

Supplementary Table 1: Baseline Survey Measures and Description

Construct	Scale / Test	# Items	Example items	Psychometric Information
Demographics	Self report of demographic information	31	<ul style="list-style-type: none"> <li>Age (in years)</li> <li>Please describe your gender identity. Check all that apply</li> <li>My current height in feet is (please put N/A if you prefer not to say):</li> </ul>	
Overall well-being	PROMIS Global Health Rating <sup>98</sup>	4	<ul style="list-style-type: none"> <li>In general, how would you rate your physical health?</li> </ul>	<ul style="list-style-type: none"> <li>Good internal consistency of physical health (Cronbach's alpha, <math>\alpha = 0.81</math>) and mental health (<math>\alpha = 0.86</math>) scales</li> </ul>
Experience and impact related to menstruation	The Menstrual Disorder of Teenagers (MDOT) Scale <sup>99,100</sup>	15	<ul style="list-style-type: none"> <li>Do you have periods?</li> <li>I have had problems with my period</li> </ul>	<ul style="list-style-type: none"> <li>Used as Gold Standard to validate Period ImPact and Pain Assessment (PIPPA) tool, although not validated itself due to burgeoning area of literature and need for more scales of menstrual disturbance</li> </ul>
Trait-level emotional reactivity	Perth Emotional Reactivity Scale (PERS) <sup>101</sup>	30	<ul style="list-style-type: none"> <li>I tend to get happy very easily</li> <li>When I'm upset, it takes me quite a while to snap out of it</li> </ul>	<ul style="list-style-type: none"> <li>Concurrent validity proven through high correlations with similar validated scales</li> <li>Acceptable to excellent internal consistency: <math>\alpha = 0.79</math>-<math>0.94</math></li> </ul>
Embodiment	Experience of Embodiment Scale <sup>102</sup>	30	<ul style="list-style-type: none"> <li>I feel comfortable in my body</li> </ul>	<ul style="list-style-type: none"> <li>Moderate-high convergent validity with measures of body and self-esteem, self-surveillance, eating disorder attitudes, alexithymia, and depression</li> <li>Excellent internal consistency: <math>\alpha = 0.93</math></li> </ul>
Physical activity attitudes, intentions and motivations	Understand Individual Physical Activity – Sample Questionnaire (MPAC) <sup>73–75,103</sup>	18	<ul style="list-style-type: none"> <li>I possess the skills to do regular physical activity over the next 14 days if I wanted to</li> <li>If I did not reach a physical activity goal last month, I analyzed what went wrong</li> </ul>	<ul style="list-style-type: none"> <li>Established face validity</li> <li>Acceptable composite reliability for attitude, capability, and opportunity subscales <math>&gt; 0.70</math></li> </ul>
	Psychological Needs Satisfaction <sup>76</sup>	19	<ul style="list-style-type: none"> <li>I think I am pretty good at exercising</li> </ul>	<ul style="list-style-type: none"> <li>Good internal consistency of constructs: <math>\alpha = 0.77 - 0.88</math></li> </ul>

Well-being	EPOCH Measure of Adolescent Well-Being	20	<ul style="list-style-type: none"> <li>I get completely absorbed in what I am doing</li> <li>I have friends that I really care about</li> </ul>	<ul style="list-style-type: none"> <li>Excellent overall internal consistency: <math>\alpha = 0.90</math></li> <li>Good convergent and divergent validity with respective construct measures</li> </ul>
	Ontario Child and Health Survey (OCHS) <sup>104</sup>	25	<ul style="list-style-type: none"> <li>I am anxious or on edge</li> <li>I lose my temper</li> </ul>	<ul style="list-style-type: none"> <li>Average test-retest reliability: <math>\kappa = 0.67</math></li> <li>Good convergent validity</li> </ul>
	Center for Epidemiological Depression (CES-D) Scale <sup>105</sup>	20	<ul style="list-style-type: none"> <li>I felt depressed</li> <li>I felt lonely</li> </ul>	<ul style="list-style-type: none"> <li>Moderate predictive validity in identifying major depression in adolescents: pooled sensitivity = 0.81 and specificity = 0.82</li> </ul>
Adolescent perceptions of parenting practices	Adapted from the Physical Activity Parenting Practices (PAPP) Item Bank <sup>106</sup>	30	<ul style="list-style-type: none"> <li>My parent pushes me hard to improve at sports or physical activity</li> </ul>	<ul style="list-style-type: none"> <li>High reliability of each domain within the PAPP: <math>\alpha &gt; 0.80</math></li> </ul>
Knowledge of physical activity	Custom scale created for this study	7	<ul style="list-style-type: none"> <li>I know the rules for games or sports that I want to</li> </ul>	
Personality	Big Five Inventory (BFI) <sup>107</sup>	44	I see Myself as someone who... <ul style="list-style-type: none"> <li>Tends to find fault with others</li> <li>Is considerate and kind to almost everyone</li> </ul>	<ul style="list-style-type: none"> <li>High mean reliability across five subscales <math>\alpha = 0.83</math></li> </ul>
Physical competence	Squat <sup>87, 108</sup>	-		<ul style="list-style-type: none"> <li>High inter-rater reliability for squat: intraclass correlation (ICC) = 0.99</li> </ul>
	Stork stand <sup>87,109</sup>			<ul style="list-style-type: none"> <li>Face validity and good test-retest reliability for stork stand: <math>r = 0.87</math></li> </ul>

	Supine to stand <sup>86</sup>	-		<ul style="list-style-type: none"><li>Weak-to-moderate correlations with motor competence product measures among 13–17-year-olds</li></ul>
	Timed up and down stairs <sup>89</sup>	-		<ul style="list-style-type: none"><li>Excellent intra-rater, interrater, and test–retest reliability: ICC ≥ 0.94</li></ul>
	Overarm throw, two-handed catch <sup>110</sup>	-		

Supplementary Table 2: Start-of-Day Survey Measures and Description

Construct	Scale	# of Items	Example items	Psychometric Information
Mood and affect	Positive and Negative Affect Scale for Children (PANAS-C) <sup>80</sup>	10	<ul style="list-style-type: none"><li>Please indicate to what extent you felt this way today: Sad, Happy, Scared, Miserable, Cheerful, Proud, Afraid, Joyful, Mad, Lively</li></ul>	<ul style="list-style-type: none"><li>Good correlation of PA and NA scales with existing measures of depression and anxiety<sup>80</sup></li><li><math>\alpha = 0.92 - 0.94</math> for scale development and replication</li></ul>
Anxiety	Adapted from the Generalized Anxiety Disorder 7-item (GAD-7) <sup>114</sup>	2	<ul style="list-style-type: none"><li>Feeling nervous, anxious or on edge</li><li>Not being able to stop or control worrying</li></ul>	<ul style="list-style-type: none"><li>Excellent internal consistency: <math>\alpha = .92</math><sup>114</sup></li><li>Good test-retest reliability: ICC = 0.83</li></ul>
Physical activity	Adapted from Reasons for Exercise Inventory (REI) <sup>115</sup>	2	<ul style="list-style-type: none"><li>Do you plan on being physically active today?</li><li>If yes, select the reasons you are choosing to be active: to lose weight, to improve my mood, improve my overall health, etc.</li></ul>	
Sleep	Self-report of sleep quality and	6	<ul style="list-style-type: none"><li>What time did you go to bed last night?</li><li>How would you rate your sleep quality overall?</li></ul>	

	duration <sup>116</sup>			
Bedtime-screen time latency	Self-report of how long before bedtime participants turned off devices	1	<ul style="list-style-type: none"><li>How long before you fell asleep did you turn off your electronic devices (e.g. television / computer / smartphone)?</li></ul>	

Supplementary Table 3: End-of-Day Survey Measures and Description

Construct	Scale	# of Items	Example items	Psychometric Information
Embodiment	Experience of Embodiment Scale <sup>102</sup>	10	<ul style="list-style-type: none"><li>I feel comfortable in my body</li><li>I feel connected to my body</li><li>My dissatisfaction with my body has a negative effect on my social life</li></ul>	<ul style="list-style-type: none"><li>Moderate-High convergent validity with measures of body and self-esteem, self-surveillance, eating disorder attitudes, alexithymia, and depression</li><li>Excellent internal consistency: <math>\alpha = 0.93</math></li></ul>
Mood and affect	Positive and Negative Affect Scale for Children (PANAS-C) <sup>80</sup>	10	<ul style="list-style-type: none"><li>Please indicate to what extent you felt this way today: Sad, Happy, Scared, Miserable, Cheerful, Proud, Afraid, Joyful, Mad, Lively</li></ul>	<ul style="list-style-type: none"><li>Good correlation of PA and NA scales with existing measures of depression and anxiety</li><li><math>\alpha = 0.92 - 0.94</math> for scale development and replication</li></ul>
Anxiety	Generalized Anxiety Disorder 7-item Scale (GAD-7) <sup>114</sup>	2	<ul style="list-style-type: none"><li>Feeling nervous, anxious or on edge</li><li>Not being able to stop or control worrying</li></ul>	<ul style="list-style-type: none"><li>Excellent internal consistency: <math>\alpha = .92</math></li><li>Good test-retest reliability: intraclass correlation = 0.83</li></ul>

Physical activity	Self-report of physical activity for the day (durations, type, intensity, contextual factors)	14	<ul style="list-style-type: none"> <li>Have you been physically active today?</li> <li>How would you describe the difficulty of the activity?</li> <li>Did the activity take place indoors or outdoors?</li> <li>Was the activity alone or with others?</li> </ul>	
Stress	Perceived Stress Scale (PSS) <sup>79</sup>	10	<ul style="list-style-type: none"> <li>How often have you been upset because of something that happened unexpectedly?</li> <li>How often have you found that you could not cope with all the things that you had to do?</li> </ul>	<ul style="list-style-type: none"> <li>High reliability: Coefficient <math>\alpha = 0.84 - 0.86</math></li> <li>Good test-retest correlation: 0.85</li> </ul>
Screen Time	Self-report of time spent using digital media	7	<ul style="list-style-type: none"> <li>Please check your device and enter the amount of time spent on your phone today.</li> <li>Please estimate how much time (IN MINUTES) you used a computer or other electronic device (such as a tablet or smartphone) to PLAY GAMES</li> </ul>	
Sedentary behaviours	Self-report of time spent sitting during the day	1	<ul style="list-style-type: none"> <li>Please estimate how much time (in hours) did you spend sitting?</li> </ul>	
Climate / environment concerns		3	<ul style="list-style-type: none"> <li>Over the course of today, to what extent have you thought about issues related to climate change?</li> </ul>	
Emotional regulation	Cognitive emotion regulation questionnaire (CERQ) <sup>81</sup>	7	<ul style="list-style-type: none"> <li>You tried not to think about a problem or tried to forget all about it</li> <li>You decided to accept a situation or problem the way it is</li> </ul>	<ul style="list-style-type: none"> <li>Good – High reliability: <math>\alpha = 0.67 - 0.81</math></li> <li>Good convergent and divergent validity</li> </ul>
Pain, fatigue, and somatic symptoms	Self-report of pain and fatigue during the course of the day	5	<ul style="list-style-type: none"> <li>How much pain did you experience today?</li> <li>How much did fatigue interfere with your day?</li> </ul>	

