

# WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM? (SECTION2 ROUND 1)

The second section asks for your ideas and opinions on identifiable and or desirable design characteristics of "off the shelf" and modular clinical footwear interventions that offers stability to children with mobility impairment.

#### Section 2



Establishing identifiable and desirable design characteristics for "off the shelf"\* and modular\*\* footwear clinical interventions that offer stability to children with mobility impairment.

- \* Footwear taken from stock or supplies and not individually designed.
- \*\* Standard range of dimensional adaptations e.g. width, girth, (maximum 3) to stock upper.

This section consists of a series of ranked and open-ended questions concerning identifiable or desirable characteristics of standard "off the shelf" and modular clinical stability footwear interventions.

The information provided in this section was informed by a study of the design and dimensional characteristics of a sample of standard children's off-the-shelf footwear (EU size range 19-41\*) from a range of manufacturers that are currently marketed to offer stability to children with some form of mobility impairment.

We will ask you to rate your agreement with the findings of the characteristics identified from the sample. These will be in the form of a Likert scale where you will rank your level of agreement on a scale of 1 Strongly Disagree to Strongly Agree 7.

We will provide you with the opportunity to offer your opinion on these characteristics and to suggest their possible purpose to facilitate stability in children with mobility

impairment. You will also be free to suggest additional aspects you view as important and your reasons for this. All answers will be anonymised and will not be identifiable as your responses.

Example of answers to a series of questions concerning a specific area of "off the shelf" modular stability footwear.

Please rate your agreement with the following findings of the topline of "off the shelf" modular stability footwear.

1) "Off the shelf" and modular stability footwear should have an extended topline height

Agree (6)

2) "Off the shelf" and modular stability footwear should have a padded foam collar.

Agree (6)

3) Please provide your opinion and the possible purpose of these characteristics

#### Answer:

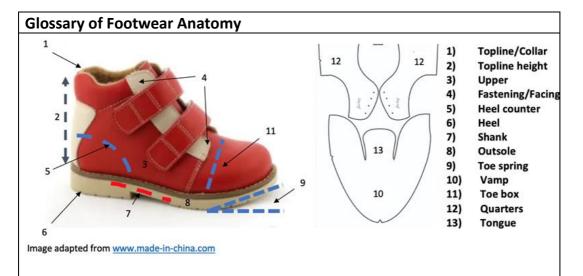
The topline should extend above the ankle. The purpose of this is to offer a degree of proprioceptive stability and increased leverage at the ankle and rearfoot. This has been shown to help in previous studies on the elderly. High topped shoes appear to improve stability in comparison to lower toplines on children in my clinical practice. The padding of the collar allows for a reduction of shearing during ambulation, enhancing the ergonomics of the shoe design.

Please note when answering the following questions we are asking you to consider the characteristics of standard stability footwear and not adaptations for specific clinical presentations.

Required Field \*

1)

Name: \*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region, Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.
- 10) Vamp: The area of the upper that covers the front part of the shoe,

- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

Top	line/	'col	lar



In the question below you will be presented with a series of findings in relation to the topline/collar of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

2)

<u> </u>							
The topline or collar should have the following characteristics: *							
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Extended							
topline							
height							
above							
ankle							
Foam							
padded							
collar							
Collar							
contoured							
to							
malleoli							
Collar							
contoured							
to Achilles							
tendon							
Pull tab to							
back of							
collar							

3

Please use this section to provide your opinion on the design characteristics of the topline/collar in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

Uppe	Ì
------	---



In the question below you will be presented with a series of findings in relation to the upper of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

4)

-	-1							
The upper s	hould have	the followi	ng characteri:	stics: *				
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly	
	Disagree		Disagree		Agree		Agree	
	1	2	3	4	5	6	7	
Leather								
material								
Tongue in								
line with								
topline								
Tongue								
extended								
above								
topline								

5

Please use this section to provide your opinion on the design characteristics of the upper in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

## **Fastening and Facing**



In the question below you will be presented with a series of findings in relation to the Fastening and Facing of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

6

<u>-,</u>	
The fastening	should have the following characteristics:
(You may sugg	est an alternative by typing your suggestion in the other option) *
	Velcro
	Lace
	No Preference
	Other

7)

	1					
	The facings sho	ould have the following characteristics:				
	(You may suggest an alternative by typing your suggestion in the other option)*					
		Facings extended to the midfoot				
		Facings extended to just behind the toe box				
Ī		No Preference				
ſ		Other				

8

Please use this section to provide your opinion on the design characteristics of the fastening and facing in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

Heel counter/stiffener
------------------------



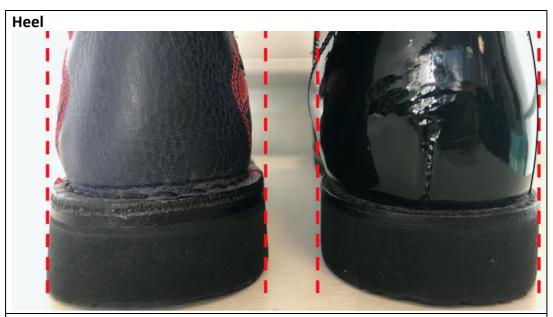
In the question below you will be presented with a series of findings in relation to the heel counter/stiffener of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

9)

The heel cour	The heel counter should have the following characteristics: *						
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Heel							
counter							
/stiffener							
extended to							
midfoot							
Heel							
counter/							
stiffener							
height							
extended							
towards							
topline.							

10

Please use this section to provide your opinion on the design characteristics of the heel counter/stiffener in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*



In the question below you will be presented with a series of findings in relation to the heel of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

11)

The heel shoul	The heel should have the following characteristics:				
(You may suggest an alternative by typing your suggestion in the other option)*					
	Heel width in line with heel counter width				
	Heel width extended wider than heel counter width				
	No Preference				
	Other				

12)

Please use this section to provide your opinion on the design characteristics of the heel in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

to the ur level of
ır level of
Strongly
Agree
7



In the question below you will be presented with a series of findings in relation to the heel counter/stiffener of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

15)

The sole unit	should have	the followi	ng characteri	stics: *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
A deepened							
tread							
Be made of							
hard							
wearing							
material							

16)

Please rank the degree of flexibility for the sole unit you feel would constitute a desirable										
characteristic of this clinical footwear intervention. *										
0	1	2	3	4	5	6	7	8	9	10
0-Comp	0-Completely flexible 10-Completely rigid									

17

Please use this section to provide your opinion on the design characteristics of the inlay in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

## Toe spring forefoot/heel rocker



In the question below you will be presented with a series of findings in relation to the toe spring/forefoot rocker and heel rocker of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

18)

*							
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear should have a reasonable forefoot rocker.							
Stability footwear should have a heel rocker.							

19)

Please use this section to provide your opinion on the design characteristics of the toe spring forefoot heel rockers in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable.\*

Strongly Disagree Disagree Agree Agree    Strongly Disagree Disagree Disagree Agree Agree Agree   1	modular stabil	ity footwea	r when con	sidering thes	e as a clini	ical intervent	ion:	
Strongly Disagree Somewhat Disagree Agree Agree Agree  1 2 3 4 5 6 7  The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
Disagree Disagree Agree Agree  1 2 3 4 5 6 7  The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	*	Strongly	Disagree	Somewhat	Noutral	Somewhat	Agree	Strongly
The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may			Disagree		Neutrai		Agree	
of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may			2		4		6	
stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	_							
mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	ппрантнене:		<u> </u>					
	change with th	ne age of the	e patient.*					

<b>Optional Further Inform</b>	nation
--------------------------------	--------

You may use this additional section to provide further suggestions that you feel are important characteristics of children's "Off the Shelf" and modular stability footwear.

Please remember to detail your answer where appropriate with the following information:

Constituents or area of the footwear

Material

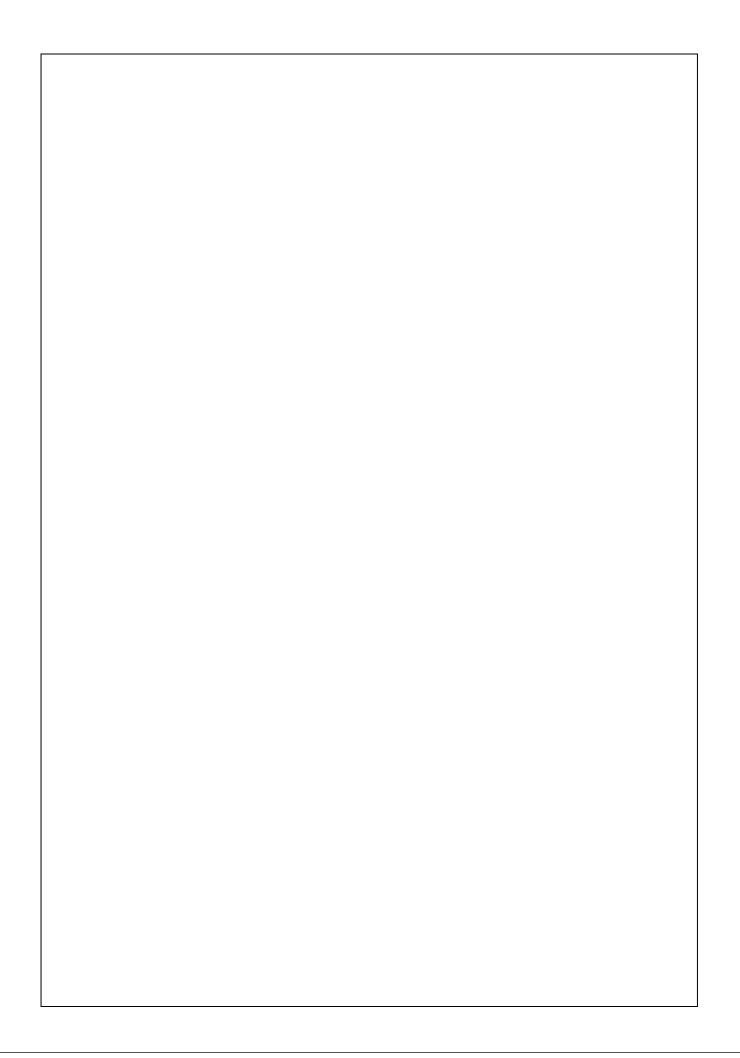
Shape or dimension

Degree of rigidity flexibility.

Purpose

า	า	١
_	/	ı
_	_	1

22)
Which other areas do you feel are important design characteristics of children's "Off the
Shelf" and modular stability footwear?





### END OF SECTION 2 ROUND 1

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

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



## ROUND 2(S2) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The second section will present the feedback of panellists opinions from Round 1 on the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

#### Section 2



Establishing desired design characteristics of "off the shelf" † stability footwear and the purpose of these as a clinical intervention for children with mobility impairment. †Footwear taken from stock or supplies and not individually designed.

The original statements provided from the study of a range of children's "off the shelf" stability footwear is listed alongside modified statements informed by the collective opinions gained from the panellists in round 1. The panel in this section consisted of 17 experts in the clinical provision of footwear for children with mobility impairment.

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

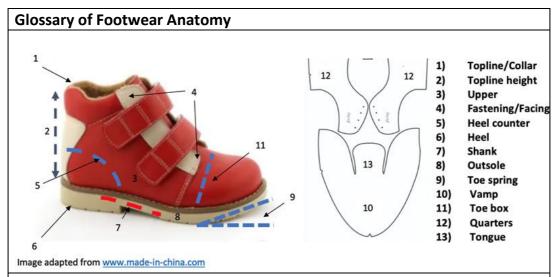
You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, You may maintain your position with your original statement or change your opinion and align yourself with the new statement

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

С	leau	irad	Fio	Ы	*
r	keau	ırea	ыe	a	•

1)

Name\*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region,
  Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.

- 10) Vamp: The area of the upper that covers the front part of the shoe,
- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

## Topline/collar



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the topline/collar of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

2

"Extended topline height above the ankle":

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

From panellist feedback, it was proposed the purpose of a topline extended above the ankle (supra-malleolar) increases proprioceptive input around the rearfoot and ankle in addition to assisting the leverage of the heel counters. This was thought to assist in reducing frontal plane movements at the foot and ankle. Other panellists suggested toplines extended above the ankle may adversely affect ankle plantarflexion and dorsiflexion power generation and limit mobility in some patients.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the topline height for stability footwear. \*

The topline should be extended above the ankle (Original)
The topline should not be extended above the ankle
The topline extension should come in an optional range both above and below the ankle dependent on the patient's ability and needs.
below the annual dependent on the patients about, and heads.

suggested from	Strongly	Disagree	Somewhat	Neutral		Agree	Strongly
	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
Purpose: An extended topline height increases proprioception input at the rearfoot and ankle							
Purpose: An extended topline height assists heel counter leverage to resist frontal plane movement of the rearfoot and ankle.							
Adverse Effect: An extended topline height may reduce sagittal plane power generation at the ankle.							

"agree". reached i				. 0		rity of
i caciica i	in Round 1	with respect	to this de	sign feature h	neing an	ideal
		With respect		3.6.1 Teatare x	zem g um	14041
	1.1					
			_			
					-	
		•				
ll - <b>f</b> -		. : the the feller	•			
			wing purp	ose or cnarac	teristic	suggested
Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
Disagree		Disagree		Agree		Agree
1	2	3	4	5	6	7
d to Malle	oli"					
l of agreer	ment amon	gst the pane	lists was '	agree" with t	the majo	rity of
"agree".						
reached i	n Round 1	with respect	to this de	sign feature b	eing an	ideal
ncue was	roachad a	a thic dasian	haractar:	ctic papallist	foodbaa	l <sub>r</sub>
ensus was	reached oi	n this design (	cnaracteri	stic paneilist	teedbac	K
	shear str nellists ind uld be cov level of a eedback of Strongly Disagree 1	shear stress to structure in the stress indicated that all the covered in a least of a padded strongly Disagree Disagree 1 2	shear stress to structures to the shellists indicated that foam paddir uld be covered in a low shear material level of agreement with the followeedback of a padded collar. *  Strongly Disagree Somewhat Disagree 1 2 3 1 1 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1	shear stress to structures to the sides and rellists indicated that foam padding may includ be covered in a low shear material.  Ilevel of agreement with the following purple edback of a padded collar. *  Strongly Disagree Somewhat Disagree 1 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	shear stress to structures to the sides and the back of the lelists indicated that foam padding may increase shear full be covered in a low shear material.  Ilevel of agreement with the following purpose or characted back of a padded collar. *  Strongly Disagree Somewhat Neutral Somewhat Disagree Agree  1 2 3 4 5  1 2 3 4 5  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	level of agreement with the following purpose or characteristic seedback of a padded collar. *  Strongly Disagree Somewhat Neutral Somewhat Agree Disagree 1 2 3 4 5 6  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Based on panell			•			esired de	esign
characteristic is	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	Disagree	Disagree	reaciai	Agree	7.8.00	Agree
	1	2	3	4	5	6	7
Design Characteristic: The foam padded collar should be							
covered with							
low shear							
material.							
From the feedborn partial level of a There was no feedborn purpose of the swould reduce sland Please consider desired design of footwear.*	agreement eedback to suggested of hear and co	other than suggest an characteristom pression ing options	a lack of rese ideal modifie tic, it was pro to the area. suggested by	earch to sued design of posed cor	upport the de characteristic ntouring to th s' feedback ir	sign ada . Concer ne Achillo n relation	nption. Ining the es tendon
	Collar cont	oured to A	chilles tendor	n (Original	)		
	Collar conte	oured to A	chilles tendor	n is not a d	desired design	n charac	teristic.

<b>'</b> )							
Please rank y					pose suggest	ed from	panellists
feedback of a	collar cont	oured to th	e Achilles ter	ndon. *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Contouring							
the collar to							
the Achilles							
tendon							
reduces							
shear and							
compression							
to the							
tendon.							
	TO BUCK OF C	ollar":					
responses be Panellist feed footwear; ho pull-tab to do Please consid	evel of agreing betwee lback sugge wever, a number stability for the followin character Pull tab t	ement among mement among mement among steed that the mber of particular continuity of a contin	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original	pull-tab w d that they by panellis or stability	vas to assist o v had never se sts' feedback v footwear.*	lonning c een a chi in relatic	of the Id use the
The median leresponses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the followin character Pull tab t	ement among mement among mement among steed that the mber of particular continuity of a contin	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original	pull-tab w d that they by panellis or stability	vas to assist o v had never so sts' feedback	lonning c een a chi in relatic	of the Id use the
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee Iback sugge wever, a number stability for the following character Pull tab to Pull tab to our level of	ement amount and memory of particular of a color back of c	to "agree".  The purpose of the purpose of the purpose of the pull tab follar (Original collar is not a continuous to the foll the following the pull tab following the purpose the purpose of the purp	pull-tab we that they by panellis or stability desired des	vas to assist o v had never se sts' feedback v footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to our level of a pull tab to	ement amount amount in "neutral" sted that the mber of participation of a color back of color back of color back of color back of color agreement the collar.*	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a contract with the foll as with the foll as a contract with the following with the following with the contract with the following with the contract with the contra	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee lback sugge wever, a number stability for the following character Pull tab to Pull tab to Strongly	ement amount and memory of particular of a color back of c	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a content of the following of the follow	pull-tab we that they by panellis or stability desired des	vas to assist o v had never se sts' feedback v footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to our level of a pull tab to	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a contract with the foll as with the foll as a contract with the following with the following with the contract with the following with the contract with the contra	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning of een a chi in relation ristic.	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the following character Pull tab to Pull tab to Strongly	ement amount amount in "neutral" sted that the mber of participation of a color back of color back of color back of color back of color agreement the collar.*	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a content of the following of the follow	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  Please rank y feedback of a	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Panellist feed footwear; ho pull-tab to do personal desired designation of the personal desired desire	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Panellist feed footwear; ho pull-tab to do personal desired designation of the personal desired desire	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Purpose: A collar pull tab aids the	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreeing between the sugge wever, a number stability of the following character and pull tab to strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree

1	•	٦	١
T	ι	J	ı

You may use this optional area to provide us with any further information to your responses on the topline/collar.

#### Upper



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the upper of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 11)

"The Upper should be constructed of leather:"

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

From panellist feedback, it was suggested that the purpose and advantages of leather material was that it adapts to foot structures over time and can enhance stability adaptions of the footwear through material stiffness. A number of panellists suggested that the upper should be available in optional materials, such as breathable materials for hot climates or sweaty feet, in addition, wipeable washable fabric for issues with incontinence.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the material of the upper for stability footwear.\*

Upper should be constructed of leather (Original)
Optional range of upper material to include; leather, breathable material
and wipeable material.

12)							
	•	_		llowing pu	rpose sugges	ted from	panellists'
feedback of				T	ı	Γ	1
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Leather							
adapts to							
foot							
structures							
over time							
Leather							
enhances							
material							
stiffness							
of the							
footwear							
40)							
13)	. 1: 1						
"Tongue to	topline rela	tionship:"					
UT :	lta a contala ala						
"Tongue in		•		من مانام م		: محمد محاط ما	
	_			neilists wa	s "agree" wit	п ше шај	ority of
responses t	being betwe	en neutrai	" to "agree".				
"Tongue ex	tandad aha	ua tanlina."					
_		•	eement with	tha madiar	a lovol		
		_			responses be	ing hotw	oon
"neutral" to	•	being agre	e with the h	ilajority of	responses be	ing betwe	2011
neutrai to	agiee.						
Panellist fee	edhack cond	erning the	tongue heing	in line wit	h the topline	suggeste	d that this
		•	•		n extended to		
					ested that an	_	
•					to pull up th		•
		-	•	•	sted that the	_	•
	_	_			and manual	-	-
3.104.4 50 0	ptional acp	criaming our c	ne patient s p		and mandar	uchter ity.	
Please cons	ider the foll	owing option	ons suggested	d by panell	ists' feedback	in relation	n to the
					tionship for st		
	-		-	•	ists' feedback	•	
					for stability fo		
			above topline				
			in line with to				
					ient's prefere	nce and i	manual
	dexteri		a a a a a a a a a a a a a a a a a a a	pac			
,	•						

Purpose: Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle	Disagree 1	2	Disagree 3		Agree		
Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle			3				Agree
Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle				4	5	6	7
line with topline is to minimise irritation to the anterior aspect of the ankle						Ш	
topline is to minimise irritation to the anterior aspect of the ankle							
minimise irritation to the anterior aspect of the ankle							
irritation to the anterior aspect of the ankle							
the anterior aspect of the ankle							
aspect of the ankle							
the ankle							
Purpose:							
Tongue							
extended							
above							
topline							
allows for							
comfort							
with lacing							
Purpose: Tongue						Ш	
extended							
above							
topline							
allows the							
wearer to							
minimise							
slippage of							
the tongue							
under the							
fastenings							
during wear							
weai							
5)							
From panellis	t feedback	other sugg	estions for th	ne upper d	esign were o	ffered th	ese
included:		00	•		Ü		
An option for	an open u	pper in the	form of a hig	h topped	sandal for sta	ndard st	ability
An option for footwear ran				topped	sandal for sta	ndard st	ability

Please rank yo further desired							
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
High topped candals to be offered as an option for ctability cootwear ranges for warm							
ergonomic consideration of internal seams to reduce skin rritation							
Sit or loop in ongue for astening to minimise ongue							
6) You may use tl responses on t		area to pro	ovide us with	any furth	er informatio	n to you	ır

## **Fastening and Facing**



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Fastenings and Facings of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 17

"The type of fastenings"

Most panellists (53%) choose "other", next was Velcro (23%), no preference (18%) and lace (6%).

Those panellists that chose the other option suggested that the chosen fastenings be optional depending on the ability of the child or the desired therapeutic goal (e.g. Velcro for limited hand dexterity to enhance independence, lace if greater stability is required).

From panellist feedback Velcro fastenings were proposed to assists with independence making it easier for children to don/doff the shoes. A number of panellists proposed that lace fastenings allowed a firmer grip to the contours of the foot to enhance the stability offered by the shoe.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the type of fastenings for stability footwear.\*

Velcro (Original)
Lace (Original)
No Preference (Original)
Optional dependent on patient's ability and desired goal (e.g. Velcro for
limited hand dexterity, lace for greater stability)

18)							
Please rank you		_	with the follo	wing purp	ose suggeste	d from p	oanellists'
feedback for th			C	Nantonal	C		Character all a
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	Agree 5	6	7
Purpose of Velcro fastenings: Assists independenc e with limited							
hand dexterity in donning and doffing							
Purpose of lace fastenings: Enhances stability through potential firmer grip to contours of the foot							
19)							
"Position of the Most panellists 18% suggested From panellist access into the facings extende Similar to the fa should be offer therapeutic role	(47%) chood "facings ex feedback fat footwear wed to the mastenings at ed in an ope. Extended	cings exter vith patient idfoot allov number of tional rang I to the toe	the midfoot"  anded to the to as who had lir and the uppe be panellists fel box for limite	and 12% I be box we mited foot r to offer t the facir on the ab	nad no prefer re suggested and ankle Ro greater stabil ngs of stability ility of the pa	to allow DM. Who lity. y footwe atient an	greater ereas ear d desired
extended to the	the follow	ing options	suggested b	y the pane			
the desired des	_		-		gs for stabilit	y footwe	ear.*
=			e midfoot (O		Original)		
	-acings exte No Preferer		st behind the	: roe pox (	Original)		
<u> </u>	NO FIEIEIEI	ice (Origina	ai <i>)</i>				

20)							
flease rank feedback of				llowing pu	irpose sugges	ited fron	n panellists'
TCCUBACK OF	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose: Facings extended to just behind the toe box allows greater access into the footwear for the child with limited foot and ankle range of motion							
Purpose: Facing extended to the midfoot allows the upper to offer greater stability to the foot and ankle.							

were the gab t	_		•		to the facing n adequate r		_
adjustment.			a 55 55 ag				
A side zip alon	g the rearf	oot was sug	ggested along	gside a lac	e fastening to	allow e	asy
donning and d	_				_		
Please rank yo	ur agreem	ent with th	e following p	anellists' s	uggestions in	relation	n to
further desire	d design ch	aracteristic	s for the fast	enings and	d facings of st	tability fo	ootwear.*
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
The gap							
between							
facings							
should allow							
an adequate							
range of							
fastening							
adjustment.							
Side zip lace							
combination fastening							
2)							
You may use t	his optiona	l area to pr	ovide us with	anv furth	ner information	on to voi	ur
responses on f				•		•	
							_

#### Heel counter/stiffener



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Heel Counter/Stiffener of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

23

The heel counter/stiffener extension

"Heel counter/stiffener extended to midfoot:"

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

"Heel counter/stiffener extended towards the topline."

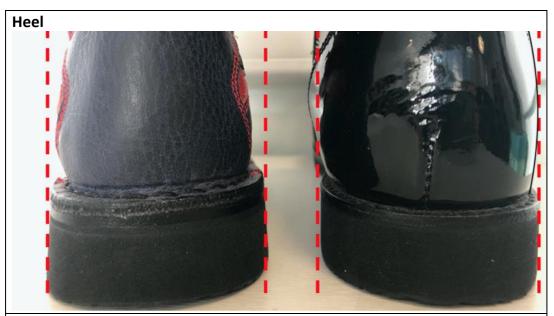
The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses being between "somewhat agree" to "agree".

From panellist feedback, it was suggested that this was one of the most important design characteristics to enhance the stability of this footwear. It was thought the material stiffness of the counter and its extension could resist frontal plane movements of the foot and ankle and the midfoot if extended to this region. It was also suggested that this design feature can enhance proprioception at the rearfoot and ankle. Some panellists suggested that heel counters should come in a range of extensions both in length and height dependent on the therapeutic need (high to moderate stability) and to account for any impingement on the varied foot and ankle anatomy of patients.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the heel counter/ stiffener extensions for stability footwear.\*

Heel counter/stiffener extended to the midfoot only
Heel counter/stiffener extended towards the topline only
Heel counter stiffener, extended to the midfoot and towards topline

ease rank your level of agreement with the following purpose suggested from panellists' redback of the heel counter/stiffener:*    Strongly Disagre e   Tolsagree   Tolsagree				counter exter		pendent on t	herapeı	utic need
ease rank your level of agreement with the following purpose suggested from panellists' sedback of the heel counter/stiffener:*    Strongly   Disagre   Disagre   E   Disa	ani	u tile patie	111 3 1001 ai	iu alikie alia	LOTTIY			
ease rank your level of agreement with the following purpose suggested from panellists' sedback of the heel counter/stiffener:*    Strongly   Disagre   Disagre   E   Disa	)							
Strongly Disagre e t Disagree l L Agree e l VAgree e VAgree e l L Agree e VAgree e L Disagree e	•	evel of agr	eement wi	th the follow	ing purpo	ose suggeste	d from p	oanellists'
Disagre e t Disagree I t Agree e y Agree  1 2 3 4 5 6 7  Durpose: Heel counter/stiffene extensions can chance roprioception the foot and chale counter/stiffene extension ffers material iffness to extension ffers material information to your counter or considered and midfoot extension rofile.					0	00		
Disagre e t Disagree I t Agree e y Agree  1 2 3 4 5 6 7  urpose: Heel counter/stiffene extensions can chance roprioception the foot and chale urpose: Heel counter/stiffene extension ffers material iffness to extension strict frontal contents at the foot, ankle and midfoot expendent on the extension rofile.		Strongly	Disagre	Somewha	Neutra	Somewha	Agre	Strongl
1 2 3 4 5 6 7  urpose: Heel punter/stiffene extensions can hance roprioception the foot and hkle urpose: Heel punter/stiffene extension ffers material iffness to estrict frontal ane lovements at the foot, ankle hd midfoot ependent on the extension rofile.			е	t Disagree	1	t Agree		y Agree
curpose: Heel		е						
punter/stiffene extensions can whance roprioception to the foot and while unpose: Heel punter/stiffene extension ffers material iffness to estrict frontal dane ropovements at the foot, ankle mid midfoot ependent on the extension rofile.  The foot and the foot and the foot and the foot ankle the foot, ankle the foot ankle the foot and the foot ankle		1	2	3	4	5	6	7
extensions can chance roprioception at the foot and chalce counter/stiffene extension ffers material diffness to estrict frontal dane covements at the foot, ankle and midfoot expendent on the extension rofile.	urpose: Heel							
chhance roprioception to the foot and chkle curpose: Heel	ounter/stiffene							
roprioception to the foot and hkle urpose: Heel unter/stiffene extension ffers material iffness to estrict frontal dane dovements at the foot, ankle and midfoot ependent on the extension rofile.								
the foot and hkle  urpose: Heel  urpose: Heel  unter/stiffene extension  ffers material iffness to estrict frontal ane ovements at he foot, ankle hd midfoot ependent on he extension rofile.  under may use this optional area to provide us with any further information to your								
nkle  urpose: Heel  urpose: Heel  unter/stiffene extension  ffers material iffness to estrict frontal ane ovements at he foot, ankle hd midfoot ependent on he extension rofile.  under may use this optional area to provide us with any further information to your								
purpose: Heel punter/stiffene extension ffers material iffness to estrict frontal ane aovements at the foot, ankle and midfoot ependent on the extension rofile.  Dumay use this optional area to provide us with any further information to your								
ounter/stiffene extension  ffers material  iffness to  estrict frontal  ane  ovements at  ne foot, ankle  nd midfoot  ependent on  ne extension  rofile.   ou may use this optional area to provide us with any further information to your								<u> </u>
extension  ffers material  iffness to  estrict frontal  ane  lovements at  ne foot, ankle  nd midfoot  ependent on  ne extension  rofile.   ou may use this optional area to provide us with any further information to your								
ffers material iffness to estrict frontal lane lane lane land midfoot ependent on the extension rofile.								
iffness to estrict frontal lane lovements at he foot, ankle hd midfoot ependent on he extension rofile.  Du may use this optional area to provide us with any further information to your								
estrict frontal lane lane lane lane lane lane lane la								
ane lovements at lee foot, ankle lee foot, ankle lee foot, ankle lee foot, ankle lee extension rofile.  Du may use this optional area to provide us with any further information to your								
provements at the foot, ankle and midfoot dependent on the extension dependent of the extension depend								
ne foot, ankle and midfoot ependent on the extension profile.  Du may use this optional area to provide us with any further information to your								
nd midfoot ependent on ne extension rofile.  Du may use this optional area to provide us with any further information to your								
ependent on ne extension rofile.  Du may use this optional area to provide us with any further information to your								
pu may use this optional area to provide us with any further information to your								
) ou may use this optional area to provide us with any further information to your	ne extension							
ou may use this optional area to provide us with any further information to your	rofile.							
ou may use this optional area to provide us with any further information to your								
sponses on heel counter/stiffener.				ide us with a	ny furthe	r informatior	ı to you	r
	esponses on hee	l counter/s	tiffener.					



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Heel of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 26

"Heel width in relation to the heel counter"

The majority (47%) felt that the heel should be extended wider than the heel counter followed by 23% who felt it should be in line, the remaining 30% chose no preference or other.

Feedback from the panellists suggested that the purpose of an increased heel width allowed greater medial-lateral stability. Panellists suggested that a welted sole construction provided a slight width increase from standard retail footwear. Others suggested that wider heels affect aesthetics and the mass of the shoe or potentially cause weakening to the upper and sole adhesion. Other feedback stated that heel width extension needs to be quantified and come in a range of prescriptive adaptions (heel float) dependent on clinical need rather than a standard characteristic.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the heel to heel counter width relationship for stability footwear.\*

Heel width in line with heel counter width (Original)
Heel width extended wider than heel counter width (Original)
No preference (Original)

	with the		ons should be extension or ted seam.				
	1110101						
7)							
	•	_	nt with the fo	llowing pu	irpose sugge:	sted from	n panellists'
feedback of	an extende	d heel widt				_	•
	Strongly	Disagre	e Somewha	t Neutra	I Somewha	t Agree	Strongly
	Disagree	<u>ڊ</u>	Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Heel width							
extensions							
assist							
medial-							
ateral							
stability of							
he foot and	t l						
ankle							
hrough an							
ncreased							
oase of							
support							
8)							
Other heel o	design cons	iderations s	suggested by	the panell	ists were the	heel pito	ch; heel
oitch should	l not be so l	nigh as to ir	mpart instabil	ity at the	ankle or be ir	compati	ble with
the fitting o	f adjunct or	thotic ther	ару:				
Please rank	your agree	ment with t	the following	•			n to
Please rank	your agree	ment with t		•			n to
Please rank	your agreer red design of Strongly	ment with t	the following tics for the he	•		.*	on to Strongly
Please rank	your agree red design (	ment with t	the following	el of stabi	lity footwear	:* Agree	
Please rank Further desi	your agreer red design of Strongly	ment with t	the following tics for the he	el of stabi	lity footwear Somewhat	:* Agree	Strongly
Please rank Further desi	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle nstability	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle nstability Heel pitch	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch should not ncrease ankle nstability Heel pitch	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch should not ncrease ankle nstability Heel pitch should allow for	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree

You may use this optional area to provide us with any further information to your responses on the heel

## Inlay



In the questions below, you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Inlay of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

30

The inlay should have the following characteristics:

"Stability footwear should come with a standard removable inlay."

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

Consensus was reached on this design feature in Round 1.

"The inlay should be contoured to simulate the medial longitudinal arch."

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

From panellist feedback, it was suggested that a removable inlay would allow for soft covering over the inner base layer of the sole and be thick enough to allow replacement with a prescriptive foot orthotic device if required. The majority of panellists did not feel contouring to the arch was necessary as this not be representative of an early walkers foot; however, panellists did suggest contouring to the heel cup to improve rearfoot fitting in the footwear.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the inlay for stability footwear.\*

The inlay should be contoured to simulate the medial longitudinal arch
(Original)

Disagree Disagree Agree Agree 1 2 3 4 5 6  Removable Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting	
to cup the heel  1)  Please rank your level of agreement with the following purpose suggested from page feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Agree	anellists' trongly agree
Please rank your level of agreement with the following purpose suggested from particle feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Agree	trongly agree
Please rank your level of agreement with the following purpose suggested from particle debtack of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Agre	trongly agree
Please rank your level of agreement with the following purpose suggested from particle debtack of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Agre	trongly agree
feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Ag	trongly agree
Strongly Disagree Disagree Disagree Agree Agree Agree Agree Disagree Disagree Disagree Agree Agree Agree Agree Agree Agree Disagree Disagree Disagree Agree	gree
Disagree Disagree Agree A  Removable Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  Disagree Disagree Agree Agree A  A prescriptive   Disagree Agree Agree A  A pagree Agree	gree
Removable	
Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  32)  You may use this optional area to provide us with any further information to your	
should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay	
thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  You may use this optional area to provide us with any further information to your	
enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  You may use this optional area to provide us with any further information to your	
allow for a potential prescriptive foot orthoses.  An inlay	
potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  You may use this optional area to provide us with any further information to your	
prescriptive foot orthoses.  An inlay	
foot orthoses.  An inlay	
orthoses.  An inlay	
An inlay contoured to cup the heel improves rearfoot fitting    You may use this optional area to provide us with any further information to your	
contoured to cup the heel improves rearfoot fitting	
to cup the heel improves rearfoot fitting 32)  You may use this optional area to provide us with any further information to your	Ш
heel improves rearfoot fitting 32)  You may use this optional area to provide us with any further information to your	
rearfoot fitting 22) You may use this optional area to provide us with any further information to your	
fitting 22) You may use this optional area to provide us with any further information to your	
32) You may use this optional area to provide us with any further information to your	
You may use this optional area to provide us with any further information to your	
You may use this optional area to provide us with any further information to your	
responses on the imay.	



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the sole unit of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 33)

The sole unit should have "A deepened tread"

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

Panellist feedback suggested that a deepened tread allows for greater traction over different terrains however it may also be a trip hazard especially with low ground clearance in some mobility impairments.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the tread depth for stability footwear.\*

	A deepened tread (Original)
	The tread depth should come in an optional range dependent (on the
	ability of the child and the environment where the footwear is to be used.

#### 34

The sole unit should: "Be made of hard-wearing material"

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

Panellist feedback suggested the benefit of a hard-wearing sole unit is that it would resist abnormal sole wear from pathological gait and prolong the stability effect of the footwear. Other suggestions indicated that hard-wearing soling material may not be so important for younger children as growth would entail replacement before significant wear. There was also the suggestion that hard-wearing soling material may increase walking effort in early walkers.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the wear resilience of the sole material for stability footwear.\*

	Hard-weari	ng materia	l (Original)				
	Optional w ability of th		ce of the sole	material	dependent o	n the ag	e and
	j diamety or en	рассолог					
5)							
		_	terial please i	-	_	ement w	ith the
following pur			uggested fron			Т	T
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Hard							
wearing							
sole							
material will orolong the							
stability							
effect of the							
ootwear by							
resisting							
wear							
patterns							
associated							
with gait							
oathologies.							
5)	6.61						
-	of flexibility"			1.0			1.
			pletely rigid a				
	ility amongst	tne panei	was 6 with th	e majority	y of values fai	ling bet	ween 5
nd 7.							
Panellist feed	hack suggest	ed that alt	hough a rigid	sole may	enhance stah	ility fle	vion of
			) is a requisite	•		•	
		•	of the foot. It			•	
•		•	he ability of t				
,			,				
Please consid	er the follow	ing options	s suggested b	y the pane	ellists' feedba	ck in rel	ation to
the desired d	esign charact	eristic of th	ne sole unit fl	exibility fo	or stability fo	otwear.*	k
			ome in a rang				
	patient's al	ility or the	therapeutic a	goals, with	h flexibility of	the sole	focused
	at the MPJ	area					
	Other: (Ple	ase state)					

That the rearf	foot to foref	not sole wic	th should ha	kent to th	ne lowest nra	ctical ra	tio to
manage medi				kept to ti	ie iowest pra	cticai i a	tio to
That the sole		•		and rearfo	oot to assist s	tability i	in these
regions							
Please rank your agreement with the following panellists' suggestions in relation to							
further desire		1					T
	Strongly	Disagree	Somewhat	Neutral		Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Rearfoot to							
Forefoot							
width of the							
sole unit							
kept to							
lowest practical							
ratio to							
assist							
medial-							
lateral							
stability							
The sole			П				
unit should							
be stiffer at							
the midfoot							
and							
rearfoot to							
assist							
stability in							
these							
regions.							
٥١							
88) You may use t	thic ontional	area to pro	wido us with	any furth	or information	2 to vou	r
responses on	•	•	Mide us With	ally fultile		i to you	ı
responses on	the sole unit						

# Toe spring forefoot/heel rocker



In the questions below, you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Toespring forefoot/heel rocker of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

39)

"Stability footwear should have a reasonable forefoot rocker."

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

Panellist feedback suggested that forefoot rockers should come in a range depending on the patient's condition from increased in Charoct Marie Tooth to avoid tripping in propulsion and swing, to reduced in conditions such as Idiopathic toe walking to reduce the 3rd rocker (MPJ) loading. It was pointed out a range of forefoot rockers would also be required dependent on the stiffness of the sole. Panellists suggested the purpose of an appropriate rocker was to facilitate sagittal progression in propulsion without impacting on stability and also allowing for adequate ground clearance in swing phase.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the forefoot rocker for stability footwear.\*

Stability footwear should have a reasonable forefoot rocker. (Original)
Stability footwear should come in a range of forefoot rockers dependent
on the patient's condition and the stiffness of the sole.

In relation to t							
			ise rank your			h the fo	llowing
purpose or cha						П	T .
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree		Agree	-	Agree
D (	1	2	3	4	5	6	7
Purpose of forefoot							
rocker:							
Should							
facilitate							
forward							
progression							
in terminal							
stance							
without							
impacting on							
stability							
Design							
characteristic							
of forefoot							
rocker:							
Should allow							
adequate							
ground							
clearance in							
swing							
1)							
1) "Stability footy	wear should	have a hor	al rocker "				
Stability 100th	wcai siiUulU	nave a net	.i i UCKEI.				
The median le	vel of agree	ment amor	gst the nane	llists was '	'neutral" witl	h the ma	iority of
responses beir	_		-				.,011.01
	6						
Panellist feedb	ack suggest	ed that a h	eel rocker ma	ay speed u	up the 1st roc	ker and	cause
instability duri							
heel rockers sh	nould be off	ered as a so	ole adaption	prescriptio	on dependen	t on the	child's
condition rath	er than a sta	andard desi	gn.				
Please conside							ation to
the desired de	sign charact	eristic of th	ne heel rocke	r for stabi	lity footwear.	.*	
	Stability for	ntwear sho	uld have a he	el rocker	(Original)		

			e offered as a n rather than			-	
42)					J	,	
You may use the responses on t	•	•		any furthe	er informatio	n to you	r
,	1 0	•					
Weight of th	e footwe	ar .					
Weight of the		41					
In the question the findings from	•	•			•	•	
options offere			_				
purpose of the	se design ch	aracteristi	cs:				
20)							
"The weight of	•		n important c	onsiderat	ion when issu	uing foot	wear to
children with r			gst the nane	llists was '	'agree" with	the mair	ority of
responses beir	_	nent amor	igst the pane	msts was	agree with	the maje	ority of
Consensus was	s reached in	Round 1 w	ith respect to	this bein	g an importa	nt desig	n
characteristic.							
Panellist feedb	ack suggest	ed that the	footwear sh	ould be th	e lowest rea	sonable	mass to
reduce physiol							
of the child an							•
features assoc		_					
conditions mig sturdier footw							
requiring lighte							
stance and the	•		-		•		
weight of stab	ility footwea	r by childr	en might be o	lue to its s	stiffness rath	er than t	he actual
mass.							
The following	design consi	derations i	n respect to t	he weight	of stability f	ootwear	and its
purpose have	_			_			
these.*						T .	
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should be the							
lowest reasonable							
· casonasic						l	<u> </u>

mass to				
reduce				
physiological				
cost during				
mobility.				
The mass of				
the shoe				
should be				
dependent				
on the mass				
and age of				
the child.				
The mass of				
the shoe				
should be				
dependent				
on the child's				
stability				
needs.				
Purpose of				
increased				
mass: Assist				
stability in				
stance				
Purpose of				
increased				
mass: Assists				
pendular				
motion in				
swing				

You may use this optional area to provide us with any information for your responses on the weight of the footwear.

<b>Further Des</b>	ign Consid	erations							
	The following section provides additional design considerations for "Off the Shelf"								
Stability footw	ear suggest	ed by the p	anellists.						
45)									
Children's "Of	f the Shelf" s	stability foo	twear should	come in	a range of las	t dimen	sions to		
accommodate	proportion	al differenc	es in foot typ	es.	_				
Please rank yo desired design	_				iggestion in r	elation t	o further		
acsirca acsigi	Strongly	Disagre	Somewha	Neutra	Somewha	Agree	Strongl		
	Disagre	e	t Disagree	I	t Agree	7.6100	y Agree		
	e		t Dioagree		7 .g. cc		77.8.00		
	1	2	3	4	5	6	7		
Children's						П	П		
stability									
footwear									
should be									
available in a									
range of last									
dimensions to									
accommodate									
different foot									
types.									
4.6									
Children's "Off	. + h - Ch - If!! -			l		laa a.a	م ماريد		
Children's "Off		•	twear should	come in	a range of co	iours and	a styles		
to appeal to cl	iliaren s pre	rerences.							
Please rank yo	ur agreeme	nt with this	design featu	re sugges	ted from the	panellist	ts'		
feedback.*		1	T .	ı .	Γ	ı	T .		
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly		
	Disagree	_	Disagree	_	Agree	_	Agree		
0. 1.00	1	2	3	4	5	6	7		
Stability									
footwear									
should come									
in a range of									
colours and									
styles to appeal to									
children's									
Ciliui eli 3		ĺ				l			

47) You may use thi	is optional area to prov	ide us with any info	ormation for your r	esponses.



## **END OF SECTION 2 ROUND 2**

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

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



# ROUND 3(S2) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The second section will present yours and the panellists' collective choices and opinions from Round 2 on the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

## Section 2



Establishing desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

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

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 the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment. You will again be asked to give your preferential option or your level of agreement or non-agreement with them ("Strongly Disagree" to "Strongly Agree").

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

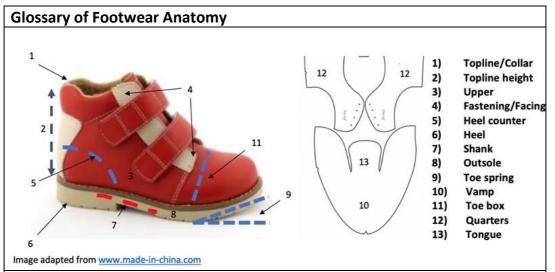
Full consensus for a statement is reached when a statement gains  $\geq$ 75% of panellists with a level of agreement of "agree" or above, or  $\geq$  75% of panellists preferred option.

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

Rea	uired	Field	*
neu	uneu	rieiu	

1)

Name\*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region, Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.
- 10) Vamp: The area of the upper that covers the front part of the shoe,

- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

# Topline/collar



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the topline/collar of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

2

rom Round 2 panellists were presented with a series of options from suggestions from the panel and the original study of stability footwear in relation to the height of the topline. The relative frequency of response is detailed below:

Option 1: The topline extension should come in an optional range both above and below the ankle dependent on the patient's ability and needs. (93%)

Option 2: The topline should be extended above the ankle (Original) (7%)

Option 3: The topline should not be extended above the ankle (0%)

A Consensus was reached to Option 1.

Panellist feedback suggested that it was difficult to recommend standard design as different foot types (pes planus, pes cavus) will affect the efficacy of the topline and collar options

3)										
Panellists were a	asked to rai	nk their agr	eement with	the follow	ving purpose	and pot	ential			
adverse effects		•								
The median leve	el of agreen	nent and re	lative distrib	ution of re	esponse is de	tailed be	elow.			
Purnose: Extend	led tonline	increases r	ronriocentio	n at the Fo	not and Ankle	د				
Purpose: Extended topline increases proprioception at the Foot and Ankle Median level of Agreement 5 ("Somewhat Agree")										
20% "Neutral", 33% "Somewhat Agree", 40% "Agree", 7% "Strongly Agree"										
Purpose: Extend	led topline	assist heel	counter leve	rage to res	sist frontal pl	ane mot	ion at foot			
and ankle		C /!! A !	11							
Median level of 13% "Neutral", 3	•	. •	•	o" 120/ "	Strongly Agra	·o"				
15% Neutral,	54/0 SUITE	wiiat Agiet	= ,40/0 Agre	;∈ ,13% 3	on ongry Agre	:C				
Adverse Effect:	An extende	d topline h	eight may red	duce sagit	tal plane pov	ver gene	ration at the			
ankle		•	,	J		J				
Median level of	Agreement	5 ("Somev	vhat Agree")							
7% "Somewhat	Disagree", 2	20% "Neuti	ral", 40% "Soı	mewhat A	gree"					
13% "Agree", 20	% "Strongly	y Agree"								
Dan alliat Facalla			+:-! ·	ام امانیما کا	مام م میں مارین	ما ماريم الم	. limaika d			
Panellist Feedba peer-reviewed e		•	_		•		imitea			
The research tea				_			inical			
research but we			•	•						
the perceived ro		•		a. 5 6. 6	icai experient	oc ana c	Apertise as to			
Based on your c	•	•	se rank your	level of ag	greement wit	h these	proposed			
purposes of an e						ı	Г.			
		Disagree		Neutral	Somewhat	Agree	Strongly			
	Disagree	2	Disagree	4	Agree	-	Agree			
Purposo: An	1	2	3	4	5	6	7			
Purpose: An extended										
topline height										
may increase										
proprioception										
input at the										
rearfoot and										
ankle.										
Purpose: An	$   \sqcup   $									
extended										
topline height										
may assist heel counter										
leverage to										
ieverage tu		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>			

Based on your of purposes of a fo	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	4	Agree 5	Agree 6	Strongly Agree 7
•	Strongly Disagree		Disagree		Agree		Agree
•	Strongly	Disagree		Neatrai		Agree	<b>.</b>
•	•		Camanuhat	Neutral	Somewhat	A	
Based on vour c	•	d collar.*					
	linical expe	erience plea	ase rank your	level of a	greement wit	th these	proposed
to the perceived	d role of th	is design ac	laption.				
research but we			•	•			
will affect the ef The research te	•	•	•		ntific or stru	ctured d	inical
was difficult to i	recommen	d standard	design as diff	ferent foo			•
limited peer-rev	_						
Panellist Feedba	ack again c	iaaested +h	nat nartial agr	reement c	ould only be	reached	due to
20% "Strongly A					-		
7% "Disagree", :	_		•	ree", 33%	"Agree"		
Purpose Foam p Median level of	_			n trom an	extended top	line hei	ght.
D 5		la		· · · ·		itia I i	-1-1
13% "Neutral",	-		•	ee", 20% "	Strongly Agre	ee"	
Design Characte Median level of				i with IOW	sneer materi	aı	
Design Characte	ristic: Egg	m Daddod o	ollar covered	Lwith low	cheer materi	اد	
The median leve			ne relative di	stribution	of response i	is detaile	ed below.
The panellists w foam padded co	•		ie ioliowing C	iesign cna	racteristic an	u purpo	SE OI d
'Padded collar"	oro proces	+04 441+6 +6	o following s	locian cha	ractoristic an	d nurna	so of a
)							
· · · · · · ·	1	1	ı		ı	1	1
the ankle.							
power generation at							
sagittal plane							
may reduce							
topline height							
Effect: An extended							
Adverse							
and ankle.							
the rearfoot							
plane movement of							

should be covered with low shear material.							
Purpose:							
Foam Padding	5						
may reduce							
compression							
to lower limb							
anatomy from	1						
an extended							
topline							
height.							
5)							
The panellists	were prese	ented with	the following	purpose t	to the contou	iring of t	he topline
to the ankle re	egion in Ro	und 2					
The median le	vel of agre	ement and	relative distr	ibution of	response is	detailed	below.
Purpose: cont	ouring of to	opline redu	ces compres	sion and sl	heer to ankle	region.	
Median level	-		-				
13% "Somewh	_	e", 7% "Nei	utral", 20% "S	Somewhat	Agree", 47%	"Agree'	', 13%
"Strongly Agre	ee"						
Panellist Feed	_		•	-	•		
limited peer-r				•	· ·	•	
acknowledge	_		ical structure	s above o	r below the a	nkle imp	roves
tolerance fit a		_			_		
The research t			•	•			
research but v				years of cl	inical experie	ence and	expertise as
to the perceiv	ed role of t	his design	adaption.				
Based on your	clinical ex	perience pl	ease rank yo	ur level of	agreement v	vith thes	e proposed
purposes of a	contoured	topline.*					
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:				$  \; \sqcup \;  $			
Contouring							
of topline							
may reduce							
shear and							
compression							
stress to the							
ankle							
region.							

The panellists were presented with the following options in relation to the contouring of the collar to the Achilles tendon in Round 2

The relative distribution of response is detailed below:

Option 1: Collar contoured to Achilles tendon (Original) (80%)

Option 2: Collar contoured to the Achilles tendon is not a desired design characteristic (20%)

A Consensus was reached to Option 1.\*

7

The following purpose was presented to the panellists in Round 2 in relation to contouring the collar to the Achilles tendon.

The median level of agreement and relative distribution of response is detailed below.

Purpose: Contouring the collar to the Achilles tendon reduces shear and compression to the tendon.

Median level of Agreement 6 (Agree)

13% "Neutral", 27% "Somewhat Agree", 53% "Agree", 7% "Strongly Agree"

Panellist Feedback again suggested that partial agreement could only be reached due to limited peer-reviewed evidence to support the purpose. However, some panellists did acknowledge contouring to anatomical structures above or below the ankle improves tolerance fit and comfort.

The research team appreciates that there is a paucity of scientific or structured clinical research but we would ask you to consider your years of clinical experience and expertise as to the perceived role of this design adaption.

Based on your clinical experience please rank your level of agreement with these proposed purposes of a topline contoured to the Achilles tendon.\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Contouring							
the collar to							
the Achilles							
tendon may							
reduce shear							
and							
compression							

				1		1	T
to the							
tendon.							
3)							
The panellist	s were pres	ented with	the following	options ir	n relation to t	he pull ta	ab at the
back of the c	ollar in Rou	nd 2					
0 11 4 5 1			0 : : 1) = 20/				
Option 1: Pul			_		haracteristic	A70/	
Option 2. Pu	ii tab to bac	K OI COIIdi I	s not a desire	u design c	naracteristic -	4/70	
Panellist feed	dback sugge	ested that th	he pull tab ma	av aid the	child or those	offering	assistan
to the child i			- 1	,			,
The pull tab	may inadve	rtently assis	st sliding of a	n AFO into	the boot.		
Please consid	_						
			ollar (Origina				
	Pull tab t	to back of co	ollar is not a	desired de	sign characte	ristic.	
9)							
The fellowing	7 DUEDOCO 11	ios prosonti	ad ta tha nan	allists in D	aund 2 in rals		ما اليم ما
The following			ed to the pan	ellists in R	ound 2 in rela	ation to t	he pull ta
to the back o	f the collar	•					
	f the collar	•					
to the back of the median l	of the collar evel of agre	eement and	relative distr	ibution of	response is c		
to the back o	of the collar evel of agre collar pull tal	eement and b aids the cl	relative distr	ibution of	response is c		
to the back of The median I Purpose: A co Median level	of the collar evel of agree ollar pull tal of Agreem	eement and b aids the cl ent 5 ("Som	relative distr	ribution of ng the shoe ")	response is o		
to the back of The median I Purpose: A co Median level	of the collar evel of agre ollar pull tal of Agreem e", 33% "Ne	eement and b aids the cl ent 5 ("Som	relative distr hild in donnir newhat Agree	ribution of ng the shoe ")	response is o		
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly	of the collar evel of agre ollar pull tal of Agreem e", 33% "Ne Agree"	eement and b aids the cl ent 5 ("Som utral", 26%	relative distr hild in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27	response is o	letailed b	pelow.
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen	of the collar evel of agre ollar pull tal of Agreem e", 33% "Ne Agree"	eement and baids the clent 5 ("Somutral", 26%	relative distr hild in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27	response is o	letailed b	pelow.
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly	of the collar evel of agre ollar pull tal of Agreem e", 33% "Ne Agree" nt has been t with this.*	eement and baids the clent 5 ("Somutral", 26% slightly mo	relative distribilid in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27 on panellis	response is c  "Agree"  st feedback p	letailed b	oelow. ok your le
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen	of the collar evel of agreed of Agreemeler, 33% "Ne Agree" on the been the with this.*	eement and baids the clent 5 ("Somutral", 26%	relative distraction in donnir newhat Agree "Somewhat Addition based Somewhat	ribution of ng the shoo ") Agree", 27	response is one  "Agree"  st feedback possessessessessessessessessessessessesse	letailed b	oelow. ok your le
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen	of the collar evel of agreemet, 33% "Ne Agree" ht has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen of agreemen	of the collar evel of agreed of Agreemeler, 33% "Ne Agree" on the been the with this.*	eement and baids the clent 5 ("Somutral", 26% slightly mo	relative distraction in donnir newhat Agree "Somewhat Addition based Somewhat	ribution of ng the shoo ") Agree", 27 on panellis	response is one  "Agree"  st feedback possessessessessessessessessessessessesse	letailed b	oelow. ok your le
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statement of agreemen	of the collar evel of agreemet, 33% "Ne Agree" ht has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen of agreemen	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen of agreemen  Purpose: A collar pull	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A collar pull tab may aid	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A complete Median level 7% "Disagree 7% "Strongly The statement of agreemen  Purpose: A collar pull tab may aid the child or	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statement of agreemen  Purpose: A collar pull tab may aid the child or those	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statement of agreemen  Purpose: A collar pull tab may aid the child or those offering assistance in donning	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree
to the back of The median I Purpose: A commedian level 7% "Disagree 7% "Strongly The statement of agreemen Purpose: A collar pull tab may aid the child or those offering assistance	of the collar evel of agreemet, 33% "Ne Agree" ant has been t with this.*  Strongly Disagree	eement and b aids the clent 5 ("Som utral", 26% slightly mo	relative distribility in donning the what Agree "Somewhat Agree odified based Somewhat Disagree	ribution of ng the shoon ") Agree", 27 on panellis	response is of the street of t	letailed b lease ran Agree	oelow. ok your le Strongly Agree

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to the topline/collar please use this optional area to provide us with your reasoning.

## Upper



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the upper of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

11)

The panellists were presented with the following options in relation to the ideal material for the upper in Round 2

The relative distribution of response is detailed below:

Option 1: Optional range of upper material to include; leather, breathable material and wipeable material. 100%

Option 2: Upper should be constructed of leather (Original) 0%

A Consensus was reached for Option 1

12)

The following purpose was presented to the panellists in Round 2 in relation to leather as an upper material.

The median level of agreement and relative distribution of response is detailed below.

		nent 6 ("Agr newhat Agr	ee") ee", 53% "Ag	ree", 20%	"Strongly Agr	ee"	
Median leve	el of Agreen hat Disagre	nent 6 ("Agr	al stiffness of ree") eutral", 20% "				
Panellist fee	edback sugg naterial nee	ds to accou	eather mate.				_
			modified bas	ed on pane	ellist feedbac	k please	rank your
level of agre	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree	4	Agree		Agree
Purpose:	1	2	3	4	5	6	7
Leather may adapt to foot structures over time dependent on the tensile strength of the leather.							
Purpose: Leather may enhance material stiffness of the footwear dependent on the tensile strength of the leather.							

The panellists were presented with the following options in relation to the desired design characteristic of the tongue to topline relationship for stability footwear In Round 2. The relative distribution of response is detailed below:

Option 1: Tongue length optional dependent on patient's preference and manual dexterity 67%
Option 2:Tongue extended above topline (Original) 33%
Option 3:Tongue should be in line with topline (Original) 0%

No specific panellist feedback was given to inform any further modification of these options.

Please consider the following two options in reference to the tongue to topline relationship.\*

Option 1:Tongue length optional dependent on patient's preference and manual dexterity

Option 2: Tongue extended above topline (Original)

#### 14

The following purposes were presented to the panellists in Round 2 in relation to the tongue to topline relationship.

The median level of agreement and the relative distribution of response is detailed below.

Purpose: Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle.

Median level of Agreement 5 ("Somewhat Agree")

13% "Somewhat Disagree", 13% "Neutral", 40% "Somewhat Agree",

27% "Agree", 7% "Strongly Agree"

Purpose: Tongue extended above topline allows for comfort with lacing Median level of Agreement 6 ("Agree")

13% "Neutral", 27% "Somewhat Agree", 40% "Agree", 20% "Strongly Agree"

Purpose: Tongue extended above topline allows the wearer to minimise slippage of the tongue under the fastenings during wear

Median level of Agreement 6 ("Agree")

13% "Somewhat Disagree", 13% "Neutral", 13% "Somewhat Agree",

40% "Agree", 21% "Strongly Agree"

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

Please consider the following statements from Round 2 in relation to the purpose of the tongue to topline relationship and rank your agreement with them..\*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Purpose:							
Tongue in							
line with							
topline is to							
minimise							
irritation to							
the anterior							
aspect of							
the ankle							
Purpose:							
Tongue							
extended							
above							
topline							
allows for							
comfort							
with lacing							
Purpose: Tongue							
extended							
above							
topline							
allows the							
wearer to							
minimise							
slippage of							
the tongue							
under the							
fastenings							
during							
wear							
5)							
•	s were pres	ented with	following de	sign consi	derations for	the uppe	er of off
he shelf stal	oility footw	ear in Roun	d 2 based on	panellist	suggestions ir	n Round	1.
The median l	evel of agre	eement and	l relative dist	ribution o	f response is	detailed	below.
	sandals to I	oe offered a	as an option f	or stabilit	y tootwear ra	inges for	warm
weather.	-f ^	+ C (!! A	"\				
Median level	_	_		aroo" 27	/ "Ctrongly A	aroc"	
13% Neutra	1,33%, 30	mewnat A	gree", 27% "A	igree , 27	% Strongly A	gree	
Ergonomic co	onsideratio	n of interna	ıl seams to re	duce skin	irritation		
Median level							

67% "Agree", 3							
A Consensus w	as reached	for this de	sign option				
Slit or loop in t	he tongue f	for fastenin	g to minimise	e tongue s	slippage		
Median level o	of Agreemer	nt 6 ("Agree	e")				
13% "Somewh	_	_		ngly Agree	2"		
A Consensus w	as reached	for this de	sign option				
No specific par	nellist feedb	ack was gi	ven to inform	any furth	ner modificati	on of th	e design
option of high						on of th	e panel's
response to eit	ther change	or mainta	in your previo	ous choice	2.		
Please conside the upper.*	r the follow	ing statem	ent from Rou	ınd 2 in re	lation to the	design o	ption for
«բրեւ	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree	_	Agree		Agree
High topped		2	3	4	5	6	7
sandals to be							
offered as an							
option for							
stability							
footwear ranges for							
warm							
weather							
s)			ewhat agree"	or lower	for any of the	statem	ents in
6) f vour level of	agreement	was "some					
6) f your level of relation to the	-		_	to provid	de us with you	ur reasor	
f your level of	-		_	to provid	le us with you	ır reasor	
f your level of	-		_	to provid	le us with you	ır reasor	<u> </u>
f your level of	-		_	to provid	le us with you	ır reasor	
f your level of	-		_	to provid	le us with you	ır reasor	J
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	

# **Fastening and Facing**



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Fastenings and Facings of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 17)

The panellists were presented with the following options in relation to the desired design characteristic of the type of fastening in Round 2 The relative distribution of response is detailed below:

Option 1: Optional dependent on patient's ability and desired goal (e.g. Velcro for limited hand dexterity, lace for greater stability) 93%

Option 2: Velcro (Original) 7% Option 3: Lace (Original) 0%

Option 4:No preference (Original) 0%

A consensus was reached for Option 1.

Panellist feedback suggested that having combination fastenings on offer may also assist donning with adjunct assistive aids such as AFO's

18)

The following purposes were presented to the panellists in Round 2 for the type of fastenings.

The median level of agreement and relative distribution of response is detailed below.

Purpose of Velcro fastenings: Assists independence with limited hand dexterity in donning and doffing.

Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 46% "Agree", 47% "Strongly Agree"

A Consensus was reached for this purpose

Purpose of lace fastenings: Enhances stability through potential firmer grip to contours of the foot.

Median level of Agreement 6 (Agree)

7% "Somewhat Disagree", 7% "Neutral", 13% "Somewhat Agree", 47% "Agree", 26% "Strongly Agree"

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

Please consider the following statement from Round 2 in relation to the purpose of a lace fastening.\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose of							
lace							
fastenings:							
Enhances							
stability							
through							
potential							
firmer grip							
to the							
contours of							
the foot							

19

The panellists were presented with the following options in relation to the desired design characteristic of the Position of the facings in Round 2

The relative distribution of response is detailed below:

Option 1: Optional dependent on patient's foot and ankle mobility or therapeutic goal (i.e. facings extended to toe box for ease of foot and ankle access, extended to midfoot for greater upper stability) 93%

Option 2: Facings extended to just behind the toe box (original)

7%

Option 3: Facings extended to midfoot (original) 0%

Option 4: No Preference (original) 0%

A consensus was reached for Option 1.

•	$\overline{}$	1
,	11	П
_	.,	ч

The following purposes were presented to the panellists in Round 2 in relation to the position of the facings.

The median level of agreement and the relative distribution of response is detailed below.

Purpose: Facings extended to just behind the toe box allows greater access into the footwear for the child with limited foot and ankle range of motion

Median level of Agreement 6 ("Agree")

7% "Neutral", 66% "Agree", 27% "Strongly Agree"

A consensus was reached for this Purpose

Purpose: Facing extended to the midfoot allows the upper to offer greater stability to the foot and ankle.

Median level of Agreement 6 ("Agree")

7% "Somewhat Disagree", 20% "Neutral", 20% "Somewhat Agree", 53% "Agree"

No feedback was given to explain the lack of consensus agreement to the purpose of the facings extended to the midfoot, or to suggest further modification of the statement, although a strong majority of the panel advocated for an optional range of facing extensions to be incorporated in Question 19.

Please consider the following statement from Round 2 in relation to the purpose of facings extended to the midfoot..\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Facing							
extended							
to the							
midfoot							
allows the							
upper to							
offer							
greater							
stability to							
the foot							
and ankle.							

21)									
The panellists facings of off t Round 1.	the shelf sta	ability foot	wear in Roun	d 2 based	on panellist s	uggestic	ns in		
The median level of agreement and the relative distribution of response is detailed below.									
Median level of 13% "Somewh A consensus we Side Zip comb Median level of 7% "Somewhat "Strongly Agree Panellist feed!	The median level of agreement and the relative distribution of response is detailed below.  The Gap between the facings should allow adequate range of fastening adjustment Median level of Agreement 6 ("Agree")  13% "Somewhat Agree", 40% "Agree", 47% "Strongly Agree"  A consensus was reached for this statement  Side Zip combination fastening  Median level of Agreement 6 ("Agree")  7% "Somewhat Disagree", 20% "Neutral", 13% "Somewhat Agree", 47% "Agree", 13% "Strongly Agree"  Panellist feedback suggested potential difficulty with side zip fastening including easy to damage zip mechanism, dangers of damaging skin or nails, and difficulty in fastening zip if								
lace lastering	s are tigrite	neu tignt e	nough to con	itoui to tii	e loot alla al	ikie.			
Considering pa		dback pleas	se rank your l	evel of ag	reement to si	de zip la	ce		
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly		
	Disagree		Disagree		Agree		Agree		
	1	2	3	4	5	6	7		
Side zip lace									
combination									
fastening									
22)									
	If your level of agreement was "somewhat agree" or lower for any of the statements in relation to the fastening and facings please use this optional area to provide us with your								

f your level of agreement was "somewhat agree" or lower for any of the statements in
relation to the fastening and facings please use this optional area to provide us with your
reasoning.

# Heel counter/stiffener



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Heel counter/stiffener of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 23

The panellists were presented with the following options in relation to the desired design characteristic of the heel counter/stiffener extension in Round 2.

The relative distribution of response is detailed below:

Option1: Optional range of heel counter extensions dependent on therapeutic need and the patient's foot and ankle anatomy (80%)

Option 2: Heel counter/stiffener extended to the midfoot only (13%)

Option 3: Heel counter stiffener, extended to the midfoot and towards topline (7%)

Option 4: Heel counter/stiffener extended towards the topline only (0%)

A Consensus was reached for Option 1:

Panellist Feedback suggested a concern that requesting too many optional features may present manufactures with difficulty in providing a stock boot. Additionally, heel counter changes may affect the fixation of the upper to the sole unit.

## 24)

The following purposes were presented to the panellists in Round 2 in relation to the heel counter/stiffener.

The median level of agreement and the relative distribution of response is detailed below.

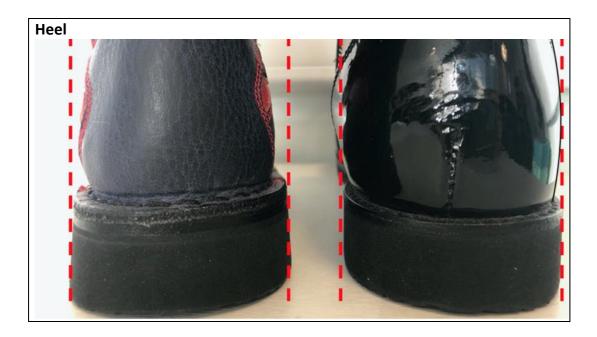
Purpose: Heel counter/stiffener extensions can enhance proprioception at the foot and ankle

Median level of Agreement 5 ("Somewhat Agree")

20% "Neutral", 46% "Somewhat Agree", 27% "Agree", 7% "Strongly Agree" Purpose: Heel counter/stiffener extension offers material stiffness to restrict frontal plane movements at the foot, ankle and midfoot dependent on the extension profile. Median level of Agreement 6 ("Agree") 7% "Neutral", 40% "Somewhat Agree", 40% "Agree", 13% "Strongly Agree" Panellist feedback suggested partial agreement due to the limited evidence base to support the purpose of the heel counter. Additionally, it was felt control at the heel counter area of the shoe should also consider the vertical ground reaction force component through increased contact area between the inner sole of the shoe and the plantar surface of the child's heel. The research team appreciates that there is a paucity of scientific or structured clinical research but we would ask you to consider your years of clinical experience and expertise as to the perceived role of this design adaption. Based on your clinical experience please rank your level of agreement with these proposed purposes and design considerations of the Heel counter/stiffener:\* Strongly Disagre Somewha Neutra Somewha Agre Strongl Disagre t Disagree t Agree y Agree 1 2 3 6 Purpose: Heel counter/stiffene r extensions may enhance proprioception at the foot and ankle. Purpose: Heel counter/stiffene r extension offers material stiffness that may restrict frontal plane movements at the foot, ankle and midfoot dependent on the extension profile. Control of frontal plane movements of the foot and ankle at the

heel counter				
area should also				
consider vertical				
ground reaction				
force contact				
area, through				
close contact				
between the				
plantar surface				
of the child's				
heel and the				
inner sole of the				
shoe.				

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to the heel counter/stiffener please use this optional area to provide us with your reasoning.



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Heel of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 26

The panellists were presented with the following options in relation to the desired design characteristic of the "Heel width in relation to the heel counter" in Round 2.

The relative distribution of response is detailed below:

Option 1: Heel width extensions should be provided as an optional sole adaption with the heel width extension on standard stability footwear being no wider than the welted seam. (53%)

Option 2: Heel width extended wider than heel counter width (Original) (40%)

Option 3: No preference (Original) (7%)

Option 4: Heel width in line with heel counter width (Original) 0%

No specific panellist feedback was given to inform any further modification of the options of heel width in relation to the heel counter. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please consider the following 3 options from Round 2 of the heel width in relation to the heel counter.\*

Heel width in line with heel counter width (Original)
Heel width extended wider than heel counter width (Original)
No preference (Original)
Heel width extensions should be provided as an optional sole adaption with the heel width extension on standard stability footwear being no wider than the welted seam.

#### 27)

The following purpose was presented to the panellists in Round 2 in relation to an extended heel width

The median level of agreement and relative distribution of response is detailed below. Purpose: Heel width extensions assist medial-lateral stability of the foot and ankle through an increased base of support.

Median level of Agreement 6 ("Agree")

7% "Neutral", 7% "Somewhat Agree:, 53% "Agree", 33% "Strongly Agree" A consensus was reached for this statement.

Panellist feedback suggested for a wide sole to offer increased stability maximum contact with the insole of the shoe and the plantar surface of the foot is required to maximise vertical GRF contact area:\*

The panellists were presented with following design considerations for the heel of off the shelf stability footwear in Round 2 based on panellist suggestions in Round 1.

The median level of agreement and relative distribution of response is detailed below.

Heel Pitch should not increase ankle instability
Median level of Agreement 6 ("Agree")
13% "Somewhat Agree", 67% "Agree", 20% "Strongly Agree"
A consensus was reached for this statement

Heel pitch should allow for adjunct orthotic therapy Median level of Agreement 6 ("Agree") 7% "Somewhat Agree", 73% "Agree", 20% "Strongly Agree" A consensus was reached for this statement

Panellist feedback suggested that ankle Instability would be inevitable due to plantarflexion in propulsion.

29)

You may use this optional area to provide us with any further information to your responses on the heel

## Inlay



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Inlay of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

30

The panellists were presented with the following options in relation to the desired design characteristic of the Inlay in Round 2.

The relative distribution of response is detailed below:

Option 1: The inlay should be contoured to simulate the medial longitudinal arch and to cup the heel 54% Option 2: The inlay should be contoured to cup the heel but not the medial longitudinal arch 33% Option 3: The inlay should be contoured to simulate the medial longitudinal arch (Original) 13% Panellist feedback suggested, That "off the shelf" stability footwear not just for early walkers therefore contouring to MLA may be required for larger sizes. Mild arch contour similar to that offered in standard retail footwear would be appropriate. The Arch may be easily reduced by clinician to control blistering in low arch feet. Ambiguous statement unsure if heel cupping would improve the fit of inlay to shoe or inlay and shoe to patient's foot Slight modification to the options have been addressed panellist based on panellist feedback.\* The inlay should cup the child's heel to improve rearfoot fit and be appropriately contoured to the medial longitudinal arch The inlay should cup the child's heel to improve rearfoot fit but not be

31)

The following purpose and design characteristics were presented to the panellists in Round 2 in relation to inlay

contoured to the medial longitudinal arch

The median level of agreement and the relative distribution of response is detailed below.

The inlay should be appropriately contoured to the medial longitudinal

Removable Inlay should be thick enough to simulate a potential prescriptive foot orthoses Median level of Agreement 6 ("Agree")

67% "Agree", 33% "Strongly Agree"

arch

A consensus was reached for this statement

Purpose: An inlay contoured to cup the heel improves rearfoot fitting Median level of Agreement 5 ("Somewhat Agree")

7% "Somewhat Disagree", 13% "Neutral", 34% "Somewhat Agree", 33% "Agree", 13% "Strongly Agree"

Panellist feedback suggested ambiguity if cupping of the heel would improve the fit of inlay to shoe or the inlay and shoe to the patient's foot

The statement has been slightly modified based on panellist feedback please rank your level of agreement with this.\*

1 2 3 4 5 6 7  inlay		Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
inlay			2		4		6	
our level of agreement was "somewhat agree" or lower for any of the statements in	n inlay							
our level of agreement was "somewhat agree" or lower for any of the statements in	ontoured			_		_		
our level of agreement was "somewhat agree" or lower for any of the statements in	o cup the							
our level of agreement was "somewhat agree" or lower for any of the statements in	eel							
our level of agreement was "somewhat agree" or lower for any of the statements in	nproves							
our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in	noe							
	)							
		of agreeme	nt was "so	mewhat agre	e" or lowe	er for any of t	he state	ments in
		ne may pie	ase ase triis	optional arc	ca to provi	ac as with ye	our reaso	



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Sole unit of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

33)

The panellists were presented with the following options in relation to the desired design characteristic of the tread depth of the sole unit in Round 2.

The relative distribution of response is detailed below:

Option 1: The tread depth should come in an optional range dependent on the ability of the child and the environment where the footwear is to be used. (87%)

Option 2: A deepened tread (Original) 13%

A consensus was reached for Option 1

34

The panellists were presented with the following options in relation to the desired design characteristic of the wear characteristics of the sole unit in Round 2.

The relative distribution of response is detailed below:

Option 1: Optional wear resilience of the sole material dependent on the age and ability of the patient. (87%)

Option 2: Hard-wearing material (Original) (13%)

A consensus was reached for Option 1

35)

The following purpose was presented to the panellists in Round 2 in relation to hard wearing sole material.

The median level of agreement and relative distribution of response is detailed below.

Purpose: Hard-wearing sole material will prolong the stability effect of the footwear by resisting wear patterns associated with gait pathologies.

Median level of Agreement 6 ("Agree")

7% "Neutral", 7% "Somewhat Agree", 79% "Agree", 7% "Strongly Agree"

A consensus was reached for this Statment.

## 36)

"The panellists were presented with the following options in relation to the desired design characteristic of the degree of flexibility for the sole unit. in Round 2. The relative distribution of response is detailed below:

Option 1: The sole unit should come in a range of sole stiffness dependent on the patient's ability or the therapeutic goals, with flexibility of the sole focused at the MPJ area

(100%)

Option2 (Other)

(0%)

A consensus was reached for option 1.

#### 37

The panellists were presented with following design considerations for the sole unit of off the shelf stability footwear in Round 2 based on panellist suggestions in Round 1. The median level of agreement and relative distribution of response is detailed below.

Rearfoot to Forefoot width ratio's kept to lowest practical ratio to assist medial lateral stability

Median level of Agreement 5 ("Somewhat Agree")

27% "Neutral", 27% "Somewhat Agree', 40% "Agree", 6% "Strongly Agree"

The sole unit should be stiffer at the midfoot and rearfoot to assist stability in these regions.

Median level of Agreement 5 (Somewhat Agree)

7% "Somewhat Disagree", 20% "Neutral", 26% "Somewhat Agree", 20% "Agree", 27% "Strongly Agree"

Panellist feedback suggested the width ratio of forefoot and rearfoot was ambiguous and required further explanation.

The statement in relation to the sole unit rearfoot to forefoot ratio has been slightly modified based on panellist feedback No specific feedback was offered to offer modification of the statement concerning the stiffness at midfoot and rearfoot sole unit,

he ground ontact rea ratio etween ne earfoot	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	4	Somewhat Agree 5	Agree 6	Strongly Agree 7
ontact rea ratio etween ne earfoot nd		2		4		6	
ontact rea ratio etween ne earfoot nd							
prefoot of ne sole unit nould be ept to the owest							
ractical atio to assist nedial- ateral cability he sole nit should e stiffer at ne midfoot nd earfoot to assist cability in							
iese							
gions.							

# Toe spring forefoot/heel rocker



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the toe spring forefoot/heel rocker of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

39)

The panellists were presented with the following options in relation to the desired design characteristic of the forefoot rocker in Round 2.

The relative distribution of response is detailed below:

Option 1: Stability footwear should come in a range of forefoot rockers dependent on the patient's condition and the stiffness of the sole. (73%)

Option 2: Stability footwear should have a reasonable forefoot rocker. (Original) (27%)

Panellist feedback suggested that although the variation of rocker's and sole stiffeners offered for conditions such as Charcot Marie Tooth and toe walking were important these should be offered as a sole adaption prescription rather than a standard design on stability footwear.

A modified option as been offered based on panellist feedback.\*

Option 1: Stability footwear should come in a range of forefoot rockers
dependent on the patient's condition and the stiffness of the sole.
Option 2: Stability footwear should have a reasonable forefoot rocker as a standard design. With forefoot rocker adaption prescriptions available to meet patient's needs.

The following purposes were presented to the panellists in Round 2 in relation to the forefoot rocker

The median level of agreement and relative distribution of response is detailed below.

Purpose of forefoot rocker: Should facilitate forward progression in terminal stance without impacting on stability.

Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 66% "Agree", 27% "Strongly Agree"

A consensus was reached for this statement

Design characteristic of forefoot rocker: Should allow adequate ground clearance in swing Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 66% "Agree', 27% "Strongly Agree"

A consensus was reached for this statement

41

The panellists were presented with the following options in relation to the desired design characteristic of the heel rocker in Round 2.

The relative distribution of response is detailed below:

Option 1: Heel rockers should be offered as a sole adaption prescription dependent on the child's condition rather than a standard design of stability footwear. (100%) Option 2: Stability footwear should have a heel rocker. (Original) (0%)

A Consensus was reached for Option 1

42)

You may use this optional area to provide us with any further information to your responses on toe spring forefoot/heel rocker.

## Weight of the footwear

In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the weight of the footwear of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

43)

The following purpose and design characteristics were presented to the panellists in Round 2 in relation to the weight of the footwear

The median level of agreement and relative distribution of response is detailed below.

Stability Footwear should be the lowest reasonable mass to reduce physiological cost during mobility

Median level of Agreement 6 ("Agree")

33% 'Somewhat Agree", 40% "Agree", 27% 'Strongly Agree'

Mass of shoe should be dependent on the mass and age of the child Median level of Agreement 6 ('Agree")

13% "Neutral", 20% "Somewhat Agree", 54% "Agree", 13% "Strongly Agree"

The mass of the shoe should be dependent on the child's stability needs.

Median level of Agreement 6 ("Agree")

7% "Neutral", 13% "Somewhat Agree", 67% "Agree", 13% "Strongly Agree" A consensus was reached for this statement

Purpose of Increased mass assists stability in stance, Median level of Agreement 5 ("Somewhat Agree") 40% "Neutral", 20% "Somewhat Agree", 40% "Agree"

Purpose of Increased Mass Assists pendular motion in swing Median level of Agreement 5 ("Somewhat Agree") 7% "Somewhat Disagree", 40% "Neutral', 26% "Somewhat Agree" 20% "Agree", 7% "Strongly Agree"

Panellist feedback suggested that pendular motion may be assisted but increased mass may also cause an adverse effect with instability in swing and preloading increasing difficulty in navigating obstacles and stair climbing.

The increased mass of the footwear may unintentionally provide a benefit in strengthening limbs but also may induce early fatigue.

A new statement was generated from panellist feedback concerning a potential adverse effect of the weight of the shoe. No specific panellist feedback was given to inform further modification of the other statements, However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your level of agreement with these statements..\*

1 10 00 0 1 011111 7 0	<del></del>	<u> </u>		***************************************	-		
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should be the							
lowest							
reasonable							
mass to							
reduce							
physiological							

cost during mobility.				
The mass of the shoe should be				
dependent on the mass and age of				
the child.				
Purpose of increased mass: Assist				
stability in stance				
Purpose of increased				
mass: Assists pendular motion in				
swing Adverse				
Effect: Increased				
mass of the shoe may lead to				
difficulty in swing phase				
with ground clearance, navigating				
obstacles and stair				
climbing.				
14) If your level of a relation to the v	weight of th			

## **Further Design Considerations**

The following section provides additional design considerations for "Off the Shelf" Stability footwear suggested by the panellists.

#### 45)

The Following design consideration was presented to the panellist in Round 2. The median level of agreement and relative distribution of response is detailed below.

Children's "Off the Shelf" stability footwear should come in a range of last dimensions to accommodate proportional differences in foot types.

Median level of Agreement 6 ("Agree")

7% "Neutral", 46% "Agree", 47% "Strongly Agree",

A consensus was reached for this statement.

## 46

The Following design consideration was presented to the panellist in Round 2. The median level of agreement and relative distribution of response is detailed below.

Children's "Off the Shelf" stability footwear should come in a range of colours and styles to appeal to children's preferences.

Median level of Agreement 7 ("Strongly Agree") 40% "Agree", 60% "Strongly Agree"

A consensus was reached for this statement.



## **END OF SECTION 2 ROUND 3**

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

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