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### **Appendix 1: Questionnaires Measuring Cognitive Bias Regarding Pain**

#### **Negative Pain Thoughts Questionnaire 4 Question Version**

Answered on 5 point Likert scale from strongly disagree to strongly agree

1. My problem makes me feel awful and it overwhelms me.
2. My problem will only get worse and it will ruin my life.
3. This is taking too long to heal, there must be something seriously wrong.
4. Even though I can still do a lot of things, I can't enjoy them because of my condition:

#### **Pain Catastrophizing Scale 4 Question Version**

Answered on a 5 point Likert scale:

Not at all, to a light degree, to a moderate degree, to a great degree, all the time.

1. I worry all the time about whether the pain will end.
2. It's terrible and I think it's never going to get any better.
3. I become afraid that the pain may get worse.
4. I anxiously want the pain to go away.

#### **Tampa Scale of Kinesiophobia 4 Question Version**

Answered on a 4 point Likert Scale: strongly disagree, disagree, agree, strongly agree

1. My body is telling me I have something dangerously wrong
2. My health problem has put my body at risk for the rest of my life
3. Pain always means I have injured my body
4. I wouldn't have this much pain if there weren't something potentially dangerous going on in my body.

Appendix 2. Bivariate analysis of demographics and PROMIS Pain Interference and PROMIS Physical Function				
Variable	PROMIS PI		PROMIS PF	
	Mean	P-value	Mean	P-value
<b>Overall</b>	59.1 ± 0.7		42.9 ± 9.6	
<b>Sex</b>				
Male	58.6 ± 8.4	0.48	43.3 ± 9.7	0.65
Female	59.6 ± 8.0		42.5 ± 9.6	
<b>Race</b>				
White	58.5 ± 8.1	0.42	43.6 ± 9.9	0.57
Latino/Hispanic	61.8 ± 9.6		41.7 ± 8.4	
Black/African-American	58.9 ± 4.8		42.2 ± 7.9	
Other	59.1 ± 7.6		38.8 ± 11.7	
<b>Level of education</b>				
High school diploma or less	58.9 ± 11.5	0.22	44.1 ± 14.2	0.37
Some college	60.0 ± 7.7		41.7 ± 8.8	
Bachelor degree	57.2 ± 7.6		44.5 ± 8.8	
Graduate or professional degree	61.2 ± 6.7		40.9 ± 8.0	
<b>Age</b>	r = 0.03	0.75	r = <0.001	0.99
<b>Diagnosis cluster</b>				
UE	58.8 ± 8.5	0.81	44.4 ± 10.0	<b>0.05</b>
LE	59.6 ± 8.5		39.7 ± 9.3	
Other	58.9 ± 6.4		43.9 ± 7.6	
<b>Origin of complaint</b>				
Trauma	59.4 ± 8.1	0.71	41.7 ± 8.9	0.10
Non-Trauma	58.8 ± 8.4		44.5 ± 10.3	
<b>Discrete vs non-specific</b>				
Specific	58.6 ± 8.6	0.19	43.1 ± 9.7	0.68
Non-specific	60.8 ± 6.8		42.3 ± 9.3	
<b>Difficult Life Events</b>				
None	59.2 ± 7.0	0.95	43.9 ± 8.7	0.28
1 or more	59.1 ± 9.2		42.0 ± 10.4	

Data are presented as mean ± standard deviation, except for 'Age' (Pearson correlation coefficient). PI = pain interference, PF = physical function.

Appendix 3. The effect of the confounder anatomical location on generalized structural equation model with NPTQ				
Dependent variable	Independent variable	Regression Coefficient (95%CI)	P value	Standard Error
<i>Model without confounder</i>				
NPTQ	pain	0.44 (0.28 to 0.59)	<0.001	0.080
PROMIS PF CAT	NTPQ	-0.44 (-0.60 to -0.27)	<0.001	0.084
	pain	-0.18 (-0.34 to -0.013)	0.035	0.084
<i>Model with confounder</i>				
NTPQ	pain	0.44 (0.29 to 0.60)	<0.001	0.081
	upper extremity	reference value		
	lower extremity	0.33 (-0.016 to 0.68)	0.062	0.18
	unclear	-0.052 (-0.51 to 0.40)	0.83	0.18
PROMIS PF CAT	NTPQ	-0.40 (-0.57 to -0.24)	<0.001	0.084
	pain	-0.20 (-0.37 to -0.040)	0.015	0.084
	upper extremity	reference value		
	lower extremity	-0.32 (-0.65 to -0.011)	0.058	0.17
	unclear	0.14 (-0.29 to 56)	0.53	0.22
All coefficients are standardized, CI = confidence interval. NPTQ = negative pain thought questionnaire, PROMIS PF CAT = Patient-Reported Outcomes Measurement Information System Physical Function Computer Adaptive Test				

Appendix 3.2. The effect of the confounder injury location on generalized structural equation model with PCS				
Dependent variable	Independent variable	Coefficient	P value	Standard Error
<i>Model without confounder</i>				
PCS	pain	0.56 (0.42 to 0.71)	<0.001	0.074
PROMIS PF	PCS	-0.28 (-0.47 to -0.85)	0.005	0.098
	pain	-0.21 (-0.40 to -0.21)	0.030	0.098
<i>Model with confounder</i>				
PCS	pain	0.55 (0.41 to 0.70)	<0.001	0.075
	upper extremity	reference value		
	lower extremity	0.22 (-0.10 to 0.55)	0.18	0.17
	unclear	0.16 (-0.10 to 0.55)	0.22	0.47
PROMIS PF	PCS	-0.26 (-0.44 to -0.69)	0.007	0.095
	pain	-0.24 (-0.43 to -0.054)	0.012	0.096
		upper extremity	reference value	
	lower extremity	-0.40 (-0.75 to 0.049)	0.026	0.18
	unclear	0.20 (-0.25 to 0.65)	0.39	0.23
All coefficients are standardized, CI = confidence interval. PROMIS PF = Patient-Reported Outcomes Measurement Information System Physical Function, PCS = pain catastrophizing scale				

Appendix 3.3. The effect of the confounder injury location on generalized structural equation model with TSK				
Dependent variable	Independent variable	Coefficient	P value	Standard Error
<i>Model without confounder</i>				
TSK	pain	0.38 (0.22 to 0.54)	<0.001	0.083
PROMIS PF	TSK	-0.39 (-0.55 to -0.22)	<0.001	0.083
	pain	-0.22 (-0.38 to -0.057)	0.008	0.083
<i>Model with confounder</i>				
TSK	pain	0.38 (0.22 to 0.54)	<0.001	0.082
	upper extremity	reference value		
	lower extremity	0.41 (0.054 to 0.77)	0.024	0.18
	unclear	0.040 (-0.43 to 0.51)	0.87	0.24
PROMIS PF	TSK	-0.35 (-0.52 to -0.19)	<0.001	0.083
	pain	-0.18 (-0.34 to -0.01)	0.003	0.083
	upper extremity	reference value		
	lower extremity	-0.31 (-0.65 to 0.31)	0.075	0.17
	unclear	0.17 (-0.26 to 0.61)	0.44	0.22
All coefficients are standardized, CI = confidence interval. PROMIS PF = Patient-Reported Outcomes Measurement Information System Physical Function, TSK = Tampa scale of kinesiophobia				