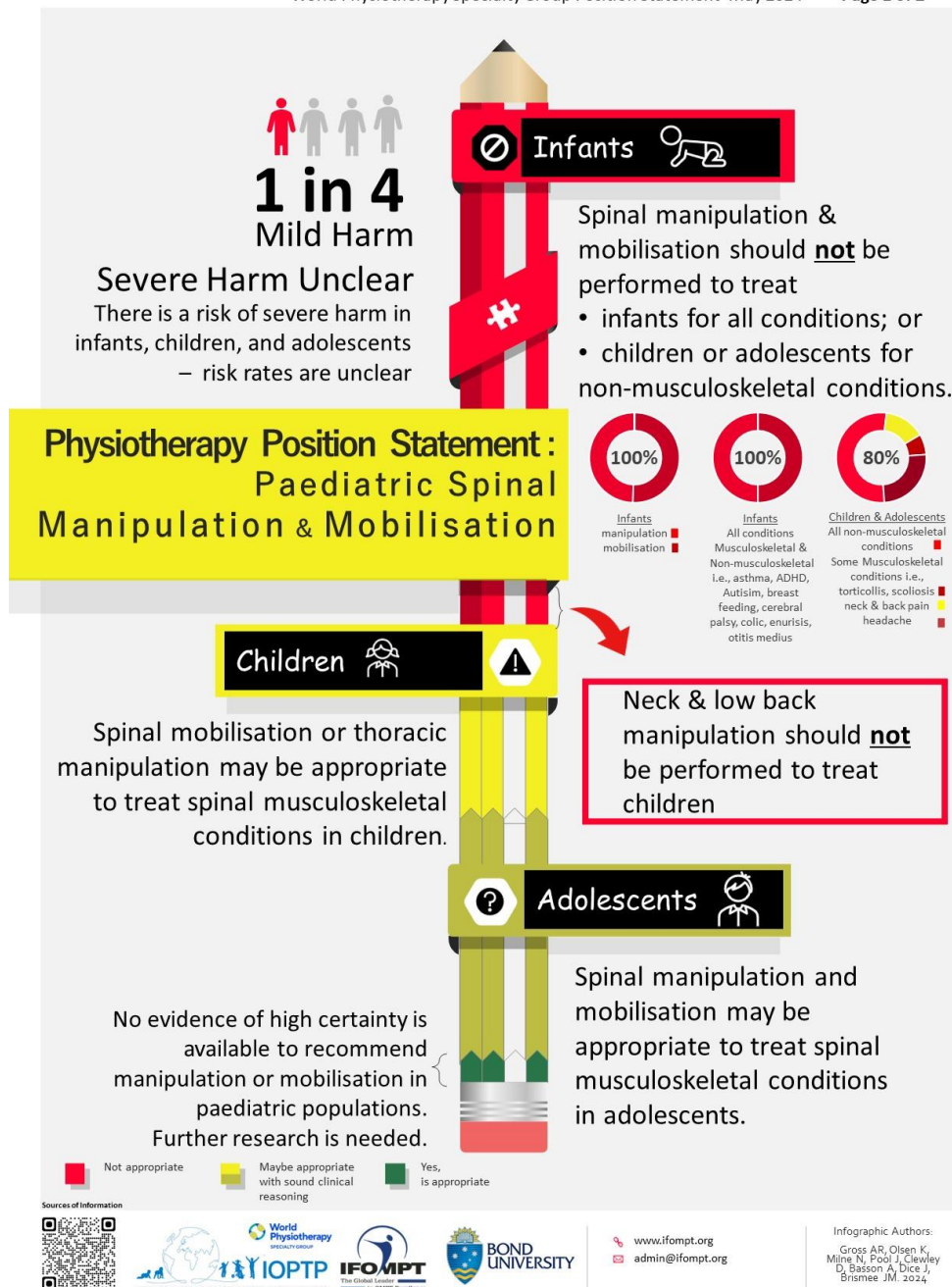
Infographic Authors:
Gross AR, Olson K, Dice J, Brismee JM, Froment FP,
Milne N, Pool J, Basson A, Clewley D. (2024).

Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Dice, Jenifer; Brismee, JM; Froment, FP; et al. (2024). Paediatric Spinal Manipulation Taskforce_10. Infographic_Delphi_FINAL. figshare. Media.

<https://doi.org/10.6084/m9.figshare.26038831>

4

Harms and position statements for use of spinal manipulation and mobilisation for paediatric populations [8]



Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation Taskforce_11. Education Infographic no HA_AG_Feb 22 2024_NM_Page 1_FINAL. figshare. Media. <https://doi.org/10.6084/m9.figshare.26038921>

Spinal Manipulation or Mobilisation for various CONDITIONS in paediatrics

Meter Reading:  Not Appropriate  May be Appropriate  Recommended

Non-Musculoskeletal Condition	Infant	Child	Adolescent
MANIPULATION or MOBILISATION			
Asthma	●	●	●
ADHD	●	●	●
Autism	●	●	●
Breastfeeding	●	●	●
Cerebral palsy	●	●	●
Infantile colic	●	●	●
Nocturnal enuresis	●	●	●
Otitis media	●	●	●
Musculoskeletal Condition	Infant	Child	Adolescent
MANIPULATION			
Scoliosis	●	●	●
Neck and back pain	●	●	●
Torticollis	●	●	NA
Headache	●	●	●
Upper Cervical Including KISS	●	NA	NA
Plagiocephaly	●	NA	NA
Musculoskeletal Condition	Infant	Child	Adolescent
MOBILISATION			
Scoliosis	●	●	●
Neck and back pain	●	●	●
Torticollis	●	●	NA
Headache	●	●	●
Upper Cervical Including KISS	●	NA	NA
Plagiocephaly	●	NA	NA



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Infographic Authors:
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Milne N, Pool J, Clewley
D, Basson A, Dice J,
Grismee JM. 2024

Key: ADHD = Attention Deficit Hyperactivity Disorder; KISS = Kinetic Imbalance due to Suboccipital Stress;
NA = not applicable.

Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation Taskforce_12. Education Infographic no HA_AG_Feb 22 2024_NM_Page 2_FINAL. figshare. Media. <https://doi.org/10.6084/m9.figshare.26038942>

EVIDENCE-BASED PRACTICE POSITION STATEMENTS

Directive	EVIDENCE-BASED PRACTICE POSITION STATEMENTS [8]
NOT RECOMMENDED (do not perform)	<ul style="list-style-type: none"> • Spinal manipulation and mobilisation should not be performed on infants. • Cervical and lumbar spine manipulation should not be performed on children. • Spinal manipulation and mobilisation are not appropriate and should not be performed to treat non-musculoskeletal conditions among infants, children and adolescents including asthma, attention deficit hyperactivity disorder, autism spectrum disorder, breastfeeding difficulties, cerebral palsy, infantile colic, nocturnal enuresis, and otitis media.
May be APPROPRIATE with sound clinical reasoning	<ul style="list-style-type: none"> • Spinal mobilisation may be appropriate to treat children with musculoskeletal conditions including mobility impairments associated with neck-back pain, and neck pain with headache. • Thoracic spine manipulation may be appropriate to treat children with musculoskeletal conditions including impairments associated with neck-back pain. • Spinal manipulation and mobilisation may be appropriate to treat adolescents with musculoskeletal conditions including spinal mobility impairments associated with neck-back pain and neck pain with headache.
RECOMMEND	<ul style="list-style-type: none"> • No high certainty evidence is available to recommend spinal mobilisation or manipulation for paediatric populations.

EVIDENCE IMPACT

Underscoring World Physiotherapy Specialty groups IFOMPT and IOPTP's commitment to evidence-based practice, the Policy Brief references seven position statements as an initiative to advance the knowledge and clinical reasoning for physiotherapists safe and effective use of spinal manipulation and mobilisation to treat musculoskeletal and non-musculoskeletal conditions for paediatric populations. These position statements yield tangible benefits, safeguards, and are firmly grounded in research evidence.

KNOWLEDGE DISSEMINATION

Journal of Manual and Manipulative Therapy has issued a Special Edition on paediatric manual therapy. Further research is already underway: 1. A decisional needs assessment of patients seeking manual therapy (<https://osf.io/qdbkn>); 2. Systematic review on headache, neck and back pain (<https://osf.io/27dhy>). Knowledge has been disseminated through conference proceedings, seven publications (3-9), media releases, editorial (9), 4-Infographics, and 5-Instagram evidence-based quotes (see Appendix 1) with open access from World Physiotherapy Specialty Groups: IFOMPT and IOPTP.

CONCLUSION

Seven evidence-based practice position statements are advised from a systematic guideline process identifying benefits, potential harms, and safety concerns.

POLICY MAKERS, PAYERS, CLINICIANS, AND EDUCATORS ... The brief provides a platform for stakeholders to sort through and interact with the evidence in meaningful categories. Caution in the advisement, reimbursement, and application of spinal manipulation and mobilisation should be taken when treating paediatric conditions and impairments beyond what is recommended in the position statements.

CLIENT AND CARERS ... We structured the evidence-based practice position statements around musculoskeletal conditions and non-musculoskeletal conditions that have the potential to assist clients/carers together with their health care provider to take into account the evidence-based information about spinal manipulation and mobilisation to make their health care decision. The providers' knowledge, clinical reasoning, and experience, and the client/carer's values and preferences will help shape this decision.

REFERENCES

1. Moher D, Schulz KF, Simera I, Altman DG: Guidance for developers of health research reporting guidelines. *PLoS Medicine* 2010, 7(2):e1000217.
2. Alonso-Coello P, Schünemann HJ, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, Treweek S, Mustafa RA, Rada G, Rosenbaum S: GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. *British Medical Journal* 2016, 353.
3. Milne N, Longeri L, Patel A, Pool J, Olson K, Basson A, Gross AR: Spinal manipulation and mobilisation in the treatment of infants, children, and adolescents: a systematic scoping review. *BMC Pediatrics* 2022, 22(1):721.
4. Hayton T, Gross A, Basson A, Olson K, Ang O, Milne N, Pool J: Psychometric measurement properties of patient-reported and observer-reported outcome measures for spinal mobilisations and manipulation on paediatric subjects with diverse medical conditions: A systematic review. *Journal of Manual and Manipulative Therapy* 2023:1-21.
5. Hayton T, Gross A, Basson A, Olson K, Ang O, Milne N, Pool J: Psychometric properties of clinician-reported and performance-based outcomes cited in a scoping review on spinal manipulation and mobilization for pediatric populations with diverse medical conditions: a systematic review. *Journal of Manual and Manipulative Therapy* 2023:1-29.
6. Dice JL, Brismee JM, Froment FP, Henricksen J, Sherwin R, Pool J, Milne N, Clewley D, Basson A, Olson K, Gross AR: Spinal manipulation and mobilisation among infants, children, and adolescents: An international delphi survey of expert physiotherapists. *Journal of Manual and Manipulative Therapy* 2024, Mar 15(1):1-11.
7. Dice JL, Brismée JM, Froment FP, Henricksen J, Sherwin R, Pool J, Milne N, Clewley D, A. B, Olson KA, Gross AR: Perceived factors and barriers affecting physiotherapists' edcision to use spinal manipulation and mobilisation among infants, children, and adolescents: An international survey. *Journal of Manual and Manipulative Therapy* 2024, Jun 9: 1-11. DOI: [10.1080/10669817.2024.2363033](https://doi.org/10.1080/10669817.2024.2363033).
8. Gross AR, Olson K, Pool J, Basson A, Clewley D, Dice JL, Milne N: Spinal manipulation and mobilisation in paediatrics – An international evidence-based position statement for physiotherapists. *Journal of Manual and Manipulative Therapy* 2024, Jun 9:1-23, DOI: [10.1080/10669817.2024.2332026](https://doi.org/10.1080/10669817.2024.2332026).
9. Olson K, Clewley D, Milne N, Brismee JM, Pool J, Basson A, Gross AR: Spinal Manipulation and Mobilisation for Paediatric Conditions: Time to Stop the Madness. *Journal of Manual and Manipulative Therapy* 2024, Jun 9:1-4.

APPENDIX 1: Evidence-based Instagram Quotes – Spinal Manipulation and Mobilisation in infants, children, adolescents, and paediatric conditions.

PAEDIATRIC CONDITIONS:



Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation Taskforce_7. Instagram_Non MSK_paediatric conditions_FINAL. figshare. Media.

<https://doi.org/10.6084/m9.figshare.26038675>

INFANTS:



Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation Taskforce_1.Instagram_infants_FINAL.png. figshare. Media. <https://doi.org/10.6084/m9.figshare.26038363>

CHILD:



Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation Taskforce_Instagram_children_FINAL. figshare. Media. <https://doi.org/10.6084/m9.figshare.26038585>

ADOLESCENTS:



Milne, Nikki; Gross, Anita R.; Olson, Kenneth; Pool, Jan; Basson, Annalie; Clewley, Derek; et al. (2024). Paediatric Spinal Manipulation_3.Instagram_adolescents_1_FINAL. figshare. Media. <https://doi.org/10.6084/m9.figshare.26038621>



**“Spinal manipulation
& mobilisation**

may be appropriate to treat
adolescents
with musculoskeletal conditions
including spinal mobility
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neck pain with headache ”

Milne, Nikki; Gross, Anita R.; Pool, Jan; Basson, Annalie; Clewley, Derek; Dice, Jenifer; et al. (2024). Paediatric Spinal Manipulation Taskforce_4.Instagram_adolescents 2_FINAL. figshare. Media.
<https://doi.org/10.6084/m9.figshare.26038651>