

Supplementary file 5A-M. Complete data and responses of general statements, items, symptoms, criteria for referral and participants' feedback: Round 1 and Round 2.

Supplementary file 5A. Complete data and responses of "General statements" section: Round 1.

Statement		Agreement (n=41)					Agreement in favour (n)	Agreement in favour (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
1	Sports medicine clinicians (e.g., musculoskeletal/sports physiotherapists, sports and exercise medicine physicians) should be aware of PFD that could occur among female athletes	0	0	0	8	33	41	100
2	Screening for referral should be conducted regularly	0	0	6	12	23	35	85.4
3	Minimum screening is indicated at preseason/end of season	0	2	3	15	21	36	87.8
4	Minimum screening is indicated at mid-season	0	6	13	16	6	22	53.7
5	Minimum screening is indicated at end of contract/retirement	0	6	7	12	16	28	68.3
6	Additional screening is required in case of return to sport after pregnancy	0	0	4	6	31	37	90.2
7	Each individual athlete or club have at least one nominated health professional with relevant expertise, who is responsible for PFD screening	1	1	9	15	15	30	73.2
8	Name for the tool: PFD - SENTINEL = Pelvic Floor Dysfunction - ScrEeNing Tool IN fEmale athLetes	1	2	5	14	19	33	80.5
9	Name for the tool: PFD - SLATE = Pelvic Floor Dysfunction - Screen femaLe AthleTE	6	12	14	7	2	9	21.9

Green indicates > 67% of agreement.

Red indicates ≤ 67% of agreement.

Additional statements; other suggestions for the name of the tool	P-FAST (Pelvic floor - Female Athlete Screening Tool)
	PFD - SENTINEL is great!
	In English to 'slate' someone means to disrespect them. I don't think that is a good name. Sentinel is better because it means 'to guard' and comes from the word 'sentire' which means 'to notice'.
	The availability of a nominated health professional with expertise in PFD screening is likely to be strongly influenced by the level of participation of sport and the funding available within sports programs.
	P-FLOORDYSTOOL
	PFD-screening questionnaire

Supplementary file 5B. Results of two rounds Delphi showing level of agreement with “General statements”.

Statement		Round 1 Agreement (%)	Round 2 Agreement (%)
1	Healthcare professionals (i.e. musculoskeletal/sports physiotherapists, sports medicine physicians, club doctors) should be aware of PFD that could occur among female athletes	100	-
2	Additional screening is required in case of return to sport after pregnancy	90.2	-
3	Minimum screening is indicated at preseason/end of season	87.8	-
4	Screening for referral should be conducted regularly	85.4	-
5	Each individual athlete or club have at least one nominated health professional with relevant expertise, who is responsible for PFD screening	73.2	-
6	Minimum screening is indicated at end of contract/retirement	68.3	-
7	Minimum screening is indicated at mid-season	53.7	50
8	An additional and a specific screening should be conducted among para-athletes (e.g. wheelchair athletes)	-	82.4

Green indicates > 67% of agreement for the statement.

Red indicates ≤ 50% of agreement.

Supplementary file 5C. Complete data and responses of “Items” section: Round 1.

Items		Agreement (n= 41)					Agreement in favour of endorsement (n)	Agreement in favour of endorsement (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
1	Age < 18	0	4	19	10	8	18	43.9
2	Age ≥ 28	3	6	10	11	11	22	53.7
3	BMI > 30	0	0	8	15	18	33	80.5
4	BMI < 18.5	0	0	5	19	17	36	87.8
5	Childbirth	0	0	7	11	23	34	82.9
6	Menopause	0	0	7	15	19	34	82.9
7	Medications (e.g. psychotropic medications, ACE inhibitors, diuretics)	0	2	15	13	11	24	58.5
8	Smoking	0	2	13	13	13	26	63.4
9	Higher age of menarche	0	3	19	9	10	19	46.3
10	Irregular menstrual cycle	0	3	9	13	16	29	70.7
11	Hormonal therapy, oestrogen deficiency states	0	2	10	14	15	29	70.7
12	History of urinary tract infections (LUTS)	0	1	6	19	15	34	82.9
13	Family history of urinary incontinence (UI)	0	0	13	14	14	28	68.3
14	Constipation	0	0	9	14	18	32	78.0
15	Nerve, muscle damage, tissue disruption (pelvic floor)	0	1	3	11	26	37	90.2
16	Pelvic surgery, radiation	0	0	3	15	23	38	92.7
17	Lung disease	0	0	15	14	12	26	63.4
18	Diabetes mellitus	0	0	17	16	8	24	58.5
19	Connective tissue disease	0	1	4	14	22	36	87.8
20	Hypermobility syndrome	0	0	4	17	20	37	90.2
21	Relative energy deficiency in sport (RED-s)	0	0	4	14	23	37	90.2
22	Eating disorders	0	2	6	15	18	33	80.5
23	Other musculoskeletal disorders (e.g. Low back pain, hip pain)	0	3	6	21	11	32	78.0

24	Daily drinking carbonated beverages	0	3	26	8	4	12	29.3
25	Excessive caffeine consumption	1	4	22	10	4	14	34.1
26	High-impact sports (e.g. volleyball, gymnastics, powerlifting)	0	0	2	8	31	39	95.1
27	Medium-impact sports (karate, triathlon)	0	1	2	20	18	38	92.7
28	Low-impact sports (e.g. swimming, cycling)	0	5	12	11	13	24	58.5
29	Age at start of training < 14 years	0	2	15	11	13	24	58.5
30	Years of training/sports practice ≥ 9	1	3	8	13	16	29	70.7
31	Training hours/day ≥ 2	0	4	5	14	18	32	78.0
32	Training hours/week ≥ 8	0	2	5	18	16	34	82.9
33	Training frequency/week ≥ 4	0	4	4	16	17	33	80.5
34	High-level sports/Athlete's national ranking	0	1	6	12	22	34	82.9

Green indicates > 67% of agreement.

Red indicates $\leq 67\%$ of agreement.

Supplementary file 5D. Results of Round 1 showing level of agreement regarding the “Agreement for referral”: item score suggesting referral to a PFD specialist.

	Score for referral	Agreement (n= 41)					Agreement in favour (n)	Agreement in favour (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
1	Total item score \geq 30% of all items included in the screening tool	7	6	20	4	4	8	19.5
2	Total item score \geq 40% of all items included in the screening tool	4	4	17	9	7	16	39.0
3	Total item score \geq 50% of all items included in the screening tool	2	2	9	19	9	28	68.3
4	Total item score \geq 60% of all items included in the screening tool	4	3	13	9	12	21	51.2

Green indicates $>$ 67% of agreement.

Red indicates \leq 67% of agreement.

Comments	
	You might include symptoms. These are an important first step for the screening.
	Does not make sense to me to make a total score of the above items, they are measuring different topics
	I know numbers and scoring are important, but having one risk may be enough to warrant referral (ie childbirth or RED-S)
	You might include increment factors (weights) in some more relevant risk factors such as high impact and weight lift sport modalities for example. They seem way more relevant than diabetes for example.
	Depends if it is a weighted score or not. maybe some items matter more.
	Why are symptoms not included?
	Either 50 or 60% of items present might be a good bench mark
	Depends on the screening tool and results from pilot studies

Supplementary file 5E. Relevant feedback and general comment provided by participants: Round 1.

	Comments
1	I am not sure about the general score
2	Very interesting
3	Very important tool
4	Thank you for working on this! Excited to see what comes.
5	Congratulations for the relevant work.
6	Excellent work! My knowledge of the subject does not allow me to select a point on the Likert scale below neutral. Focusing on sports, I think it is important to investigate the intensity of effort required by the discipline (i.e. powerlifting, crossfit) in addition to the fact that it is a high impact sport. Further considerations could be made on endurance disciplines that require sitting for long periods of time (i.e. cycling, ultra-triathlon), on disciplines where the sitting position may be subject to impact (i.e. horseback riding) and finally on some environmental factors such as hypothermia (i.e. winter sports).
7	Need to consider number of items in the screening tool as sports clubs have a number of medical conditions to screen for and so the tool needs to not be too onerous for the athlete or professional administering the tool.
8	As a physical education professional and a researcher on the health of the pelvic floor of women in different sports and at different ages, I am in favor of including all the items, which were very well selected here.
9	Nice and an important work - well done and good luck!
10	Perhaps questions regarding sexual dysfunction could be included in the screening tool
11	The questionnaire is quite comprehensive. However, I missed questions related to POP symptoms.
12	High impact sports includes both gymnastics and powerlifting - I believe the possible mechanisms of PFD in these athletes might be very different. Gymnasts and volleyball players will have high impact due to large ground reaction force from running/jumping/landing, but powerlifters/weightlifters will experience large increases in intraabdominal pressure when lifting heavy weight which - I think it would be better to classify them into different sport groups. High impact from running/jumping/acrobatics and high impact from heavy lifting activities.
13	Thank you for the opportunity to participate
14	I was not sure I was interpreting some of the questions correctly.
15	If the intent is for athletes to complete the questionnaire alone, then the language has to be carefully considered. Health literacy is generally poor, so many will not know if they have the condition or not.
16	Questions not so clear. Good work
17	Great Job!
18	Great effort in important fields of healthcare (sports, continence und pelvic floor disorders.
19	Very interesting.
20	Thanks for invite. My name Will compose the publicación? Or, It Will be possible to make a expert consensus? Kind regards.

21	A very important initiative. Once the tool is developed, its validity and use with real athletes should be encouraged. I am unsure of the quality of the evidence for some "risk factors" in the case of female athletes based on the scarce literature, but many can be plausible and its worthy expanding investigation in this area.
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Supplementary file 5F. Round 2: complete data and responses of “General statements” that did not reach minimum consensus in Round 1 and additional suggestions provided by participants (n=34).

	Statement	Agreement (n=34)					Agreement in favour (n)	Agreement in favour (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
1st round	Minimum screening is indicated at mid-season	1	4	12	15	2	17	50
New	An additional and a specific screening should be conducted among para-athletes (e.g. wheelchair athletes)	0	1	5	17	11	28	82.4

Green indicates > 67% of agreement.

Red indicates ≤ 67% of agreement.

Supplementary file 5G. Round 2. Complete data and responses of “Items” section: presentation of items that did not reach minimum consensus in Round 1 and additional items suggested by participants.

Items		Agreement (n= 34)					Agreement in favour of endorsement (n)	Agreement in favour of endorsement (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
1st round	Age ≥ 28	2	11	10	4	7	11	32.3
	Medications (e.g. psychotropic medications, ACE inhibitors, diuretics)	0	2	8	17	7	24	70.6
	Smoking	0	4	11	13	6	19	55.9
	Lung disease	0	4	13	12	5	17	50
	Diabetes mellitus	0	2	8	18	6	24	70.6
	Low-impact sports (e.g. swimming, cycling)	0	13	10	7	4	11	32.3
	Age at start of training < 14 years	2	3	5	19	5	24	70.6
New	Type of delivery: cesarean section	0	7	8	12	7	19	55.9
	Type of delivery: vaginal birth	0	0	2	17	15	32	94.1
	Family history of pelvic organ prolapse (POP)	0	4	4	13	13	26	76.5

Green indicates > 67% of agreement.

Red indicates ≤ 67% of agreement.

Supplementary file 5H. Round 2: preliminary question regarding the inclusion of a new section related to symptoms.

Symptoms inclusion	Agreement (n= 34)					Agreement in favour of endorsement (n)	Agreement in favour of endorsement (%)
	Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
Do you agree to include the main symptoms of pelvic floor dysfunction (urinary incontinence, pelvic organ prolapse, overactive bladder, fecal incontinence, pelvic pain) into the screening for referral tool?	0	0	3	10	21	31	91.2

Supplementary file 5I. Round 2: specific questions regarding symptoms. Question: “Do you agree to include the following symptoms?”. The main symptoms of the most prevalent PFD among female athletes were extracted from the Pelvic Floor Distress Inventory (PFDI-20) and diagnostic accuracy study.

Main symptoms	Question	Agreement (n= 34)					Agreement in favour of endorsement (n)	Agreement in favour of endorsement (%)
		Strongly disagree	Disagree	Neutral/ I do not know	Agree	Strongly agree		
Urinary incontinence (Any type)	Do you usually experience urine leakage?	0	0	0	11	23	34	100
Anal incontinence	Do you usually lose stool or gas beyond your control?	0	0	0	14	20	34	100
Overactive bladder syndrome	Do you usually experience urinary urgency (that is a strong sensation of needing to go to the bathroom) usually accompanied by frequent urination and nocturia?	0	0	1	15	18	33	97.1
Pelvic Organ Prolapse	Do you usually have a bulge or something falling out that you can see or feel in your vaginal area?	0	0	0	15	19	34	100
	Have you ever to push in the perineal area with your fingers to start o complete a bowel movement or to start o complete urination?	0	6	7	10	11	21	61.8
Pelvic pain	Do you usually experience pain or discomfort in the lower abdomen or genital region?	0	3	3	11	17	28	82.4

Green indicates > 67% of agreement.

Red indicates ≤ 67% of agreement.

Other (please specify)	Pain during or after sex?
	Even if you think you do not experience any of the symptoms mentioned above, do you use methods to try and prevent or minimise any of these symptoms. i.e. tampon use for fear of leakage?

Supplementary file 5L. Delphi Round 2: results showing participants' preference for the Name of the tool.

Name for the tool	N (%)
PFD - SENTINEL = Pelvic Floor Dysfunction - ScrEeNing Tool IN fEmale athLetes	16 (47.1)
P-FAST (Pelvic floor - Female Athlete Screening Tool)	15 (44.1)
PFD-screening questionnaire	3 (8.8)
P-FLOORDYSTOOL	0 (0)

Supplementary file 5M. Relevant feedback and general comment provided by participants: Round 2.

	Comments
1	Excellent project!
2	the inclusion of symptoms is a great addition
3	This initiative is quite relevant to improve clinical care
4	Useful guidelines for helping athletes with pfd.
5	Good initiative and thank you for the invitation to participate!
6	Excellent work! Look forward for the tool
7	WELL DONE
8	I wish a lot of success!
9	Great!
10	This looks great. My only additional comment is regarding lack of referral if <50%...this is somewhat concerning if their only symptom/item they choose (which would be <50%) is concerning. For example, if they have genital pain only but no other symptoms. Maybe discussion around intensity of bother for symptoms <50% and monitor?

	None comment
11	This tool will be an added value for early intervention in athletes of any age with PFD.
12	Very important work - well done!
13	From my point of view, the questionnaire is quite complete.
14	I would suggest to add a question related to pelvic pain
15	thank you
16	consider "rarely" instead of "not often". Otherwise excellent, congrats!
17	thanks
18	This is an important tool to develop. Good luck, I hope you manage to get it to a point where it is useful
19	Thanks
20	For the last symptom (pain/discomfort) I am neutral because this could be PFD, it could also be a wide range of other things. It is not very specific to PF.
21	Good work
22	I think that your team and you are doing an important project, thank you for the invitation