# Supplementary Material 1. Aerobic exercise progression protocol

Week	<b>Duration</b> (minutes)	<b>Intensity</b> (PCERT Level)		
1	10	4		
2	15	4		
3	15	5		
4	20	5		
5	20	6		
6	30	6		

PCERT, Pictorial Children's Effort Rating Table.

#### Supplementary Material 2. Youth and parent post-intervention questionnaires

#### **Youth Questionnaire**

# Overall Satisfaction

Please answer th	ne following questions	about your over:	all experie	nce with this program	
	uld you rate the qualit	•	•		
1. HOW WO	uid you rate the qualit	y of the program	i tilat you t	completed:	
4[	□ Excellent ³□ Go	ood <sup>2</sup> □ Fair	¹□ Poor		
2. Did you ş	get the kind of help yo	ou wanted in this	program?		
1[	□ No, definitely not	²□ no, not rea	lly		
3[	☐ yes, generally	<sup>4</sup> □ yes, definit	ely		
3. To what	extent has this progra	ım met your need	ds?		
4[	☐ Almost all of my ne	eds have been m	et ³□ m	nost of my needs have been	
m	net <sup>2</sup> □ only a few of m	ny needs have be	en met	$^{1}$ □ none of my needs have	
b	een met				
4. If a frien	d or relative were to s	ustain a concuss	ion, would	you recommend this program	n
to them?	?				
1[	□ No definitely not	²□ No, I don't t	hink so		
3[	☐ Yes, I think so	<sup>4</sup> □ Yes, definitel	у		
5. How sati	isfied are you with the	amount of help	you receiv	ed in this program?	
1[	☐ Quite dissatisfied	<sup>2</sup> □ Indifferent	or mildly d	issatisfied	
3[	☐ mostly satisfied	⁴□ very satisfie	ed		

6. Has participating in this program helped you to deal more effectively with concussion?

	$^4\square$ Yes, it helped a great deal	³□ Yes, it help	ped somewhat
	$^2\square$ No, it really did not help	¹□ No, it seem	ned to make things worse
7. In an o	overall, general sense, how satisfi	ed are you with	n this program?
	<sup>4</sup> □ Very satisfied	³□ Mostly	y satisfied
	<sup>2</sup> □ Indifferent or mildly dissatis	fied ¹□ Quit	te dissatisfied
8. If you	were to seek help again for a cor	cussion, would	you come back to this program if
it was	available?		
	$^{1}$ ☐ No definitely not $^{2}$ ☐ no,	I don't think so	
	<sup>3</sup> □ Yes, I think so <sup>4</sup> □ Yes, o	definitely	
The Rehabilit	ation Program		
completed.	the following questions your exp yed the exercise program.	perience with th	e rehabilitation program that you
	☐ Strongly Agree ☐ Agree	☐ Disagree	☐ Strongly Disagree
10. I think	the exercise program was:		
	☐ Very Helpful ☐ Somewhat	Helpful □ S	omewhat Unhelpful
	☐ Very Unhelpful		
11. The ex	kercise intensity manual helped n	ne understand l	now the exercise should feel.
	☐ Strongly Agree ☐ Agree	☐ Disagree	☐ Strongly Disagree
12. I was a	able to maintain the proper exerc	cise intensity pr	escribed by my research therapist.
	☐ Strongly Agree ☐ Agree	☐ Disagree	☐ Strongly Disagree

13. How often were you able to complete the home exercise program?
☐ Always ☐ Sometimes ☐ Rarely ☐ Never
I was able to complete/ 18 days of my home exercise program.
14. I think the education and support that I received was:
☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful
☐ Very Unhelpful
15. Which aspect of the rehabilitation program do you think was most helpful?
☐ Aerobic exercise ☐ Coordination exercise ☐ Education and Support
16. Which aspect of the rehabilitation program do you think was <u>least</u> helpful?
☐ Aerobic exercise ☐ Coordination exercise ☐ Education and Support
17. I received enough support from the research therapist in order to complete the exercise
program effectively.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
18. More frequent appointments with the research therapist would have helped me
complete the exercise program more effectively.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
<u>Telerehabilitation Platform</u>
Please answer the following questions about your experience with receiving care remotely via telerehabilitation.
19. The videoconferencing system was simple and easy to use.

	Agree	1	2	3□	4□	5	6	<sup>7</sup> □ Disagree		
20. The w	ay I inte	racte	d with	n the v	ideoc	onfer	encing	g was pleasant.		
	Agree	1	2□	3	4	5□	6□	<sup>7</sup> □ Disagree		
21. I could	d easily o	comm	nunica	te wit	h the	resea	rch th	erapist using the videoconferencin	g	
systen	n.									
	Agree	1	2	3	4	5	6	<sup>7</sup> □ Disagree		
22. Using	the vide	ocon	feren	cing sy	/stem	, I was	able	to see the research therapist as we	ell as it	
we ha	d met ir	pers	on.							
	Agree	<sup>1</sup>	2	3□	4□	5□	6□	<sup>7</sup> □ Disagree		
23. I expe	rienced	techr	nical p	robler	ns coi	nnecti	ng to	the videoconferencing system.		
	Agree	1	<sup>2</sup>	3	4□	5	6□	<sup>7</sup> □ Disagree		
24. Techn	ical issu	es de	crease	ed my	ability	y to co	mplet	te the program effectively.		
	Agree	1	$^2\square$	3□	4□	5□	6	<sup>7</sup> □ Disagree		
25. When	ever the	ere wa	as a te	chnol	ogy is	sue it	was re	esolved quickly.		
	Agree	<sup>1</sup>	<sup>2</sup>	3	4□	5	6□	<sup>7</sup> □ Disagree		
26. I felt I	was abl	e to e	expres	s mys	elf eff	ective	ly dur	ring videoconferencing appointmen	its.	
	Agree	<sup>1</sup>	$^2\square$	3□	4□	5□	6□	<sup>7</sup> □ Disagree		
27. I felt c	27. I felt comfortable communicating with the research therapist during videoconferencing									
appoir	ntments	i.								
	Agree	<sup>1</sup>	2	3	4□	5	6□	<sup>7</sup> □ Disagree		

28. Videoconferencing appointments were an appropriate method for delivering this										
rehabilitation program.										
A	gree ¹□	$^2\square$	3□	4□	5	6□	<sup>7</sup> □ Disagree			
29. This telerehabilitation program improved my access to concussion services.										
A	gree ¹□	$^2\square$	3□	4□	5	6□	<sup>7</sup> □ Disagree			
30. This telerehabilitation program saved me time travelling to a concussion specialist clinic										
Agree $^1\square$ $^2\square$ $^3\square$ $^4\square$ $^5\square$ $^6\square$ $^7\square$ Disagree										
We appreciate your feedback – Thank you!										

# **Parent Questionnaire**

#### Overall Satisfaction

Please answer the following questions about your overall experience with this telerehabilitation program.

1.	How would you rate the quality of the program that your child completed?
	<sup>4</sup> □ Excellent <sup>3</sup> □ Good <sup>2</sup> □ Fair <sup>1</sup> □ Poor
2.	Did your child get the kind of help you wanted from this program?
	$^1\square$ No, definitely not $^2\square$ No, not really
	<sup>3</sup> ☐ Yes, generally <sup>4</sup> ☐ Yes, definitely
3.	To what extent has the program met your child's needs?
	$^4\Box$ Almost all of my needs have been met $^3\Box$ Most of my needs have been met
	$^2\square$ Only a few of my needs have been met $^1\square$ None of my needs have been
	met
4.	If a friend or relative's child were to sustain a concussion, would you recommend this
	program to them?
	$^1\square$ No definitely not $^2\square$ No, I don't think so
	$^3\square$ Yes, I think so $^4\square$ Yes, definitely
5.	How satisfied are you with the amount of help your child received in this program?
	$^1\Box$ Quite dissatisfied $^2\Box$ Indifferent or mildly dissatisfied
	<sup>3</sup> ☐ Mostly satisfied <sup>4</sup> ☐ Very satisfied
6.	Has this program has helped your child to deal more effectively with concussion?

2 No, it really did not help 1 No, it seemed to make things worse  7. In an overall, general sense, how satisfied are you with the program that your child completed?  4 Very satisfied 3 mostly satisfied 2 Indifferent or mildly dissatisfied 1 Quite dissatisfied  8. If you were to seek help again for a concussion, would you come back to this program if it was available?  1 No, definitely not 2 No, I don't think so 3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  Strongly Agree Agree Disagree Strongly Disagree I don't know  10. I think the exercise program was for my child: Very Helpful Somewhat Helpful Somewhat Unhelpful Very Unhelpful		$^4$ □ Yes, it helped a great deal $^3$ □ yes, it helped somewhat
completed?  4 Very satisfied 3 mostly satisfied 2 Indifferent or mildly dissatisfied 1 Quite dissatisfied  8. If you were to seek help again for a concussion, would you come back to this program if it was available?  1 No, definitely not 2 No, I don't think so 3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.    Strongly Agree   Agree   Disagree   Strongly Disagree   I don't know  10. I think the exercise program was for my child:   Very Helpful   Somewhat Helpful   Somewhat Unhelpful		$^2\square$ No, it really did not help $^1\square$ No, it seemed to make things worse
4   Very satisfied   3   mostly satisfied   2   Indifferent or mildly dissatisfied   1   Quite dissatisfied   8. If you were to seek help again for a concussion, would you come back to this program if it was available?   1   No, definitely not   2   No, I don't think so   3   Yes, I think so   4   Yes, definitely   Yes, definitely   The Rehabilitation Program   Please answer the following questions about your impressions of the rehabilitation program that your child completed.   9. My child enjoyed the exercise program.     Strongly Agree   Agree   Disagree   Strongly Disagree   I don't know   10. I think the exercise program was for my child:   Very Helpful   Somewhat Helpful   Somewhat Unhelpful	7. I	In an overall, general sense, how satisfied are you with the program that your child
2 Indifferent or mildly dissatisfied 1 Quite dissatisfied  8. If you were to seek help again for a concussion, would you come back to this program if it was available?  1 No, definitely not 2 No, I don't think so  3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  □ Strongly Agree □ Agree □ Disagree □ Strongly Disagree □ I don't know  10. I think the exercise program was for my child: □ Very Helpful □ Somewhat Helpful □ Somewhat Unhelpful	(	completed?
8. If you were to seek help again for a concussion, would you come back to this program if it was available?  1 No, definitely not 2 No, I don't think so  3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.    Strongly Agree   Agree   Disagree   Strongly Disagree   I don't know  10. I think the exercise program was for my child:    Very Helpful   Somewhat Helpful   Somewhat Unhelpful		<sup>4</sup> □ Very satisfied <sup>3</sup> □ mostly satisfied
it was available?  1 No, definitely not 2 No, I don't think so  3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  Strongly Agree Agree Disagree Strongly Disagree  I don't know  10. I think the exercise program was for my child:  Very Helpful Somewhat Helpful Somewhat Unhelpful		$^2\square$ Indifferent or mildly dissatisfied $^1\square$ Quite dissatisfied
1  No, definitely not 2 No, I don't think so 3 Yes, I think so 4 Yes, definitely  The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  □ Strongly Agree □ Agree □ Disagree □ Strongly Disagree □ I don't know  10. I think the exercise program was for my child: □ Very Helpful □ Somewhat Helpful □ Somewhat Unhelpful	8. I	If you were to seek help again for a concussion, would you come back to this program if
The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  □ Strongly Agree □ Agree □ Disagree □ Strongly Disagree □ I don't know  10. I think the exercise program was for my child: □ Very Helpful □ Somewhat Helpful □ Somewhat Unhelpful	i	it was available?
The Rehabilitation Program  Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  Strongly Agree Agree Disagree Strongly Disagree  I don't know  10. I think the exercise program was for my child:  Very Helpful Somewhat Helpful Somewhat Unhelpful		$^1\square$ No, definitely not $^2\square$ No, I don't think so
Please answer the following questions about your impressions of the rehabilitation program that your child completed.  9. My child enjoyed the exercise program.  Strongly Agree Agree Disagree Strongly Disagree  I don't know  10. I think the exercise program was for my child:  Very Helpful Somewhat Helpful Somewhat Unhelpful		<sup>3</sup> □ Yes, I think so <sup>4</sup> □ Yes, definitely
your child completed.  9. My child enjoyed the exercise program.  Strongly Agree Agree Disagree Strongly Disagree  I don't know  10. I think the exercise program was for my child:  Very Helpful Somewhat Helpful Somewhat Unhelpful	The Rel	habilitation Program
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐ I don't know  10. I think the exercise program was for my child: ☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful		
☐ I don't know  10. I think the exercise program was for my child:  ☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful	9. 1	My child enjoyed the exercise program.
10. I think the exercise program was for my child:  ☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful		☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful		□ I don't know
	10. I	I think the exercise program was for my child:
☐ Very Unhelpful		☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful
		☐ Very Unhelpful
11. The exercise intensity manual helped my child understand how the exercise should feel.	11.	The exercise intensity manual helped my child understand how the exercise should feel.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree		☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

☐ I don't know
12. My child was able to maintain the proper exercise intensity prescribed by the research
therapist.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
□ I don't know
13. How often was your child able to complete the home exercise program?
☐ Always ☐ Sometimes ☐ Rarely ☐ Never ☐ I don't know
14. I think the education and support my child received was:
☐ Very Helpful ☐ Somewhat Helpful ☐ Somewhat Unhelpful
☐ Very Unhelpful ☐ I don't know
15. Which aspect of the rehabilitation program do you think was most helpful for your
child?
☐ Aerobic exercise ☐ Coordination exercise ☐ Education and support
16. Which aspect of the rehabilitation program do you think was <u>least</u> helpful for your
child?
$\square$ Aerobic exercise $\square$ Coordination exercise $\square$ Education and support
17. I think my child received enough support from the research therapist in order to
complete the exercise program effectively.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
18. I think more frequent meetings with the research therapist would have helped my child
complete the exercise program more effectively.

☐ Strongly	Agree		Agree		Disag	gree	☐ Strongly Disagree		
Telerehabilitation platform									
Please answer the following questions about your impressions of receiving care remotely via elerehabilitation.  19. The videoconferencing system was simple and easy for my child to use.									
Agree ¹□	2	3	4	5	6	7□ □	Disagree		
20. The way my child interacted with the videoconferencing system was pleasant.									
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ [	Disagree		
21. My child could eas	21. My child could easily communicate with the research therapist using the								
videoconferencing	syste	m.							
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ □	Disagree		
22. Using the videoco	nferen	cing s	ystem	, my c	hild w	as abl	le to see the research therapist as		
well as if they had	met ir	pers	on.						
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ [	Disagree		
23. My child experien	ced ted	chnica	l prob	lems	conne	cting t	to the videoconferencing system.		
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ [	Disagree		
24. Technical issues de	ecreas	ed my	child'	's abili	ity to	effecti	vely complete the program.		
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ [	Disagree		
25. Whenever there w	as a te	echno	logy is	sue it	was r	esolve	ed quickly.		
Agree ¹□	2	3	4	5	6	<sup>7</sup> □ [	Disagree		
26. My child was able	to exp	ress h	im/he	erself	effecti	ively d	uring videoconferencing		
appointments.									

		Agree	1	2	3	4	5	6□	<sup>7</sup> □ Disagree
27.	I felt c	omforta	able h	aving	my cł	nild co	mmur	nicate	with the research therapist using
	videod	onferer	ncing	appoi	ntmei	nts.			
		Agree	1	2	3	4	5	6	<sup>7</sup> □ Disagree
28.	Video	confere	ncing	appoi	ntme	nts we	ere an	appro	opriate method for delivering this
	rehabi	litation	prog	ram.					
		Agree	<sup>1</sup>	2	3	4□	5	6	<sup>7</sup> □ Disagree
29.	This te	lerehab	oilitati	ion pr	ogran	ı impr	oved i	my ab	ility to access concussion services for my
	child.								
		Agree	1	2	3	4	5	6	<sup>7</sup> □ Disagree
30.	This te	elerehab	oilitati	ion pr	ogran	ı save	d my f	amily	time travelling to a concussion specialist
	clinic.								
		Agree	1	2	3	4	5	6□	<sup>7</sup> □ Disagree

We appreciate your feedback - Thank you!