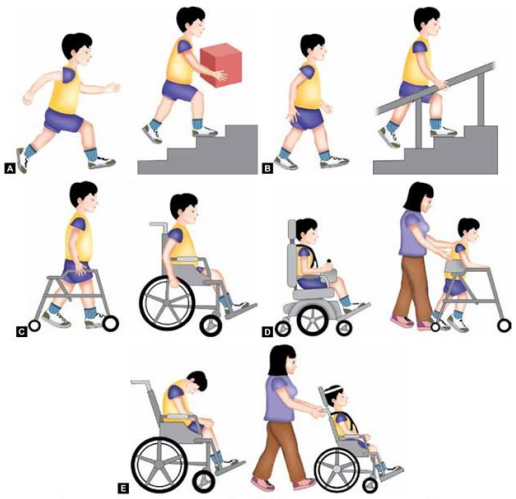
WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM? (SECTION 3 ROUND 1)

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

Section 3



Opinion on prescription and clinical outcomes of "off the shelf" and modular stability footwear clinical interventions for children with mobility impairment.

This section consists of a series of closed-ended and structured open-ended questions concerning clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (ankle foot orthoses (AFO*), walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear.

*Please remember to qualify any abbreviation for mobility aids.

The conditions presented were suggested from the research sourced in the scoping review. However, you will be given the opportunity to suggest further conditions you treat or that you consider from your manufacturing experience may benefit from stability footwear intervention.

For each condition, a range of topics will be considered, and you will be free to suggest additional aspects you view as necessary, and your reasons for these.

- Do you have experience of treating or from a manufacturing perspective recommending footwear for This condition?
- Do you feel that this condition is appropriate for stability footwear intervention?
- Degree of mobility impairment (qualify if the footwear is to be used as a sole aid or in combination with another assistive aid).
- Age of patient, i.e. at what age do you consider appropriate to use this footwear as a mobility intervention.
- Clinical Outcomes: Changes in gait e.g. reduction/increase in velocity/stride length/ side to side movement.

An example of answers to a series of questions in relation to a specific condition that would benefit from the clinical prescription of "off the shelf" and modular stability footwear is presented below.

Cerebral palsy

1) Do you have experience in treating this condition

Answer: (Yes)

2) Do you feel this condition is appropriate for stability footwear intervention

Answer: (Strongly Agree 7)

3) The degree of mobility impairment would be:

Answer: For sole use of footwear: Gross Motor Function Classification Score level 1, mild hemiplegia or diplegia where the child is capable of independent ambulation
For combined use with walking frame Level: Gross Motor Function Classification Score level 3 where independent ambulation is extremely limited,

4) Concerning this condition, the age range would be:

Answer: 1-18 years

5) Concerning this condition, the clinical outcomes of "off the shelf" and modular stability footwear intervention would be:

Answer: Increase in: gait velocity, stride length. Reduce side to side sway. Improved walking distance and participation in daily life activities such as play, family outings, walking to school.

Required Field*

1)

Name: *

Cerebral Palsy

From the research stability footwear has been proposed as a clinical intervention for children with cerebral palsy.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

2)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 8). *

☐	Yes
☐	No

3)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Cerebral palsy is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

4)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

5)

The degree of mobility impairment that would be suitable for this condition is:
*Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

6)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

7)

Clinical outcomes:

Pes Planus

From the research stability footwear has been proposed as a clinical intervention for children with pes planus.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

8)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 14). *	
☐	Yes
☐	No

9)

Do you agree this condition is suitable for stability footwear clinical intervention?							
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Pes planus is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

10)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

11)

The degree of mobility impairment that would be suitable for this condition is: †Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

12)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

13)

Clinical outcomes:

Toe Walking

From the research stability footwear has been proposed as a clinical intervention for children with toe walking.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

14)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 20). *

☐	Yes
☐	No

15)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Toe walking is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

16)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

17)

The degree of mobility impairment that would be suitable for this condition is:
†Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

18)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

19)

Clinical outcomes:

Duchenne Muscular Dystrophy

From the research stability footwear has been proposed as a clinical intervention for children with Duchenne muscular dystrophy.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

20)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 26). *

☐	Yes
☐	No

21)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Duchenne muscular dystrophy is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

22)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

23)

The degree of mobility impairment that would be suitable for this condition is:
†Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

24)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

25)

Clinical outcomes:

Spina Bifida

From the research stability footwear has been proposed as a clinical intervention for children with spina bifida.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

26)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 31). *

☐	Yes
☐	No

27)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Spina bifida is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

28)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

29)

The degree of mobility impairment that would be suitable for this condition is:
†Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

30)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

31)

Clinical outcomes:

Down's Syndrome

From the research stability footwear has been proposed as a clinical intervention for children with Down's syndrome.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

32)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 38). *

☐	Yes
☐	No

33)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Down's syndrome is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

34)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

35)

The degree of mobility impairment that would be suitable for this condition is:
†Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

36)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

37)

Clinical outcomes:

Intoeing

From the research stability footwear has been proposed as a clinical intervention for children with Duchenne muscular dystrophy.
In the questions below, please consider the following in reference to clinical protocols for issuing "off the shelf" and modular stability footwear as a mobility aid for children:

Experience treating this condition
Agreement on the suitability of stability footwear as a treatment for this condition
Degree of mobility impairment
The age range of patients
Clinical outcomes

38)

Do you have experience in treating this condition? If your answer is no move to the next condition (Q 44). *

☐	Yes
☐	No

39)

Do you agree this condition is suitable for stability footwear clinical intervention?

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Intoeing is suitable for stability footwear intervention?	☐	☐	☐	☐	☐	☐	☐

40)

Please use this area to provide us briefly with the reasoning for your agreement or disagreement of using stability footwear as an intervention for this condition.

41)

The degree of mobility impairment that would be suitable for this condition is:
†Please qualify if stability footwear is to be used as a sole aid or in combination with another assistive aid.

42)

Please indicate in years the age range this footwear intervention should be prescribed clinically for this condition: e.g. 1-5 years.

43)

Clinical outcomes:

44)

Optional Further Information
Please use the additional area to provide further conditions where you feel "off the shelf" modular stability footwear would act as a mobility aid. Please try to detail your answer with the following considerations • Condition • Severity / Grade of the condition if applicable, • The age of the patient • Clinical Outcomes

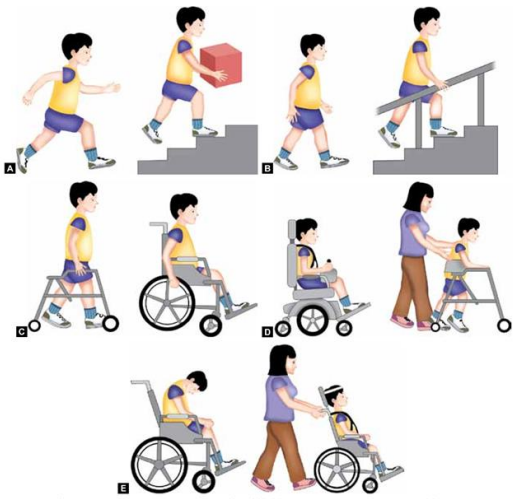
END OF SECTION 3 ROUND 1

Thank you for taking time to complete section 3 of round 1. You have now completed all sections of round 1 of this Delphi survey. Your time and participation is greatly appreciated. Please note that the following rounds will be less time consuming and will be sent in the same format as round 1.
Remember to submit your answers before closing this form.

ROUND 2(S3) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The third section will present the feedback of panellists opinions from Round 1 on clinical protocols and outcomes for the provision of “off the shelf” stability footwear clinical interventions for children with mobility impairment.

Section 3



Opinion on prescription and clinical outcomes of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

This section consists of a series of closed-ended and ranked questions concerning clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (ankle foot orthoses AFO†, walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear interventions.

† *Please remember to qualify any abbreviation for mobility aids.*

The original information provided in this section sourced from the scoping review are listed alongside modified statements informed from the responses gained from panellists in round 1.

You will be asked to give your preferred option or your level of agreement with these statements (Strongly Disagree to Strongly Agree).

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 Field*

1)

Name: *

Cerebral Palsy

From the research stability footwear has been proposed as a clinical intervention for children with cerebral palsy.
In the questions below, you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

13 of the 15 (86%) panellists had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition, please move to the next condition Question 7)

2)

Panellists were asked if cerebral palsy (CP) was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was "strongly agree" with the majority of responses between "agree" and "strongly agree.
A Consensus was reached with respect to this condition being suitable for stability footwear intervention in Round 1

Panellist feedback suggested the reasons for stability footwear as an assistive aid for CP were: it could be used alongside other assistive devices such as foot orthoses and walking frames to assist in standing and walking. It assists with mediolateral stability and proprioception to reduce falls. Other feedback stated that footwear could be issued to children with CP but should be thoroughly assessed for its suitability with clear, measurable outcomes. One panellist felt ankle foot orthoses (AFO) and foot orthoses (FO) used with regular footwear or other footwear modifications such as "tuned" footwear were more applicable interventions. However, a number of panellists felt that stability footwear would offer greater ankle stability than regular footwear and foot orthoses combinations. Other panellists suggested stability footwear as an interim stability aid in some cases when not using their AFO and could make mobility easier than their AFO for some tasks such as getting up off the floor.

The following statements have been devised form panellist feedback in relation to the suitability of stability footwear for this condition; please rank your agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may assist mediolateral stability and	☐	☐	☐	☐	☐	☐	☐

proprioception of the foot and ankle in standing and walking in children with CP.							
Stability footwear may be used alongside other assistive aids to assist standing and walking in children with CP.	☐	☐	☐	☐	☐	☐	☐
Stability footwear should only be issued to children with CP after a critical assessment of the child's mobility needs in respect to other assistive aids or footwear modifications, and with clear intervention outcomes.	☐	☐	☐	☐	☐	☐	☐

3)

Panellists were asked the degree of mobility impairment in children with CP that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested Stability footwear may be used as a sole aid to assist foot and ankle stability in walking at GMFCS-1 with no significant tone issues. Stability footwear may also be used alongside other assistive devices (AFO's walking frames) to assist stability in walking and standing from GMFCS 1-3 in ambulant children with tonal issues. May be used alongside other assistive devices as a positioning transfer standing aid in non-ambulant GMFCS 3-4 children.

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with CP suitable for stability footwear intervention, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used as a sole assistive intervention to assist both foot and ankle walking stability in children with GMFCS 1 and no significant tonal issues.	☐	☐	☐	☐	☐	☐	☐
Stability footwear may be used alongside other assistive aids to assist walking and standing in ambulant children GMFCS 1-3 with tonal issues.	☐	☐	☐	☐	☐	☐	☐
Stability footwear may be used alongside other assistive	☐	☐	☐	☐	☐	☐	☐

aids to assist standing and transfer in non-ambulant children GMFCS 3-4.							

4)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in CP

From panellists feedback, a range of ages was stated varying from 1-4 years for initiation and 16 years -adulthood for an endpoint, however from the reasoning; it was decerned even those panellists who indicated an endpoint of 16 years envisioned the potential for ongoing stability footwear intervention into adulthood if required. Some feedback indicated that footwear should only be used in mild cases (GMFCS 1) in the learning to walk stages then should focus on other orthotic aids. In moderate cases (GMFCS 2-3) where surgery was not indicated in teenage years, supportive footwear may be used alongside orthoses. Other panellists felt initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than specific age ranges such as displaying the potential to stand and endpoint defined as the need for differing assistive aids.

The following options have been suggested by panellist feedback:

☐	1-18 years (with assessed adult transition care)
☐	3-18 years (with assessed adult transition care)
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

5)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with CP:

From panellist feedback outcomes were grouped into therapeutic goals alongside the World Health Organisation International Classification of Functioning Child and Youth version (WHO ICF-CY). These were goals based on body structures and function and those based on Quality of Life measures (QoL).
Concerning body structure, passive ankle range of motion (ROM) was suggested to monitor any flexural contracture. The majority of outcomes were focused on body function. These included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns using referenced scales such as the

Edinburgh Gait Scale. Spatiotemporal outcomes included increased walking velocity, 6-minute walk test (6MWT) Timed Up and Go (TUG), stride length, and cadence. Gross motor proficiency measures were also suggested including, motor milestones and Bruininks-Oseretsky Test of Motor Proficiency (BOT-2), frequency of falls was also suggested as a measure of the child's motor performance. Physiological outcomes such as perceived exertion measures (BORG) with motor tasks were also purposed.
QoL outcome measures suggested included pain rating and measures of activities of daily living (ADL) walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM	☐	☐	☐	☐	☐	☐	☐
Kinematics: Optimising gait movement patterns (Edinburgh Gait Scale)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Number of falls	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐
Physiological: Perceived exertion (BORG)	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

6)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with CP.

Pes Planus

From the research stability footwear has been proposed as a clinical intervention for children with pes planus.
In the questions below, you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

15 of the 15 panellists 100% had clinical experience with this condition and provided the information for this section.

7)

Panellists were asked if Pes Planus was a suitable condition for stability footwear intervention in children and their reasoning for this.

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

Panellist feedback suggested that stability footwear may be used to assist foot and ankle stability in children but only in cases that required more control than could be offered by foot orthoses alone. This was thought to be where mobile symptomatic pes planus is associated with significant ankle instability (hypermobility) leading to tripping and falling or developmental delay in gross motor skills.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition; please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may assist foot and ankle stability in children with symptomatic mobile pes planus	☐	☐	☐	☐	☐	☐	☐
Stability footwear is a suitable secondary line intervention for symptomatic mobile pes planus in	☐	☐	☐	☐	☐	☐	☐

children where foot orthoses have not resolved associated symptoms							

8)

Panellists were asked the degree of mobility impairment in children with pes planus that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear should be used alongside orthoses in severe symptomatic pes planes. Severe or extreme was characterised by the panellists if the pes planus was associated with marked insufficiency of the posterior tibialis function (accessory navicular, muscle atrophy), significant foot and ankle instability that lead to tripping or falling or if pes planus was associated with developmental conditions that affected gross motor development.

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with symptomatic pes planus suitable for stability footwear intervention.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability Footwear may be used alongside foot orthoses in children with insufficiency of posterior tibialis function.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside foot orthoses in children with	☐	☐	☐	☐	☐	☐	☐

significant foot and ankle instability associated with tripping and falling.							
Stability footwear may be used alongside foot orthoses in children with conditions associated with motor delay	☐	☐	☐	☐	☐	☐	☐

9)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for Pes Planus, Panellists feedback suggested a range of ages were stated varying from 1-5 years for initiation and 15-21 years for an endpoint, however, like in CP from reasoning; it was decerned even those panellists who indicated an endpoint of 15 years envisioned assessment for ongoing support in adulthood if required. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than a specific age range such as displaying the potential to stand and endpoint defined as the need for ongoing stability footwear assistance. The following options have been suggested by panellist feedback:	
☐	1-18 years (with assessed adult transition care)
☐	5-18 years (with assessed adult transition care)
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

10)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with pes planus:

From panellist, feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.
Concerning body structure, monitoring foot posture using the FPI was suggested. Body function outcomes included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns, specifically those of the foot and ankle. Spatiotemporal outcomes included increased walking velocity, 6MWT and TUG. Gross motor proficiency measures were also discussed, Gross motor milestones, BOT-2 and frequency of falls.
QoL measures suggested by the panellists included pain rating and measures of ADL, walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback; please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Foot Posture FPI-6	☐	☐	☐	☐	☐	☐	☐
Kinematics: Optimising gait movement patterns (Foot and ankle)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal: Increase walking velocity, 6MWT, TUG	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Number of falls	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

11)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with pes planus.

Toe Walking

From the research stability footwear has been proposed as a clinical intervention for children with toe walking.
In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

15 of the 15 panellists 100% had clinical experience with this condition and provided the information for this section.

12)

Panellists were asked if toe walking was a suitable condition for stability footwear intervention in children and their reasoning for this.

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

Panellist feedback suggested that the issue with the suitability for stability footwear used as an intervention for this condition was the highly heterogeneous nature of toe walking. Some panellist stated that it may only be used in mild to moderate idiopathic toe walking (ITW) it was not to be used if toe walking was severe or associated with Autistic Spectrum Disorder or hypertonia. Other suggestions were the stability footwear should have a stiffened sole or used alongside carbon plate insole addition to limit 3rd rocker engagement. If the toe walking was associated with hypermobility and foot posture issues stability footwear may be used. Other panellist felt there was limited evidence for this intervention even in ITW.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be a suitable	☐	☐	☐	☐	☐	☐	☐

treatment if used alongside other stiffened components (insole, sole) for ITW with no associated hypertonia							
Stability footwear may be used for toe walking in developmental conditions with hypermobility and gross motor delay	☐	☐	☐	☐	☐	☐	☐

13)

Panellists were asked the degree of mobility impairment in children with toe walking that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used in combination with restrictive components (reduced forefoot rocker, carbon fibre insole plate) in type 1-2 ITW patients, the child must be able to achieve a standing plantargrade position. Other panellist felt the use for this footwear only if the child's own footwear could not accommodate an AFO.

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with toe walking suitable for stability footwear intervention, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used alongside other stiffened components for ITW Type 1-2, when the child is able to	☐	☐	☐	☐	☐	☐	☐

achieve a plantargrade position							

14)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in toe walking

Panellists feedback suggested a range of ages were stated varying from 1-4 years for initiation and 8-18 years for an endpoint. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than age-specific.

The following options have been suggested by panellist feedback

☐	1-18 years
☐	4-18 years
☐	4-8 years
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

15)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with Toe Walking:

From panellist, feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.
Concerning body structure, passive ankle ROM was suggested to monitor any flexural contracture. Body function outcomes included kinematic, kinetic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait patterns including heel and forefoot contact timing ankle ROM, Kinetic outcomes purposed in-shoe pressure measurements of heel and forefoot loading. Spatiotemporal outcomes included increased walking velocity, 6MWT and TUG.
QoL measures suggested by the panellists included pain rating and measures of ADL walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM	☐	☐	☐	☐	☐	☐	☐

Kinematics: Optimising gait movement patterns (Heel forefoot contact timing ankle ROM)	☐	☐	☐	☐	☐	☐	☐
Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal Increased walking velocity, 6MWT, TUG	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

16)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children who toe walk.

Duchenne Muscular Dystrophy
From the research stability footwear has been proposed as a clinical intervention for children with Duchenne Muscular Dystrophy (DMD). In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention. 11 of the 15 panellists 73% had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition please move to the next condition Question 22)

17)

Panellists were asked if DMD was a suitable condition for stability footwear intervention in children and their reasoning for this.

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

Panellist feedback suggested there was a dispersion of responses concerning the suitability of stability footwear for this condition. Some panellist felt there were no significant foot posture issues with DMD and if there were that foot orthoses were a more cost-effective measure. Whereas others felt it could help stabilise rearfoot and ankle motion in early stages and could be used in later stages if there was a loss of ankle range of motion or assist standing balance alongside other assistive aids (AFO). Some felt it may hinder walking in later stages due to muscle weakness and knee extension ability.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear should only be issued to children with DMD after a critical assessment of the child's mobility needs in respect to other assistive aids	☐	☐	☐	☐	☐	☐	☐

18)

Panellists were asked the degree of mobility impairment in children with DMD that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used as a sole aid or in combination with foot orthosis for foot and ankle instability in early ambulatory stage DMD (walks with some limitations to velocity and balance, can stair climb). In late

ambulatory stage DMD, (Loss of ankle ROM, difficulty with walking distances and stair climbing) stability footwear may be used in combination with an AFO and walking frames to assist with mobility. In Early non-ambulatory DMD, (Mobility requires a wheelchair, but the child may still weight-bear for a limited time) stability footwear may be used with AFOs and standing frames to assist with standing and transfer tasks.

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with DMD suitable for stability footwear intervention; please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability Footwear may be used alongside foot orthoses to assist foot and ankle stability in early ambulatory stages.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside AFO's and walking frames to assist walking in late ambulatory stages.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside AFO's and standing frames to assist	☐	☐	☐	☐	☐	☐	☐

standing and transfer in early non ambulatory stages.							

19)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in DMD Panellists feedback suggested a range of ages were stated varying from 1-5 for initiation and 9-18 for an endpoint. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than chronological. The following options have been suggested by panellist feedback	
☐	1-18 years
☐	4-18 years
☐	4-9 years
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

20)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with DMD:

From panellist feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.
Concerning body structure, passive ankle ROM was suggested to monitor any flexural contracture. Body function outcomes included kinematic, kinetic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait patterns including heel and forefoot contact timing and ankle ROM, Kinetic outcomes purposed in-shoe pressure measurements of heel and forefoot loading. Spatiotemporal outcomes included increased walking velocity, 6MWT. Gross motor proficiency measures were suggested such as frequency of falls and the four square step test.
QoL measures suggested by the panellists included pain rating and measures of ADL walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	1	2	3	4	5	6	7
Passive Ankle ROM	☐	☐	☐	☐	☐	☐	☐
Kinematics: Optimising gait movement patterns (Heel and forefoot contact timing, ankle ROM)	☐	☐	☐	☐	☐	☐	☐
Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal Increased walking velocity, 6MWT	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: four square step test	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: Number of falls	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

21)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with DMD.

Spina Bifida

From the research stability footwear has been proposed as a clinical intervention for children with spinal bifida.
In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

10 of the 15 panellists 66% had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition please move to the next condition Question 27)

22)

Panellists were asked if spina bifida (SB) was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was " agree" with the majority of responses between "agree" and "strongly agree.
A Consensus was reached with respect to this condition being suitable for stability footwear intervention in Round 1

Panellist feedback suggested that although stability footwear was suitable for children with SB even with low-level spinal involvement other assistive aids would be required alongside stability footwear. Additionally, stability footwear would have to offer a range of dimensional measures to the last to accommodate foot deformity with underlying sensory neuropathy.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear should only be issued to children with SB after a critical assessment of the child's mobility needs in respect to	☐	☐	☐	☐	☐	☐	☐

other assistive aids.							

23)

Panellists were asked the degree of mobility impairment in children with SB that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used with other assistive aids such as AFO's and Walking Frames to assist standing and walking for lumbar level 1-5 dysraphisms. In mild dysraphism at lumbar level 5, stability footwear used alongside foot orthoses may offer adequate mobility assistance.

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with SB suitable for stability footwear intervention, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used alongside foot orthoses to assist foot and ankle stability in mild level lumbar 5 vertebral involvement.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside AFO's and walking frames to assist walking and standing in lumbar 1-5 vertebral involvement.	☐	☐	☐	☐	☐	☐	☐

24)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in SB

Panellists feedback suggested an age range 1-2 years for initiation and 18-21 years for an endpoint with assessment for adult need. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than age-specific.

The following options have been suggested by panellist feedback

☐	1-18 years (with assessed adult transition care)
☐	3-18 years (with assessed adult transition care)
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

25)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear in children with Spina Bifida:

From panellist feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.
Concerning body structure, passive ankle range of motion (ROM) was suggested to monitor any flexural contracture. The majority of outcomes were focused on body function. These included kinematic and spatiotemporal biomechanical measures. Kinematic outcomes suggested optimising or normalising gait movement patterns using referenced scales such as the Hoffer Ambulation Scale. Spatiotemporal outcomes included increased walking velocity, 6-minute walk test (6MWT) Timed Up and Go (TUG), stride length, and cadence. Gross motor proficiency measures were also suggested including, motor milestones and Hoffer Ambulation Scale. Physiological outcomes such as perceived exertion measures (BORG) with motor tasks were also purposed. QoL outcome measures suggested included pain rating and measures of activities of daily living (ADL) walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Kinematics: Optimising gait movement patterns (Hoffer Ambulation scale)	☐	☐	☐	☐	☐	☐	☐

Spatiotemporal: Increased walking velocity, 6MWT, TUG	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: (Hoffer Ambulation Score)	☐	☐	☐	☐	☐	☐	☐
Physiological: Perceived exertion (BORG)	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

11)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with SB.

Down's Syndrome
From the research stability footwear has been proposed as a clinical intervention for children with Down's Syndrome. In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention 13 of the 15 panellists 87% had clinical experience with this condition and provided the information for this section. (If you have no clinical experience in treating this condition please move to the next condition Question 32)

27)

Panellists were asked if Down's Syndrome was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was " agree" with the majority of responses between "agree" and "strongly agree.
A consensus was reached in Round 1 with respect to this condition being suitable for stability footwear intervention.

Panellist feedback suggested that this footwear could assist the mediolateral stability of the foot and ankle due to low tone and hypermobility. This would aid gross motor skill acquisition and mobility in these children. Other panellist suggested only consider stability footwear if the child's foot dimensions were outside a standard last. There was also the discussion that stability footwear offer modular sizing to accommodate altered foot anthropometrics in these children.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may assist mediolateral stability and proprioception of the foot and ankle in standing and walking in children with Down's syndrome	☐	☐	☐	☐	☐	☐	☐
Stability footwear design should consider last adaptions to accommodate the foot dimensions of children with Down's syndrome	☐	☐	☐	☐	☐	☐	☐

28)

Panellists were asked the degree of mobility impairment in children with Down's syndrome that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used as a sole intervention in children with delayed motor skills alongside hypermobility and hypotonia in the pre-walking and early walking stages. If associated with ankle instability (tripping, falling) in older children use stability footwear to support foot orthoses interventions. If associated with knee instability stability footwear may be used to support AFO interventions

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with Down's syndrome suitable for stability footwear intervention, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside foot orthoses to assist walking in individuals	☐	☐	☐	☐	☐	☐	☐

with ankle instability							
Stability Footwear may be used alongside AFO's to assist walking in individuals with knee instability	☐	☐	☐	☐	☐	☐	☐

29)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in Down's syndrome Panellists feedback suggested an age range 1-4 for initiation and 18 for an endpoint with ongoing assessment for adult need. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than age-specific. The following options have been suggested by panellist feedback	
☐	1-18 years (with assessed adult transition care)
☐	4-18 years (with assessed adult transition care)
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

30)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with Down's syndrome:

From panellist feedback outcomes were grouped into therapeutic goals alongside the World Health Organisation International Classification of Functioning Child and Youth version (WHO ICF-CY). These were goals based on body structures and function and those based on Quality of Life measures (QoL).
Concerning body structure, passive ankle range of motion (ROM) was suggested to monitor any flexural contracture. The majority of outcomes were focused on body function. These included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns using referenced scales such as the Edinburgh Gait Scale. Spatiotemporal outcomes included increased walking velocity, 6-minute walk test (6MWT) Timed Up and Go (TUG), stride length, and cadence. Gross motor

proficiency measures were also suggested including, motor milestones and Bruininks-Oseretsky Test of Motor Proficiency (BOT-2), frequency of falls was also suggested as a measure of the child's motor performance. Physiological outcomes such as perceived exertion measures (BORG) with motor tasks were also purposed.
QoL outcome measures suggested included pain rating and measures of activities of daily living (ADL) walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Foot posture FPI-6	☐	☐	☐	☐	☐	☐	☐
Kinematics: Optimising gait movement patterns (foot and ankle)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal Increase Velocity, 6MWT	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: number of falls	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL Comfort with Footwear	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

31)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with Down's syndrome.

Intoeing

From the research stability footwear has been proposed as a clinical intervention for children with intoeing.
In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

12 of the 15 panellists 80% had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition please move to Question 36)

32)

Panellists were asked if Intoeing was a suitable condition for stability footwear intervention in children and their reasoning for this.

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

Feedback form panellists suggested that intoeing was generally a skeletal rotational issue associated with typical development and stability footwear has no effect on the natural progression on this.
Panellist suggested that only significant cases of metatarsus adductus required footwear intervention and this was corrective footwear (reverse last and straight last) not stability footwear.
Some panellists suggested that if the intoeing was associated with a neuromuscular pathology or tripping stability footwear may be considered. (These indications were also the same as the suggested level of mobility impairment)

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may a suitable intervention for intoeing if associated with tripping	☐	☐	☐	☐	☐	☐	☐

Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	☐	☐	☐	☐	☐	☐	☐

33)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in Intoeing

The age range was only given by a limited number of panellist as the majority of panellists did not feel this condition was a suitable indication for stability footwear intervention.

3 years was given for the initiation of intervention. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than age-specific.

☐	3 years onwards
☐	Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	N/A I do not feel this condition is suitable for stability footwear intervention.

10)

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear in children with Intoeing:

From panellist feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.
Body function outcomes included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait patterns specifically Angle of Gait. Spatiotemporal outcomes included increased walking velocity, 6MWT and TUG, Motor skills proficiency was discussed in relation to the frequency of tripping. QoL measures suggested by the panellists included pain rating, perceived comfort with footwear and measures of activities of daily living (walking to school, shops, playparks and interaction with peers).

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

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

Kinematics: Optimising gait movement patterns (Angle of Gait)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal: Increased walking velocity, 6MWT, TUG	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: reduction in tripping	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

11)

You may use this optional area if you wish to provide any further information on stability footwear intervention in children with intoeing.

Additional Conditions:

36)

	I have no clinical experience with this condition	Disagree	Neutral	Agree
Charcot Marie Tooth, Hereditary Motor Sensory Neuropathy	☐	☐	☐	☐

Hypermobility (Ehlers Danlos Type)	☐	☐	☐	☐
Developmental Coordination Disorder	☐	☐	☐	☐
Rett's Syndrome	☐	☐	☐	☐
Foetal Alcohol syndrome	☐	☐	☐	☐
Accessory navicular	☐	☐	☐	☐
Chronic lateral ankle instability	☐	☐	☐	☐

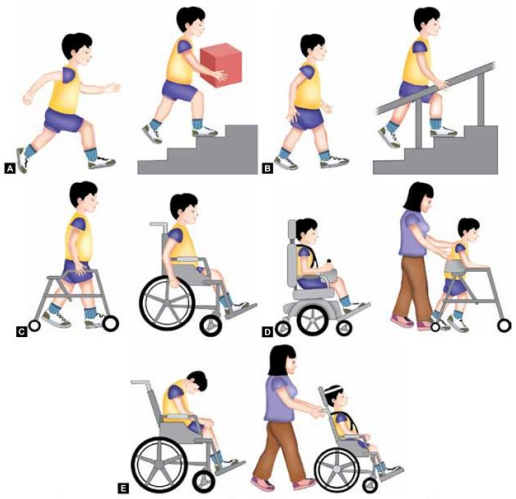
END OF SECTION 3 ROUND 2

Thank you for taking the time to complete section 3 of round 2. You have now completed all sections of round 2 of this Delphi survey. Your time and participation is greatly appreciated.
Remember to submit your answers before closing this form.

ROUND 3(S3) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The third section will present yours and the panellists' collective choices and opinions from Round 2 on clinical protocols and outcomes for the provision of “off the shelf” stability footwear clinical interventions for children with mobility impairment.

Section 3



Opinion on prescription and clinical outcomes of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

In this section, 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 clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (Ankle Foot Orthosis (AFO)*, walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear interventions.

* Please remember to qualify any abbreviation for mobility aids.

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 ≥75% of panellists with a level of agreement of "agree" or above, or ≥ 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 Field*

1)

Name: *

Cerebral Palsy

In the questions below you will be presented with the collective choices and opinions from Round 2
concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

2)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with Cerebral Palsy (CP) in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Purpose: Stability footwear may assist mediolateral stability and proprioception of the foot and ankle in standing and walking in children with CP.
Median level of Agreement 6 (Agree)
7% "Somewhat Disagree", 7% "Neutral", 7% "Somewhat Agree", 36% "Agree", 43% "Strongly Agree"
A consensus was reached for this statement.

Stability footwear may be used alongside other assistive aids to assist standing and walking in children with CP.
Median level of Agreement 7 ("Strongly Agree")
14% "Neutral", 29% "Agree", 57% "Strongly Agree"
A consensus was reached for this statement.

Stability footwear should only be issued to children with CP after a critical assessment of the child's mobility needs in respect to other assistive aids or footwear modifications and with clear intervention outcomes.
Median level of Agreement 6 ("Agree")
14% "Neutral", 36% "Agree", 50% "Strongly Agree"
A consensus was reached for this statement.

Panellists feedback suggested there may be potential overlap between stability footwear and oversplint footwear, and that stability footwear was only to be issued to provide further stability and not just to accommodate the adjunct assistive aid such as an Ankle Foot Orthosis (AFO) or Knee Ankle Foot Orthosis (KAFO).

The following statement has been added based on panellist feedback.*

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

Stability footwear is only to be issued as an adjunct to AFO's KAFO's where additional medio-lateral stability is required, and not just to accommodate the orthotic.	☐	☐	☐	☐	☐	☐	☐

3)

Panellists were asked to rank their agreement with the following statements concerning the degree of mobility impairment in children with CP that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability footwear may be used as a sole assistive intervention to assist both foot and ankle stability in walking in children with Gross Motor Functioning Classification Score (GMFCS) 1 and no significant tonal issues.
Median level of Agreement 6 ("Agree")
7% "Somewhat Disagree", 7% "Neutral", 14% "Somewhat Agree", 43% "Agree", 29% "Strongly Agree"

Stability footwear may be used alongside other assistive aids to assist walking and standing in ambulant children GMFCS 1-3 with tonal issues.
Median level of Agreement 6 ("Agree")
14% "Neutral", 7% "Somewhat Agree", 43% "Agree", 36% "Strongly Agree"
A consensus was reached for this statement.

Stability footwear may be used alongside other assistive aids to assist standing and transfer in non-ambulant children GMFCS 3-4.
Median level of Agreement 6 ("Agree")
14% "Neutral", 14% "Somewhat Agree", 43% "Agree", 29% "Strongly Agree"

Panellists feedback suggested there was potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been slightly modified based on panellist feedback.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	1	2	3	4	5	6	7
Stability footwear may be used as a sole assistive intervention to assist both foot and ankle stability in walking in children with GMFCS 1 and no significant tonal issues.	☐	☐	☐	☐	☐	☐	☐
Stability footwear may be used simultaneously with other assistive aids to assist standing and transfer in non-ambulant children GMFCS 3-4. This footwear must be issued to assist stability and not just to accommodate the associated assistive aid	☐	☐	☐	☐	☐	☐	☐

4)

Panellists were presented with the following options in relation to the suitable age range for stability footwear intervention for CP in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).69%
Option 2, 1-18 years (with assessed adult transition care) 15%
Option 3, 3-18 years (with assessed adult transition care) 8%
Option 4, N/A I do not feel this condition is suitable for stability footwear intervention 8%

No specific panellist feedback was given to inform any further modification of these options. However, you may consider the distribution of the panel's response to either change or maintain your previous option.	
☐	Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	Option 2, 1-18 years (with assessed adult transition care)
☐	Option 3, 3-18 years (with assessed adult transition care)
☐	Option 4, N/A I do not feel this condition is suitable for stability footwear intervention.

5)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with CP in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Passive Ankle ROM
Median level of Agreement 6 ("Agree")
7% "Somewhat Disagree", 14% "Neutral", 22% "Somewhat Agree", 43% "Agree"
14% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Edinburgh Gait Scale)
Median level of Agreement 6 ("Agree")
21% "Somewhat Agree", 57% "Agree", 22% "Strongly Agree"
A consensus was reached for this statement

Spatiotemporal: Increased walking velocity, 6 Minute Walk Test (6MWT), Timed Up and Go (TUG), stride length, cadence
Median level of Agreement 6 ("Agree")
14% "Somewhat Agree", 50% "Agree", 36% "Strongly Agree"
A consensus was reached for this statement

Motor skill proficiency: Number of falls
Median level of Agreement 6 ("Agree")
14% "Neutral", 7% "Somewhat Agree", 57% "Agree", 22% "Strongly Agree"
A consensus was reached for this statement

Motor skill proficiency:
Gross Motor Skills (BOT-2)
Median level of Agreement 6 ("Agree")
14% "Neutral", 14% "Somewhat Agree", 50% "Agree", 22% "Strongly Agree"

Physiological: Perceived exertion (Borg)
Median level of Agreement 5 ("Somewhat Agree")
7% "Neutral", 43% "Somewhat Agree", 36% "Agree", 14% "Strongly Agree"

Quality of Life (QoL): Pain
Median level of Agreement 6 ("Agree")
7% "Neutral", 14% "Somewhat Agree", 50% "Agree", 29% "Strongly Agree"
A consensus was reached for this statement

QoL: Activities of Daily Living (ADL) (daily mobility and social interaction)
Median level of Agreement 6 ("Agree")
21% "Somewhat Agree", 50% "Agree", 29% "Strongly Agree"
A consensus was reached for this statement

Panellist feedback suggested the following additional outcomes be included:
Passive Ankle Range of Motion (ROM) includes measures with the knee flexed and extended. Weight-bearing lunge may be used if the child can get the heel to ground in addition to passive Ankle ROM. Physiological cost index also to be considered. No specific panellist feedback was given to inform further modification of the other outcomes that did not reach consensus. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM measured with knee flexed and extended within child's limits	☐	☐	☐	☐	☐	☐	☐
Ankle ROM Weight Bearing lunge provided child can get heel to ground	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐
Physiological: Perceived exertion (BORG)	☐	☐	☐	☐	☐	☐	☐
Physiological: Physiological Cost Index	☐	☐	☐	☐	☐	☐	☐

6)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with CP please use this optional area to provide us with your reasoning.

Pes Planus

In the questions below you will be presented with the collective choices and opinions from Round 2
concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

7)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with mobile pes planus in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Suitability and Purpose
Stability footwear may assist foot and ankle stability in children with symptomatic mobile pes planus
Median level of Agreement 6 ("Agree")
7% "Disagree", 7% "Neutral", 7% "Somewhat Agree", 57% "Agree", 22% "Strongly Agree"
A consensus was reached for this statement.

Stability footwear is a suitable secondary line intervention for symptomatic mobile pes planus in children where foot orthoses have not resolved associated symptoms
Median level of Agreement 7 ("Strongly Agree")
14% "Neutral", 29% "Agree", 57% "Strongly Agree"
A consensus was reached for this statement.

8)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with pes planus that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability Footwear may be used alongside foot orthoses in children with insufficiency of posterior tibialis function.
Median level of Agreement 6 ("Agree")
14% "Neutral", 14% "Somewhat Agree", 65% "Agree", 7% "Strongly Agree"

Stability Footwear may be used alongside foot orthoses in children with significant foot and ankle instability associated with tripping and falling.
Median level of Agreement 6 ("Agree")
14% "Neutral", 7% "Somewhat Agree", 43% "Agree", 36% "Strongly Agree"
A consensus was reached for this statement.

Stability footwear may be used alongside foot orthoses in children with conditions associated with motor delay
Median level of Agreement 6 ("Agree")
7% "Disagree", 29% "Somewhat Agree", 50% "Agree", 14% "Strongly Agree"

There was also potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been slightly modified based on panellist feedback. *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability Footwear may be be used simultaneously with foot orthoses in children with insufficiency of posterior tibialis function.	☐	☐	☐	☐	☐	☐	☐
Stability footwear may be used simultaneously with foot orthoses in children with conditions associated with motor delay	☐	☐	☐	☐	☐	☐	☐

9)

Panellists were presented with the following options concerning the suitable age range for stability footwear intervention for mobile pes planus in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).77%

Option 2, 1-18 years (with assessed adult transition care) 15%
Option 3, N/A I do not feel this condition is suitable for stability footwear intervention 8%
Option 4, 5-18 years (with assessed adult transition care) 0%

A consensus was reached to Option 1,

10)

Panellists were asked to rank their agreement with the following statements in relation to the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with mobile pes planus in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Foot Posture FPI-6
Median level of Agreement 5 ("Somewhat Agree")
7% "Disagree", 7% "Somewhat Disagree", 22% "Neutral", 14% "Somewhat Agree", 36% "Agree",
14% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Foot and ankle)
Median level of Agreement 6 ("Agree")
23% "Somewhat Agree", 62% "Agree", 15% "Strongly Agree"
A consensus was reached for this statement

Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence
Median level of Agreement 6 ("Agree")
7% "Neutral", 21% "Somewhat Agree", 36% "Agree", 36% "Strongly Agree"

Motor skill proficiency: Number of falls
Median level of Agreement 6 ("Agree")
29% "Somewhat Agree", 57% "Agree", 14% "Strongly Agree"

Motor skill proficiency:
Gross Motor Skills (BOT-2)
Median level of Agreement 6 ("Agree")
36% "Somewhat Agree", 43% "Agree", 21% "Strongly Agree"

QoL: Pain
Median level of Agreement 6 ("Agree")
21% "Somewhat Agree", 58% "Agree", 21% "Strongly Agree"
A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 ("Agree")
36% "Somewhat Agree", 43% "Agree", 21% "Strongly Agree"

Panellist feedback suggested that the FPI-6 is a semi-quantitative description of foot posture and should not be considered as an outcome measure. Panellist suggested the

following further outcomes to be included: Passive Ankle ROM including measures with the knee flexed and extended within the child's limits of knee extension. Weight-bearing lunge may also be used to measure ankle ROM if the child can get their heel to the ground. 10-meter walk test as a valid spatiotemporal measure. Physiological Cost Index also to be considered. No specific panellist feedback was given to inform further modification of the other outcomes that did not reach consensus. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Foot Posture FPI-6	☐	☐	☐	☐	☐	☐	☐
Passive Ankle ROM measured with knee flexed and extended within child's limits	☐	☐	☐	☐	☐	☐	☐
Ankle ROM Weight Bearing lunge provided child can get heel to ground	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal: Increase walking velocity, 6MWT, TUG 10 meter walk test	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Number of falls	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐
Physiological: Physiological Cost Index	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

11)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with Mobile Pes Planus please use this optional area to provide us with your reasoning.

Toe Walking

In the questions below you will be presented with the collective choices and opinions from Round 2
concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

12)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with toe walking in Round 2.
The median level of agreement and relative distribution of response is detailed below.

Stability footwear may be a suitable treatment if used alongside other stiffened components (insole, sole) for ITW with no associated hypertonia
Median level of Agreement 6 ("Agree")
21% "Neutral", 21% "Somewhat Agree", 37% "Agree", 21% "Strongly Agree"

Stability footwear may be used for toe walking in developmental conditions with hypermobility and gross motor delay
Median level of Agreement 6 ("Agree")
43% "Somewhat Agree", 29% "Agree", 28% "Strongly Agree"

Panellist feedback suggested better alternative assistive aids from their clinical experience with all cases of Idiopathic Toe Walking (ITW); such as Dynamic AFOs that inhibit plantarflexion and stimulate dorsiflexion offering more effective treatment than stiffened footwear, however, no specific feedback was given to inform modification of the statements.

Based on panellist feedback please rank your agreement with the following statements.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	1	2	3	4	5	6	7
Stability footwear may be a suitable treatment if used simultaneously with other stiffened components (insole, stiffend sole) for ITW with no associated hypertonia	☐	☐	☐	☐	☐	☐	☐
Stability footwear may be used for toe walking in developmental conditions with hypermobility and gross motor delay	☐	☐	☐	☐	☐	☐	☐

13)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility of impairment in children with toe walking that would be suitable for stability footwear, both as a sole aid or in combination with another assistive aid in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability footwear may be used alongside other stiffened components for ITW Type 1-2, when the child is able to achieve a plantargrade position
Median level of Agreement 5 ("Somewhat Agree")
7% "Disagree", 14% "Neutral", 43% "Somewhat Agree", 22% "Agree", 14% "Strongly Agree".

Panellist feedback suggested stability footwear may cause issues with knee hyperextension if used in conjunction with AFO's and suggested their use only if gait requires mediolateral stability.

The following statements have been slightly modified based on panellist feedback.*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	1	2	3	4	5	6	7
Stability footwear may be used to provide mediolateral stability when used simultaneously with stiffened components for ITW Type 1-2, when the child is able to achieve a plantargrade position	☐	☐	☐	☐	☐	☐	☐

14)

Panellists were presented with the following options in relation to the suitable age range for stability footwear intervention for toe walking in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).77%
Option 2, 4-8 years (15%)
Option 3, 4-18years (8%)
Option 4 1-18 years (0%)
Option 5 N/A I do not feel this condition is suitable for stability footwear intervention (0%)

A Consensus was reached for Option 1

15)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with toe walking in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Passive Ankle ROM
Median level of Agreement 6 ("Agree")
8% "Neutral", 38% "Somewhat Agree", 46% "Agree"
8% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Foot and Ankle)

Median level of Agreement 6 ("Agree")
21% "Somewhat Agree", 36% "Agree", 43% "Strongly Agree"

Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)
Median level of Agreement 5 ("Somewhat Agree")
7% "Somewhat Disagree", 29% "Neutral", 21% "Somewhat Agree", 29% "Agree"
14% "Strongly Agree"

Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence
Median level of Agreement 6 ("Agree")
7% "Neutral", 29% "Somewhat Agree," 50% "Agree", 14% "Strongly Agree"

QoL: Pain
Median level of Agreement 6 ("Agree")
14% "Somewhat Agree", 72% "Agree", 14% "Strongly Agree"
A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 ("Agree")
36% "Somewhat Agree", 50% "Agree", 14% "Strongly Agree"

Panellist feedback suggested modifications and additions to the outcomes.
The weight bearing lunge test to measure Ankle ROM in addition to Passive ROM in children who can get the heel to the floor. Consider adding 10-metre walk test as a valid spatiotemporal measure. Finally the addition of plantar callus patterns and sole wear patterns of the footwear. No specific panellist feedback was given to inform further modification of the other outcomes that did not reach consensus. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM measured with knee flexed and extended within child's limits	☐	☐	☐	☐	☐	☐	☐
Ankle ROM Weight Bearing lunge provided child can get heel to ground	☐	☐	☐	☐	☐	☐	☐

Kinematics: Optimising gait movement patterns (Heel forefoot contact timing ankle ROM)	☐	☐	☐	☐	☐	☐	☐
Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal Increased walking velocity, 6MWT, TUG 10-meter walk test	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

16)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with Toe Walking please use this optional area to provide us with your reasoning.

Duchenne Muscular Dystrophy
In the questions below you will be presented with the collective choices and opinions from Round 2 concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(93%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition, please move to the next condition)

17)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with Duchenne Muscular Dystrophy (DMD) in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability footwear should only be issued to children with DMD after a critical assessment of the child's mobility needs in respect to other assistive aids
Median level of Agreement 7 ("Strongly Agree")
8% "Neutral", 31% "Agree", 61% "Strongly Agree"
A consensus was reached for this statement.

18)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with DMD that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability Footwear may be used alongside foot orthoses to assist foot and ankle stability in early ambulatory stages.
Median level of Agreement 6 ("Agree")
8% "Neutral", 23% "Somewhat Agree", 54% "Agree", 15% "Strongly Agree"

Stability Footwear may be used alongside AFO's and walking frames to assist walking in late ambulatory stages.
Median level of agreement 6 ("Agree")
15% "Somewhat Disagree", 23% "Somewhat Agree", 54% "Agree", 8% "Strongly Agree"

Stability Footwear may be used simultaneously with AFO's and standing frames to assist standing and transfer in early non-ambulatory stages.
Median level of Agreement 5 ("Somewhat Agree")
15% "Somewhat Disagree", 8% "Neutral", 31% "Somewhat Agree", 31% "Agree", 15% "Strongly Agree"

Panellist feedback indicated there was potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been slightly modified based on panellist feedback

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	1	2	3	4	5	6	7
Stability Footwear may be used simultaneously with foot orthoses to assist foot and ankle stability in early ambulatory stages.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used simultaneously with AFO's and walking frames to assist walking in late ambulatory stages.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used simultaneously with AFO's and standing frames to assist standing and transfer in early non ambulatory stages.	☐	☐	☐	☐	☐	☐	☐

19)

Panellists were presented with the following options in relation to the suitable age range for stability footwear intervention DMD in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).68%
Option 2, 1-18 years 8%
Option 3, 4-9 years 8%

Option 4, 4-18 years 8% Option 5, N/A I do not feel this condition is suitable for stability footwear intervention 8% No specific panellist feedback was given to inform any further modification of these options. However, you may consider the distribution of the panel's response to either change or maintain your previous option.	
☐	Option1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual)
☐	Option 2, 1-18 years
☐	Option 3, 4-9 years
☐	Option 4, 4-18 years
☐	Option 5, N/A I do not feel this condition is suitable for stability footwear intervention.

20)

Panellists were asked to rank their agreement with the following statements in relation to the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with DMD in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Passive Ankle ROM
Median level of Agreement 5 ("Somewhat Agree")
8% "Somewhat Disagree", 8% "Neutral", 61% "Somewhat Agree", 15% "Agree"
8% Strongly Agree

Kinematics: Optimising gait movement patterns (Foot and Ankle)
Median level of Agreement 6 ("Agree")
23% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement.

Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)
Median level of Agreement 5 ("Somewhat Agree")
8% "Somewhat Disagree", 16% "Neutral", 30% "Somewhat Agree", 30% "Agree"
16% "Strongly Agree"

Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence
Median level of Agreement 6 ("Agree")
8% "Neutral", 15% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

Gross motor proficiency: four square step test
Median level of Agreement 6 ("Agree")
15% "Neutral", 31% "Somewhat Agree", 46% "Agree", 8% "Strongly Agree"

Gross motor proficiency: Number of falls
Median level of Agreement 6 ("Agree")

8% "Neutral", 15% "Somewhat Agree", 69% "Agree", 8% "Strongly Agree"
A consensus was reached for this statement

QoL: Pain
Median level of Agreement 6 ("Agree")
8% "Neutral", 8% "Somewhat Agree", 76% "Agree", 8% "Strongly Agree"
A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 ("Agree")
15% "Somewhat Agree", 70% "Agree", 15% "Strongly Agree"
A consensus was reached for this statement

Panellist feedback suggested the following modifications to the outcomes.
Use weight bearing lunge test to measure Ankle ROM in addition to Passive ROM in children who can get their heel to the floor. Consider adding the 10-meter walk test as a valid spatiotemporal measure. A pragmatic point was raised in relation to degenerative conditions and outcomes, in that they need to consider the stage of the condition in light of the capability of the child to perform the tasks required. No specific panellist feedback was given to inform further modification of the other outcomes that did not reach consensus. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM measured with knee flexed and extended within child's limits	☐	☐	☐	☐	☐	☐	☐
Ankle ROM Weight Bearing lunge provided child can get heel to ground	☐	☐	☐	☐	☐	☐	☐
Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)	☐	☐	☐	☐	☐	☐	☐

Spatiotemporal 10-meter walk test	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: four square step test	☐	☐	☐	☐	☐	☐	☐
Outcomes for a degenerative condition must consider the stage of the condition and the capability of the child to perform the tasks.	☐	☐	☐	☐	☐	☐	☐

21)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with DMD please use this optional area to provide us with your reasoning.

Spina Bifida
In the questions below you will be presented with the collective choices and opinions from Round 2 concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition. (86%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section. (If you have no clinical experience in treating this condition, please move to the next condition)

22)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear children with Spina Bifida (SB) from Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability footwear should only be issued to children with SB after a critical assessment of the child's mobility needs in respect to other assistive aids.
Median level of Agreement 6 ("Agree")
8% "Neutral", 42% "Agree", 50% "Strongly Agree"
A consensus was reached for this statement.

23)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with SB that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.
The median level of agreement and the relative distribution of response is detailed below.

Stability footwear may be used alongside foot orthoses to assist foot and ankle stability in mild level lumbar 5 vertebral involvement.
Median level of Agreement 5 ("Somewhat Agree")
8% "Strongly disagree", 42% "Somewhat Agree", "50% Agree",

Stability Footwear may be used alongside AFO's and walking frames to assist walking and standing in lumbar 1-5 vertebral involvement.
Median level of agreement 6 ("Agree")
8% "Strongly disagree", 8% "Somewhat Disagree", 26% "Somewhat Agree", 50% "Agree", 8% "Strongly Agree"

Panellist feedback suggested the recommendations should consider actual severity of dysraphism as well as spinal level (Occulta, Meningocele, Myelomeningcele) and incorporate assistive aid recommendations from 'Orthoses for Myelomeningocele' in the Atlas of Orthoses and Assistive Devices, 2019. L1-3 level lesions would need Hip Knee Ankle Foot Orthosis (HKAFO) or Knee Ankle Foot Orthoses (KAFO) to be able to stand/walk. Level L4-5 lesions would walk with AFOs and S1 walk without AFO.

There was potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been modified and developed based on panellist feedback

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used simultaneously with foot orthoses	☐	☐	☐	☐	☐	☐	☐

to assist foot and ankle stability in sacral level 1 (Meningocele).							
Stability Footwear may be used simultaneously with AFO's and walking frames to assist walking and standing in lumbar level 4-5 (Meningocele, Myelomeningocele).	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used simultaneously with HKAFO or KAFO and walking frames to assist walking and standing in lumbar level 1-3 (Meningocele, Myelomeningocele).	☐	☐	☐	☐	☐	☐	☐

24)

Panellists were presented with the following options concerning the suitable age range for stability footwear intervention for SB in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual). (73%)
Option 2, 1-18 years (with assessed adult transition care) (18%)
Option 3, 4-18 years (with assessed adult transition care) (9%)
Option 4, N/A I do not feel this condition is suitable for stability footwear intervention (0%)

No specific panellist feedback was given to inform any further modification of these options. However, you may consider the distribution of the panel's response to either change or maintain your previous option.

☐	Option 1 Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	Option 2, 1-18 years (with assessed adult transition care)
☐	Option 3, 4-18 years (with assessed adult transition care)
☐	Option 4, N/A I do not feel this condition is suitable for stability footwear intervention.

25)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with SB in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Kinematics: Optimising gait movement patterns (Hoffer Ambulation Scale)
Median level of Agreement 6 ("Agree")
18% "Neutral" 9% "Somewhat Agree", 64% "Agree", 9% "Strongly Agree"

Spatiotemporal: Increased walking velocity, 6MWT, TUG,
Median level of Agreement 6 ("Agree")
9% "Somewhat Agree", 82% "Agree", 9% "Strongly Agree"
A consensus was reached for this statement

Motor skill proficiency: Hoffer Ambulation Score
Median level of Agreement 6 ("Agree")
9% "Neutral", 9% "Somewhat Agree", 73% "Agree", 9% "Strongly Agree"
A consensus was reached for this statement

Physiological Perceived exertion (BORG)
Median level of Agreement 6 ("Agree")
9% "Neutral", 82% "Agree", 9% "Strongly Agree"
A consensus was reached for this statement

QoL: Pain
Median level of Agreement 6 ("Agree")
9% "Somewhat Agree", 82% "Agree", 9% "Strongly Agree"
A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 ("Agree")
18% "Somewhat Agree", 73% "Agree", 9% "Strongly Agree"
A consensus was reached for this statement

No specific panellist feedback was given to inform any further modification of the outcomes for SB. However, you may consider the distribution of the panel's response to either change or maintain your previous level of agreement with the following outcome.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Kinematics: Optimising gait movement patterns (Hoffer Ambulation scale)	☐	☐	☐	☐	☐	☐	☐

11)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with SB please use this optional area to provide us with your reasoning.

Down's Syndrome
In the questions below you will be presented with the collective choices and opinions from Round 2 concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition. (93%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section. (If you have no clinical experience in treating this condition, please move to the next condition)

27)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear children with Down's Syndrome from Round 2. The median level of agreement and the relative distribution of response is detailed below. Stability footwear may assist mediolateral stability and proprioception of the foot and ankle in standing and walking in children with Down's syndrome Median level of Agreement 6 ("Agree") 15% "Somewhat Agree", 62% "Agree", 23% "Strongly Agree" A consensus was reached for this statement. Stability footwear design should consider last adaptions to accommodate the foot dimensions of children with Down's syndrome Median level of Agreement 6 (Agree) 8% "Neutral", 42% "Agree", 50% "Strongly Agree" A consensus was reached for this statement.

28)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with Down's Syndrome that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2. The median level of agreement and relative distribution of response is detailed below.

Stability footwear may be used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.
Median level of Agreement 6 (Agree)
8% "Strongly disagree", 42% "Somewhat Agree", 50% "Agree",

Stability Footwear may be used alongside foot orthoses to assist walking in individuals with ankle instability
Median level of agreement 6 (Agree)
8% "Somewhat Agree", 69% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

Stability Footwear may be used alongside foot orthoses to assist walking in individuals with knee instability
Median level of agreement 6 (Agree)
8% "Strongly disagree", 15% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

Although consensus was reached in respect to knee instability and the use of stability footwear a potential adverse event was elaborated from panellist feedback in that associated knee hyperextension would contraindicate stiffened sole therapy in combination with AFO, as this would increase hyperextension in midstance,

The following statements have been modified and developed based on panellist feedback

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may be used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.	☐	☐	☐	☐	☐	☐	☐
Stability Footwear may be used alongside foot	☐	☐	☐	☐	☐	☐	☐

orthoses to assist walking in individuals with ankle instability							
Stability Footwear with a stiffened sole is contraindicated with simultaneous AFO use in individuals with knee hyperextension.	☐	☐	☐	☐	☐	☐	☐

29)

Panellists were presented with the following options in relation to the suitable age range for stability footwear intervention for Down's Syndrome in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual). (77%)
Option 2, 1-18 years (with assessed adult transition care) (15%)
Option 3, 4-18 years (with assessed adult transition care) (8%)
Option 4, N/A I do not feel this condition is suitable for stability footwear intervention (0%)

A consensus was reached for Option 1

30)

Panellists were asked to rank their agreement with the following statements in relation to the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with Down's Syndrome in Round 2:
The median level of agreement and relative distribution of response is detailed below.

Foot Posture FPI-6
Median level of Agreement 5 (Somewhat Agree)
8% "Disagree", 15% "Somewhat Disagree", 15% "Neutral", 23% "Somewhat Agree", 31% "Agree",
8% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Foot and ankle)
Median level of Agreement 6 (Agree)
8% "Somewhat Disagree", 23% "Somewhat Agree", 46% "Agree", 23% Strongly Agree

Spatiotemporal: Increased walking velocity, 6MWT,
Median level of Agreement 6 (Agree)
8% "Neutral", 15% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement.

Gross Motor skill proficiency: Number of falls
Median level of Agreement 6 (Agree)
8% "Neutral", 8% "Somewhat Agree", 61% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

Motor skill proficiency:
Gross Motor Skills (BOT-2)
Median level of Agreement 6 (Agree)
31% "Somewhat Agree", 61% "Agree", 8% "Strongly Agree"

QoL: Pain
Median level of Agreement 6 (Agree)
8% "Somewhat Agree", 69% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

QoL: Comfort with Footwear
Median level of Agreement 6 (Agree)
23% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"
A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 (Agree)
15% "Somewhat Agree", 62% "Agree", 23% "Strongly Agree"
A consensus was reached with this statement.

Panellist feedback suggested that the FPI-6 is a semi-quantitative description of foot posture and should not be considered as an outcome measure. Panellist suggested adding 10-meter walk test as a valid spatiotemporal measure. No specific panellist feedback was given to inform further modification of the other outcomes that did not reach consensus. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Foot posture FPI-6	☐	☐	☐	☐	☐	☐	☐
Kinematics: Optimising gait movement patterns	☐	☐	☐	☐	☐	☐	☐

(foot and ankle)							
Spatiotemporal 10-meter walk test	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: number of falls	☐	☐	☐	☐	☐	☐	☐
Motor skill proficiency: Gross Motor Skills (BOT-2)	☐	☐	☐	☐	☐	☐	☐

31)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with Down's Syndrome please use this optional area to provide us with your reasoning.

Intoeing
In the questions below you will be presented with the collective choices and opinions from Round 2 concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition. (86%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section. (If you have no clinical experience in treating this condition, please move to the next condition)

32)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear children with Intoeing from Round 2. The median level of agreement and the relative distribution of response is detailed below. Stability footwear may be a suitable intervention for in-toeing if associated with tripping Median level of Agreement 4 (Neutral)

17% "Disagree", 17% "Somewhat Disagree", 41% "Neutral", 8% "Somewhat Agree", 17% "Agree",

Stability footwear may be a suitable intervention for in-toeing if associated with an underlying neurological condition
Median level of Agreement 4 (Neutral)
8% "Disagree", 8% "Somewhat Disagree", 26% "Neutral", 17% "Somewhat Agree", 33% "Agree",
8% "Strongly Agree"

No specific panellist feedback was given to inform any further modification of the statements. However, you may consider the distribution of the panel's response to either change or maintain your previous level of agreement with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear may a suitable intervention for intoeing if associated with tripping	☐	☐	☐	☐	☐	☐	☐
Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	☐	☐	☐	☐	☐	☐	☐

33)

Panellists were presented with the following options concerning the suitable age range for stability footwear intervention for intoeing in Round 2.
The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual). (73%)

Option 2, N/A I do not feel this condition is suitable for stability footwear intervention (27%) Option 3, 3 years onwards (0%) No specific panellist feedback was given to inform any further modification of these options. However, you may consider the distribution of the panel's response to either change or maintain your previous option.	
☐	Option 1 Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
☐	Option 2 N/A I do not feel this condition is suitable for stability footwear intervention.

10)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with intoeing in Round 2:
The median level of agreement and the relative distribution of response is detailed below.

Kinematics: Optimising gait movement patterns (Angle of Gait)
Median level of Agreement 5 (Somewhat Agree)
18% "Neutral", 37% "Somewhat Agree", 37% Agree, 8% Strongly Agree

Spatiotemporal: Increased walking velocity, 6MWT, TUG2
Median level of Agreement 5 (Somewhat Agree)
46% "Neutral", 18% "Somewhat Agree", 27% "Agree", 9% "Strongly Agree"

Gross Motor skill proficiency: Number of falls
Median level of Agreement 6 (Agree)
36% "Somewhat Agree", 46% "Agree", 18% "Strongly Agree"

QoL: Pain
Median level of Agreement 6 (Somewhat Agree)
27% "Neutral" 27% "Somewhat Agree", 46% "Agree"

QoL: ADL (daily mobility and social interaction)
Median level of Agreement 6 (Agree)
46% "Somewhat Agree", 46% "Agree", 8% "Strongly Agree"

There was minimal feedback in relation to modifying the outcomes, other than the suggestion that standing Foot Progression Angle (Fick Angle) may be compared with foot progression angle in gait. No specific panellist feedback was given to inform further modification of the other outcomes. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes

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

Kinematics: Optimising gait movement patterns (Angle of Gait). Comparison of standing foot progression angle with walking foot progression angle .	☐	☐	☐	☐	☐	☐	☐
Spatiotemporal: Increased walking velocity, 6MWT, TUG	☐	☐	☐	☐	☐	☐	☐
Gross motor proficiency: reduction in tripping	☐	☐	☐	☐	☐	☐	☐
QoL: Pain	☐	☐	☐	☐	☐	☐	☐
QoL: ADL (daily mobility and social interaction)	☐	☐	☐	☐	☐	☐	☐

11)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with Intoeing please use this optional area to provide us with your reasoning.

Additional Conditions:

A number of additional conditions were presented to the panellists in Round 2 based on suggestions made from panel members in Round 1.

Panellists were asked if they agreed with the suitability of stability footwear as an assistive aid for the suggested conditions.

The relative distribution of responses are detailed below,

(Panellists who had no clinical experience of the condition were discounted from the frequency calculation)

Charcot Marie Tooth, Hereditary Motor Sensory Neuropathy
Agree 92%, Neutral 0%, Disagree 8%
A consensus was reached for this statement

Hypermobility (Ehlers Danlos Type)
Agree 92%, Neutral 8%, Disagree 0%
A consensus was reached for this statement

Developmental Coordination Disorder
Agree 100%, Neutral 0%, Disagree 0%
A consensus was reached for this statement

Rett's Syndrome
Agree 80%, Neutral 0%, Disagree 20%
A consensus was reached for this statement

Foetal Alcohol Syndrome
Agree 50%, Neutral 0%, Disagree 50%

Accessory navicular
Agree 31%, Neutral 46%, Disagree 23%

Chronic lateral ankle instability
Agree 77%, Neutral 15%, Disagree 8%
A consensus was reached for this statement

Concerning the conditions below concerning their suitability for stability footwear clinical intervention.

36)

	I have no clinical experience with this condition	Disagree	Neutral	Agree
Foetal Alcohol syndrome	☐	☐	☐	☐

Accessory navicular	☐	☐	☐	☐

END OF SECTION 3 ROUND 3

Thank you for taking the time to complete section 3 of round 2. You have now completed all sections of round 2 of this Delphi survey. Your time and participation is greatly appreciated.
Remember to submit your answers before closing this form.