



WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

Delphi survey Round 1

Introduction

Thank you for participating in this Delphi survey for the consensus on children's clinical footwear interventions.
Please note this is Round 1 of the survey and will be the lengthiest in respect to your time.

This first round aims to:

1) Gather information and seek consensus for the general definition of clinical footwear interventions in children.
These will be: The specific terms to be used, the categorisation of the footwear, and the proposed clinical role of these footwear.

2) To gather specific information on "off the shelf"* and modular** clinical footwear interventions that would be considered to offer a stability effect on children with mobility impairment. This would be in terms of design characteristics and suggested clinical protocols (guidelines) for the prescription of stability footwear as an assistive aid.

* Footwear taken from stock or supplies and not individually designed.

** Standard range of dimensional adaptations (maximum 3) to stock upper.

Your responses from this round will be analysed and collated into statements. These will be returned to you along with the anonymised responses of the other panellists, and you will be asked to rank your agreement or non-agreement with them. You can review the previous information you provided, and considering the information provided by the other panellists, maintain or change your opinion.

Please note you are free to withdraw from the study at any time.

For withdrawal from the study or any further questions, please contact:

Matthew Hill

Centre for Biomechanics and Rehabilitation Technologies, Science Centre,
Staffordshire University, Leek Road, Stoke on Trent, ST4 2DF, U.K,

Ph +44 1782 294122

E-Mail: Matthew.Hill@research.staffs.ac.uk

1)

Name *



OVERVIEW OF SURVEY

There are three sections in round 1 of this survey which will be available in a separate link.

The first section is aimed at determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of your ideas and opinions on design characteristics of "off the shelf" and modular clinical footwear that offers stability to children with mobility impairment.

The third section will consist of your ideas and opinions on clinical protocols and outcomes for the provision of "off the shelf" and modular footwear that offers stability for children with mobility impairment.

Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.

Section 1 Round 1



Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

Definition together with standard terminology is essential for any intervention to allow a consistent understanding of who will benefit, the value it will provide, what is and isn't included, how it will work and how to measure its success.

The work in this section has been informed from the results of our recently published scoping review, <https://rdcu.be/b1tKM>

We derived general terminology definitions and groupings of footwear that had been used from a therapeutic perspective from the collective body of research considering children's footwear.

We will ask you to rate your agreement with these proposed terms, definitions and groupings. These will be in the form of a Likert scale where you will rank your level of agreement on a scale of 1-7 ranging from Strongly Disagree (1) to Strongly Agree (7).

We will provide you with the opportunity to offer your opinion to modify these proposed terms, definitions and groupings. All answers will be anonymised and will not be identifiable as your responses.

What can you base your answers on?

The validity of the data obtained relies on your answers, being your opinion. This may be based on research or your own clinical or manufacturing experience.

How do you provide detail to your answer?

It is recommended that your answers be clear and unambiguous. You should provide enough detail to qualify what you are basing your opinion on. General comments are therefore not recommended. On some answers, you may wish to provide more information.

i.e., The following statement provides insufficient information
"Stability footwear would improve children's gait ."

A qualified statement may read:

"Stability footwear would potentially increase children's walking velocity, stride length and reduce mediolateral (side to side) displacement of the centre of mass "

The answers and rationale you provide may influence the opinion of other panellists. i.e., a panellist may change their opinion dependent on the strength of your response.

* Required Filed

2)

From the collective body of research, various terms have been used in relation to clinical footwear interventions in childhood. Statement 1: The scoping review recommended the term "Children's Therapeutic Footwear" as the standard terminology to be used for clinical footwear interventions for children with mobility impairment.

Please rank your agreement with the term children's therapeutic footwear as a standard term for this purpose. *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3)

Please use this area to provide us with any further opinion on this terminology. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

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4

Statement 2: The term therapeutic footwear was defined in the scoping review as: “footwear that is designed specifically with the purpose to support or alleviate mobility impairment in childhood.”

Please rank your agreement with this Definition. *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

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6)

Statement 3: From the scoping review footwear for clinical interventions in childhood was categorised into groupings dependent on their intended therapeutic role.

Please rank your agreement for this approach to categorise clinical footwear interventions.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7)

Please use this area to provide us with any further opinion on this method of categorisation. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

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8)

Statement 4: From the scoping review, the following definition was given for the corrective footwear grouping:

Corrective footwear is children's therapeutic footwear that is designed to bring about the correction of congenital skeletal lower limb alignment.

Please rank your agreement with this definition:*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

10)

Statement 5: From the scoping review, the following definition was given for the accommodative footwear grouping:

Accommodative footwear is children's therapeutic footwear that is designed (modular or bespoke) to reduce compression, and shearing stresses on children's foot deformities through dimensional matching of footwear upper, insole, and sole to that of the child's foot.

Please rank your agreement with this definition: *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

12)

Statement 6: From the scoping review, the following definition was given for the functional footwear grouping:

Functional footwear is children's therapeutic footwear that is designed to improve dynamic gait parameters of children with mobility impairment, reducing pathological movements and facilitating typical childhood walking patterns.

Please rank your agreement with this definition: *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

14)

Statement 7: From the scoping review functional therapeutic footwear was divided into subgroupings which are categorised dependent on the design and functional role.

Please rank your agreement with this method of categorisation. *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15)

Please use this area to provide us with any further opinion on this method of categorisation. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

16)

Statement 8: From the scoping review the following definition was given for the stability footwear subgrouping

Stability functional therapeutic footwear is a range of footwear that is designed to limit extreme movements of the lower limb to maintain a controlled displacement of the centre of force during gait.

Please rank your agreement with this definition: *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

18)

Statement 9: From the scoping review, the following definition was given to lift footwear subgrouping:

Lift functional therapeutic footwear is a range of footwear designed with a unilateral modular outer or midsole addition to conservatively achieve postural and functional symmetry in individuals with limb length inequality.

Please rank your agreement with this definition: *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

20)

Statement 10: From the scoping review the following definition was given for rounded bottom (rocker sole)

Rounded bottom (rocker sole) is a range of functional therapeutic footwear with a forefoot rocker design to assist the sagittal plane progression of the lower limb.

Please rank your agreement with this definition.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *

22)

Statement 11: From the scoping review, the following definition was given for instability footwear:

Instability therapeutic functional footwear consists of a sole designed to promote imbalance to train the individuals motor coordination.

Please rank your agreement with this definition.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Statement 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23)

Please use this area to provide us with any further opinion on this definition. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? *



END OF SECTION 1 ROUND 1

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.



ROUND 2 (S1) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

Delphi survey Round 2

Introduction

Thank you for participation in Round 1 of this Delphi survey for the consensus on children's clinical footwear interventions.

Please note this is Round 2 of the survey which will provide you with the collective responses from Round 1 of the expert panel. The panel consisted of 18 participants (orthotists, podiatrists and physiotherapists) with clinical expertise in footwear provision including research, commercial distribution as well as clinical practitioners. The panel is international comprising of panellists from the UK, Australia and the U.S.A.

The feedback from responses will be presented as the median and distribution of level of agreement, as well as a summary of the reasoning for panellists' answers.

This second round aims to:

1) Seek consensus for the general definition of footwear used as a clinical intervention for children.

These will be: The specific terms to be used, the categorisation of the footwear, and the proposed clinical role of these footwear.

2) To gain consensus on "off the shelf"[†] clinical footwear interventions that would be considered to offer a stability effect on children with mobility impairment. This would be in terms of design characteristics and suggested clinical protocols (guidelines) for the prescription of stability footwear as an assistive aid.

[†]Footwear taken from stock or supplies and not individually designed.

This questionnaire is completed differently to the first round, and the instructions within the form will guide you through this process. Please read the instructions carefully and complete the Delphi questionnaire as fully as you can.

You will receive the original statements from Round 1 alongside modified statements that have been informed by yours and other panellists' responses.

You will be asked to give your preferential option or your level of agreement with them. You can review the previous information you provided (in the document emailed to you), and

considering the information provided by the other panellists, maintain or change your opinion.

Please note you are free to withdraw from the study at any time.

For withdrawal from the study or any further questions, please contact:

Matthew Hill

Centre for Biomechanics and Rehabilitation Technologies, Science Centre,

Staffordshire University, Leek Road, Stoke on Trent, ST4 2DF, U.K,

Ph +44 1782 294122

Email: Matthew.Hill@research.staffs.ac.uk)

* Required Filed

Name *



OVERVIEW OF SURVEY

There are three sections in round 2 of this survey which will be available in three separate links.

The first section will consist of yours and the panellists' collective opinions on determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of yours and the panellists' collective opinions on design characteristics of "off the shelf" clinical footwear that offers stability to children with mobility impairment.

The third section will consist of yours and the panellists' collective opinions on clinical protocols and outcomes for the provision of "off the shelf" footwear that offers stability for children with mobility impairment.

Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.

Section 1

Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

The original statements concerning terminology, definitions and groupings of footwear that had been used from a therapeutic perspective for children suggested by the scoping review are listed alongside modified statements informed from the opinions gained from yourself and the other panellists in round 1. You will be asked to give your preferential option or your level of agreement or non-agreement with them (Strongly Disagree to Strongly Agree).

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, You may maintain your position with the original statement or change your opinion and align yourself with the new statement

We will provide you with the opportunity to offer your reasoning for your stance or to suggest any further amendments to the statements (You may also leave these areas blank in this round). All answers will be anonymised and will not be identifiable as your responses.

* Required Filed

2)

From Round 1 panellists were presented with Statement 1:
"The scoping review recommended the term Children's Therapeutic Footwear as the standard terminology to be used for footwear used as a clinical intervention for children with mobility impairment."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

From panellist feedback there was support for this term in preference to orthopaedic footwear as some felt this term had negative social connotations and could be associated with over-medicalisation. Other feedback indicated that therapeutic may be ambiguous inferring that the footwear healed the disease. Some panellists suggested alternate terms that matched International Organisation for Standardisation (ISO) terminology, with Orthopaedic footwear matching ISO 9999:2016 and more recently Orthotic footwear matching ISO 21064:2017. It was also discussed that ISO terminology aligned footwear with orthotic therapies.

Please choose your preferred standard term for footwear that is used as a clinical intervention for children with mobility impairment. *

<input type="checkbox"/>	Therapeutic Footwear (Term from Round 1)
<input type="checkbox"/>	Orthopaedic Footwear
<input type="checkbox"/>	Orthotic Footwear
<input type="checkbox"/>	Prescriptive Footwear
<input type="checkbox"/>	Other

3)

You may use this optional area if you wish to provide any further information for your response.

4)

From Round 1 panellists were presented with Statement 2 which offered the following definition for footwear used as a clinical intervention for children:

“footwear that is designed specifically with the purpose to support or alleviate mobility impairment in childhood.”

The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses between "neutral" to "agree".

From panellist feedback suggestions were made to improve the definition. Alleviate was seen as an ambiguous term that may be misinterpreted as curing the problem. The terminology should include that standard retail footwear may be adapted to offer a therapeutic role as well as therapeutic footwear that is specifically designed. The definition should also recognise the role footwear may play to accommodate or prevent foot deformities and the role it can offer to assist standing as well as mobility. Some panellist also requested the definition Follow ISO or World Health Organisation (WHO) terminology and be more biomechanically specific.

From panellist feedback, the following modified definitions for footwear used as a clinical intervention in children were derived.

Statement 2a: "Footwear that is designed or adapted specifically to protect, support, align, prevent, or correct foot deformity, or to assist mobility and standing in children."

Please choose your preferred definition. *

<input type="checkbox"/>	Statement 2 (Original statement)
<input type="checkbox"/>	Statement 2a
<input type="checkbox"/>	Other

5)

You may use this optional area if you wish to provide any further information for your response.

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6)

From Round 1 panellists were presented with Statement 3:

"footwear for clinical interventions in childhood should be categorised into groupings dependent on their intended therapeutic role."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback suggested that this was a suitable method of grouping clinical footwear interventions as it recognised the different characteristics and requirements for footwear prescriptions in a similar manner to orthoses. Suggestions to improve this method of grouping footwear included ensuring the therapeutic role had measurable outcomes. The method should recognise that footwear may offer more than one therapeutic role e.g. "accommodative and stability", therefore the method to classify should address that they are not separate footwear groupings, but potential therapeutic components of the footwear and a coding method could be employed to classify multiple therapeutic components of the footwear.

From panellist feedback, the following modified statement has been offered as an alternate method to group clinical footwear interventions for children.

Statement 3a: "Footwear used as a clinical intervention in childhood should be classified via the intended therapeutic outcomes of its components."

Please choose your preferred method for classifying footwear as a clinical intervention for children. *

<input type="checkbox"/>	Statement 3 (Original statement)
<input type="checkbox"/>	Statement 3a
<input type="checkbox"/>	Other

7)

You may use this optional area if you wish to provide any further information for your response.

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8)

From Round 1, panellists were presented with Statement 4 as a definition for the corrective footwear grouping:

"Corrective footwear is children's therapeutic footwear that is designed to bring about the correction of congenital skeletal lower limb alignment."

The median level of agreement amongst the panellists was "Neutral" with the majority of responses between "somewhat disagree" to "agree".

Panellist feedback suggested modifications to improve the definition. It was noted that footwear could not act as a curative intervention on its own and should be used alongside other corrective interventions (serial casting, surgery). Correction of lower limb alignment is misleading as footwear can only affect the foot and ankle. The definition should also include acquired deformity.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 4a: "Corrective footwear is children's therapeutic footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children."

Please choose your preferred definition.*

<input type="checkbox"/>	Statement 4 (Original statement)
<input type="checkbox"/>	Statement 4a
<input type="checkbox"/>	Other

9)

You may use this optional area if you wish to provide any further information for your response.

10)

From Round 1, panellists were presented with Statement 5 as a definition for the accommodative footwear grouping:

"Accommodative footwear is children's therapeutic footwear that is designed (off the shelf or bespoke) to reduce compression, and shearing stresses on children's foot deformities through dimensional matching of footwear upper, insole, and sole to that of the child's foot."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback suggested modifications to the definition. This included the role accommodative footwear may play in preventing deterioration of the child's foot deformity and reducing excessive details of the footwear design.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 5a: "Accommodative footwear is children's therapeutic footwear that is designed to prevent deterioration of children's foot deformities through the dimensional matching of the footwear to the child's foot."

Please choose your preferred definition.*

<input type="checkbox"/>	Statement 5 (Original statement)
<input type="checkbox"/>	Statement 5a
<input type="checkbox"/>	Other

11)

You may use this optional area if you wish to provide any further information for your response.

12)

From Round 1, panellists were presented with Statement 6 as a definition for the functional therapeutic footwear grouping:

"Functional footwear is children's therapeutic footwear that is designed to improve dynamic gait parameters of children with mobility impairment, reducing pathological movements and facilitating typical childhood walking patterns."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "neutral" to "agree".

Panellist feedback suggested that the definition represented the direct dynamic role footwear may play in supporting walking in children with mobility impairment. Suggested modifications to improve the definition included avoiding ambiguous terms such as pathological movement and typical patterns. Recognise the role functional footwear may play in assisting standing as well as mobility. Two panellists suggested disagreement with the term functional as all therapeutic footwear groupings had a function, however, no alternate term was suggested to represent this grouping.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 6a: "Functional footwear is children's therapeutic footwear that is designed or adapted to directly assist mobility and standing in children."

Please choose your preferred definition.*

<input type="checkbox"/>	Statement 6 (Original statement)
<input type="checkbox"/>	Statement 6a
<input type="checkbox"/>	Other

13)

You may use this optional area if you wish to provide any further information for your response.

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14)

From Round 1, panellists were presented with Statement 7 as a method to categorize functional footwear into subgroupings:

"Functional therapeutic footwear was divided into subgroupings which are categorised dependent on the design and functional role."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback was similar to the previous statement on methods of grouping footwear, in that footwear may offer more than one therapeutic role. The classification should recognise that they are not separate footwear groupings but therapeutic components of the footwear.

From panellist feedback, the following modified statement has been offered as an alternate method to subgroup functional therapeutic footwear for children.

Statement 7a "Functional therapeutic footwear should be classified via its design and the intended therapeutic outcomes of its components."

Please choose your preferred method for classifying functional therapeutic footwear for children.*

<input type="checkbox"/>	Statement 7 (Original statement)
<input type="checkbox"/>	Statement 7a
<input type="checkbox"/>	Other

15)

You may use this optional area to provide us with any further information for your response.

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16)

From Round 1, panellists were presented with Statement 8 as a definition for the stability footwear subgrouping.

"Stability functional therapeutic footwear is a range of footwear that is designed to limit extreme movements of the lower limb to maintain a controlled displacement of the centre of force during gait."

The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses between "somewhat disagree" to "agree".

Feedback from the panellists suggested that the definition attempted to represent the effects of this footwear. Suggestions for improvement of the definition included avoiding ambiguous terms such as extreme movements, and recognising that this footwear would only effectively control forces at the foot and ankle but not the knee. The definition should recognise the potential proprioceptive effect of the footwear and the additional ability to assist standing in children.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 8a: "Stability therapeutic footwear is a range of footwear that is designed to assist mobility and standing in children by enhancing proprioception and influencing movements of the foot and ankle."

In the section below, please choose your preferred definition.*

<input type="checkbox"/>	Statement 8 (Original statement)
<input type="checkbox"/>	Statement 8a
<input type="checkbox"/>	Other

17)

You may use this optional area if you wish to provide any further information for your response.

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18)

Therapeutic Footwear

Functional

Accomodative

Corrective

Stability

Adapted sole

From the feedback of panellists, there was a collective suggestion that a number of the groupings offered in the first round, (lift, rounded bottom, instability) should fall under another Functional Footwear subgrouping termed Adapted Sole.

Panellists suggested this represented footwear either therapeutic or standard retail footwear that had a custom adaption to the sole which would facilitate gait or standing posture in children with mobility impairment.

Panellist feedback also suggested alternative terms for adapted soles that would fall under this subgrouping, raise instead of lift and rocker sole instead of rounded bottom.

The following term and definition were derived from panellist feedback.

Term: Adapted Sole

Definition: "A range of customised sole adaptations to standard retail or children's therapeutic footwear that would assist mobility or standing in children."

In the section below please rank your agreement with the term and definition: *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Term Adapted sole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definition of Adapted sole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19)

You may use this optional area if you wish to provide any further information for your response.



END OF SECTION 1 ROUND 2

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 2 attached to the Delphi survey email.



ROUND 3 (S1) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.

* Required Filed

Name *

To recognise the valued work you have provided on this project the research team would like to acknowledge you as a panel member on any report or publication generated from the completed work. Please indicate your consent to your name and profession being released as an expert panel member below.. *	
<input type="checkbox"/>	I consent to my name and profession being included in the acknowledgment section of any publication generated from the completed work
<input type="checkbox"/>	I do not consent to my name being acknowledged in this work



OVERVIEW OF SURVEY

There are three sections in round 3 of this survey which will be available in three separate links.

The first section will consist of yours and the panellists' collective choices and opinions on determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of yours and the panellists' collective choices and opinions on design characteristics of "off the shelf" clinical footwear that offers stability to children with mobility impairment.

The third section will consist of yours and the panellists' choices and collective opinions on clinical protocols and outcomes for the provision of "off the shelf" footwear that offers stability for children with mobility impairment.

Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and most importantly submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.

Section 1

Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

You will be presented with the collective preference (Median, relative frequency of response) and opinions of the panellists to the modified and original statements from round 1 and 2 of the survey concerning terminology, definitions and groupings of footwear that had been used from a clinical perspective for children. You will again be asked to give your preferential option or your level of agreement or non-agreement with them ("Strongly Disagree" to "Strongly Agree").

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, you may maintain your option or level of agreement with your chosen statement or change your opinion.

Full consensus for a statement is reached when a statement gains $\geq 75\%$ of panellists with a level of agreement of "agree" or above, or $\geq 75\%$ of panellists preferred option.

If you choose a level of agreement below "agree" we would ask that you provide us with the reason for your choice in the optional open-ended section provided.

* Required Filed

3)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for standard terminology to be used for footwear used as a clinical intervention for children with a mobility impairment :

The relative frequency of response is detailed below:

Term "Therapeutic Footwear" 59%

Term "Orthotic Footwear" 23%

Term "Prescriptive Footwear" 12%

Term "Orthopaedic Footwear" 6%

From panellist feedback:

The reasoning for choosing "Therapeutic Footwear" was that it was felt that orthotic and orthopaedic footwear would appear to be limited to the body structure aspect of the WHO ICF-CY as it still implies a "straightening" approach to care and did not embrace a holistic approach of health care delivery, as also outlined in the WHO ICF-CY, such as those involved with Quality of Life, activity and participation. They also felt that orthotic "straightening" could be misleading for some treatment goals such as accommodative footwear. It was also pointed out Prescriptive Footwear may not be applicable if using unmodified "off the shelf footwear". It was felt that Therapeutic Footwear was consistent with the language used in the research literature. The importance of embracing consistent international terminology as outlined by the ISO was proposed, however, even here there has been inconsistency with both the terms Orthopaedic footwear (ISO 9999:2016) and Orthotic footwear ISO (21064:2017) being used.

The reasoning for choosing "Orthotic footwear" was that it embraced reputable terminology from ISO without the perceived negative social connotations of orthopaedic footwear.

The reasoning for choosing "Prescriptive Footwear" evoked setting out specific parameters of footwear treatment that were potentially measurable.

No specific reasoning was given for choosing "Orthopaedic footwear"

One panellist suggested overall term could be interchangeable dependent on clinical preference as long as there was an agreed definition and understanding of how footwear could be applied and used for the treatment of mobility impairment in childhood.

Considering the collective panellist feedback please choose your preferred standard term for footwear that is used as a clinical intervention for children with mobility impairment.

<input type="checkbox"/>	Therapeutic Footwear (Term from Round 1)
<input type="checkbox"/>	Orthopaedic Footwear
<input type="checkbox"/>	Orthotic Footwear
<input type="checkbox"/>	Prescriptive Footwear

4)

You may use this optional area if you wish to provide any further information for your response.

5)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel which offered a definition for footwear used as a clinical intervention for children:

The relative frequency of response is detailed below:

Statement 2a "Footwear that is designed or adapted specifically to protect, support, align, prevent, or correct foot deformity, or to assist mobility and standing in children." (82%)

Statement 2 "footwear that is designed specifically with the purpose to support or alleviate mobility impairment in childhood." (12%)

Other (6%)

A Consensus was reached to Statement 2a

Panellist feedback from those who chose "Other"

One panellist objected to the aligning and corrective aspect in the definition due to limited evidence base for this and suggested the following definition: "Footwear that is designed or adapted specifically to protect, support or assist mobility and standing in children".

One preferred a definition that encompassed ISO and WHO terminology and suggested the following definition: "Footwear intended to address the effect of a neuromusculoskeletal impairment(s). These can encompass the ankle joint. They can be custom made or prefabricated"

6)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the process of categorising clinical footwear interventions for children.

The relative frequency of response is detailed below:

Statement 3a: "Footwear used as a clinical intervention in childhood should be classified via the intended therapeutic outcomes of its components." (70%)

Statement 3 "footwear for clinical interventions in childhood should be categorised into groupings dependent on their intended therapeutic role." (18%)

Other (12%)

From panellist feedback, there was agreement throughout the panel that it was important that the method of classification/grouping of the footwear relates to the intended clinical role or outcome, However, consensus failed to be reached due to the terminology used within the statement.

Panellists who did not choose therapeutic footwear as a preferred term objected to the reference to therapeutic in the statement, others wanted WHO terminology to be included within the definition.

Slight modification to the statement has been made to this definition to address panellist feedback and gain consensus within the panel, please rank your agreement with the following statement *

"Footwear used as a clinical intervention in childhood should be classified by the intended outcomes of its components."

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
"Footwear used as a clinical intervention in childhood should be classified by the intended outcomes of its components."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7)

If your level of agreement was "somewhat agree" or lower please use this optional area to provide us with your reasoning.

8)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition of Corrective footwear.

The relative frequency of response is detailed below:

Statement 4a: "Corrective footwear is children's therapeutic footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children."* (82%)

Other (18%)

Statment 4 "Corrective footwear is children's therapeutic footwear that is designed to bring about the correction of congenital skeletal lower limb alignment."(0%)

A Consensus was reached to Statement 4a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement*. One panellist did not agree to the corrective footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

Even those panellists who agreed to the new definition advocated that the definition needs to be clearer that this footwear works as a subsequent step to support and maintain primary corrective interventions such as serial casting and surgery,

*(To respect panellists variation in preferred overarching terminology for clinical footwear interventions reference to therapeutic, orthotic, orthopaedic and prescriptive will be removed from all definitions including those that have reached consensus)

In light of panellist feedback concerning corrective footwear's role in supporting primary corrective measures, a slight modification to this statement has been made.

"Corrective footwear is footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children. This may be secondary to a primary corrective measure such as serial casting or surgery."

Please indicate if you agree to this modified statement below.*

<input type="checkbox"/>	Yes I agree
<input type="checkbox"/>	No I don't agree

9)

You may use this optional area if you wish to provide any further information for your response.

10)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition Accommodative footwear

The relative frequency of response is detailed below:

Statement 5a:

"Accommodative footwear is children's therapeutic footwear that is designed to prevent deterioration of children's foot deformities through the dimensional matching of the footwear to the child's foot."

(76%)

Statement 5

"Accommodative footwear is children's therapeutic footwear that is designed (off the shelf or bespoke) to reduce compression, and shearing stresses on children's foot deformities through the dimensional matching of footwear upper, insole, and sole to that of the child's foot." (12%)

Other (12%)

A Consensus was reached to Statement 5a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement*. One panellist did not agree to the Accommodative footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

11)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition Functional footwear

The relative frequency of response is detailed below:

Statement 6a: "Functional footwear is children's therapeutic footwear that is designed or adapted to directly assist mobility and standing in children." (76%)

Statement 6 "Functional footwear is children's therapeutic footwear that is designed to improve dynamic gait parameters of children with mobility impairment, reducing pathological movements and facilitating typical childhood walking patterns." (12%)

Other (12%)

A Consensus was reached to Statement 6a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement*. One panellist did not agree to the Functional footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

One panellist who agreed to statement 6a questioned if psychosocial factors such as cosmesis should be considered in function for those individuals who are immobile.

12)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the process of categorising functional footwear into subgroupings:

The relative frequency of response is detailed below:

Statement 7a "Functional therapeutic footwear should be classified via its design and the intended therapeutic outcomes of its components." (76%)

Statement 7 "Functional therapeutic footwear was divided into subgroupings which are categorised dependent on the design and functional role." (12%)

Other (12%)

A Consensus was reached to Statement 7a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement*. One panellist did not agree to the footwear groupings established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

The panellist who queried the psychosocial aspect missing from the functional footwear group definition in 6a felt this method of subgrouping would address their suggestion.

13)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the subgrouping and definition Stability footwear

The relative frequency of response is detailed below:

Statement 8a "Stability therapeutic footwear is a range of footwear that is designed to assist mobility and standing in children by enhancing proprioception and influencing movements of the foot and ankle." (65%)

Other (23%)

Statement 8 "Stability functional therapeutic footwear is a range of footwear that is designed to limit extreme movements of the lower limb to maintain a controlled displacement of the centre of force during gait." (12%)

From panellists who chose "Other" one objected to the term therapeutic footwear in the statement. A number of panellists were uncertain of the evidence for the footwear influencing proprioception and that by placing this prior to its role on influencing movements in the definition may imply that this was the footwear's primary role. It was suggested to move proprioception to the end of the definition to deemphasize its role in this footwear subgrouping

A slight modification has been made to this definition to address panellist feedback and gain consensus within the panel, please rank your agreement with the following statement

"Stability Footwear is footwear that is designed to assist mobility and standing in children by influencing movements and potentially proprioception of the foot and ankle."

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
"Stability Footwear is footwear that is designed to assist mobility and standing in children by influencing movements and potentially proprioception of the foot and ankle."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14)

If your level of agreement was "somewhat agree" or lower please use this optional area to provide us with your reasoning.

15)

From Round 2 panellists were presented with a new subgrouping of functional footwear and definition for this subgrouping suggested by panellist feedback in Round 1, this was "Adapted sole". This subgrouping would incorporate raise, rocker sole and possibly instability footwear.

The median level of agreement and relative frequency of response for both the term and definition is presented below.

Term "Adapted Sole"

Median level of agreement 6 ("Agree")

Relative frequency of agreement: 6% "Somewhat Disagree", 6% "Neutral", 12% "Somewhat Agree", 41% "Agree", 35% "Strongly Agree"

Panellist Consensus reached (76%)

Definition "A range of customised sole adaptations to standard retail or children's therapeutic footwear that would assist mobility or standing in children."

Median level of agreement 6 ("Agree")

Relative frequency of agreement: 6% "Somewhat Disagree", 6% "Neutral", 23% "Somewhat Agree", 41% "Agree", 24% "Strongly Agree"

From Panellist feedback reasons for lack of agreement with the statement is that the definition should include a reference to the heel as well as the sole to ensure heel modifications are represented in the subgrouping of functional footwear. Also, therapeutic footwear was not every panellist's preferred terminology for clinical footwear interventions,

A slight modification has been made to this definition to address panellist feedback and gain consensus within the panel; please rank your agreement with the following definition for Adapted Sole Footwear

"A range of customised sole or heel adaptations to any suitable children's footwear, with the adaptations designed to assist mobility or standing in children."

In the section below, please rank your agreement with the modified definition.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7

"A range of customised sole or heel adaption to any suitable children's footwear, with the adaption designed to assist mobility or standing in children."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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16)

You may use this optional area if you wish to provide any further information for your response.



END OF SECTION 1 ROUND 3

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.