

Supplemental material

Universal prevention through a digital health platform reduces injury incidence in youth athletics (track and field): a cluster randomized controlled trial.

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SUPPLEMENTARY MATERIAL

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Supplemental material

Appendix A. Randomization of clubs.

Swedish Athletics clubs are differently organized, are of different size and type; e.g. they have varying coaching structures and may have a primary focus on adult elite or child/youth athlete development.

The clubs were therefore classified into 4 strata based on club size (small (<200 youth athletes) or large (200 or more youth athletes)) and coaching structure (employed youth coaches or parent/peer volunteer coaching):

stratum i; small clubs with parent/peer coaches

stratum ii; small clubs with employed coaches

stratum iii; large clubs with parent/peer coaches

stratum iv; large clubs with employed youth coaches

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Appendix B: Screenshots, example of the digital health platform content

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Puberty and Training
Click to enlarge image Puberty is the period when the body develops from child to adult. Puberty usually starts between the ages of 10 and 13, ...

Avoiding injuries and ill-health
Sport and exercise are important for general well-being and to help keep us healthy, but unfortunately, injuries and ill-health can also occur through ...

The most common injuries in Athletics
Click to enlarge image This section provides information on some of the most common injuries that afflict athletics athletes. It ...

Planning for training
Knowledge of sports science and training

Mental illness
Exercise and physical activity are things

Illnesses
This section provides information about

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The most common injuries in Athletics

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This section provides information on some of the most common injuries that afflict athletics athletes.

It provides special information about some injuries that can occasionally occur in the growing athletes, age groups 11-19 years, that it is beneficial to be aware of. At these ages, it is relatively unusual to have overload injuries in the shoulder or elbow regions. If a young athlete has persistent discomfort in these areas, i.e. for more than 4 to 6 weeks, a Doctor should be consulted.

Acute, traumatic injuries in athletics are relatively rare. Young athletes that sustain painful, acute (suddenly occurring) injuries should seek medical advice in order to get a diagnosis. These types of injuries are not covered on this page as they should be managed by medical professionals.

Facts and information bank

Athletics for a young athlete's wellbeing
Planning for training
Puberty and Training
Diet & Sleep (Recovery)
Avoiding injuries and ill-health
About pain and injuries
[The most common injuries in Athletics](#)
Illnesses
About Rehabilitation

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Appendix C. Questionnaire used for data collection

Questionnaire	Questions	
Baseline questionnaire youth	Are you a: - Boy/Girl?	
	Date of birth (YYMMDD)	
	What is your height? (cm)	
	What is your weight? (kg)	
	If a girl, have you had your first period? - Yes/No	
	On average, how many hours do you sleep per night? (hours)	
	At what age did you start with athletics?	
	Do you train and compete in any sport other than athletics? - Yes/No	
	Which is your club?	
	How many coaches do you have? (in athletics)	
	On average, how many hours per week did you train athletics in the past year? (hours)	
	On average, how many times per week did you train athletics in the past year? (sessions)	
	During the last 12 months, have you had an illness that caused you to completely or partially refrain from athletics training for a continuous period of more than 3 weeks? - Yes/No - If yes, what was the diagnosis? (free text)	
	During the last 12 months, have you had an injury that caused you to completely or partially refrain from athletics training for a continuous period of more than 3 weeks? - Yes/No - If yes, what was the diagnosis? (free text)	
	Are you injury free today? - Yes/No - If no, what is the diagnosis? (free text)	
	Training report every 2 weeks	Has athletics been trained as planned in the last two weeks? - Yes, completely normal - No. If not, please provide the reason o New injury during the last two weeks o An ongoing, already reported injury o Infection (eg cold, sore throat or similar) o Other illness (eg stomach illness, appendicitis, accident) o Other (eg holidays, vacations, done other things)
		How many athletics sessions have been completed in the last two weeks? (numbers)
Number of hours of total training for these last two weeks (including warm-ups and cool down)? (hours) - In athletics - In other sports		
Has your daughter / son competed in athletics during these two weeks? - Yes/No - If yes, how many days?		
Do you have a NEW injury to report? - Yes/No - If yes, please respond to the new injury report form. (next survey)		
New injury report form		Do you have a NEW INJURY to report for your daughter / son? - No (go to the bottom of the form and send your answer!) - Yes (Answer the questions below!)
	When did the injury occur? (YYMMDD)	
	Did the injury occur in an athletic context? - Yes/No	

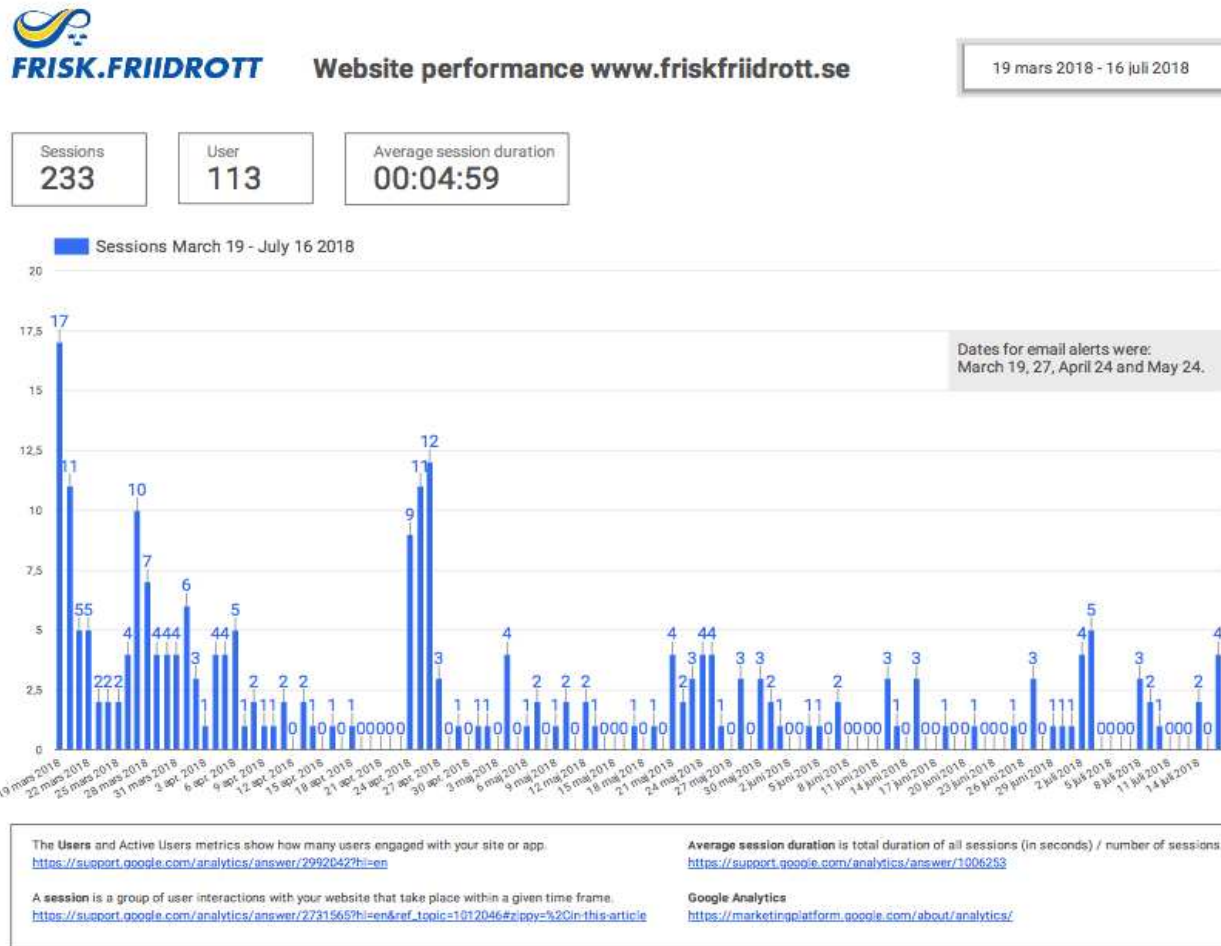
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	<ul style="list-style-type: none"> - If yes, in what context of athletics? (Training/competition, indoor/outdoor) - If no, in what context? (other sport, leisure etc)
	Which body part has been injured? (various options provided)
	What is the preliminary diagnosis of the injury? (various options provided and free text)
	Who made the diagnosis? (doctor, physiotherapist, coach, myself, other)
	Who decided that your daughter / son should stop training? (tick one or more options)
	What do you consider to be the cause of the injury? (various options provided and free text)
	How long is it estimated to take before your daughter / son is back in normal training? (various options provided, days/weeks/months)
	Has your daughter / son had an injury in the same body part in the past year?
	<ul style="list-style-type: none"> - Yes/No - If yes, which was the diagnosis? - If yes, how long has your daughter / son been back in normal (full) training after this injury? (various options provided, days/weeks)
Baseline questionnaire adult	I am a) coach b) parent / carer c) I participate as both coach and parent in this study.
	Are you a:
	<ul style="list-style-type: none"> - Man/Woman/Other
	Date of birth (YYMMDD)
	What is the size of your residence?
	<ul style="list-style-type: none"> a. less than 5,000 inhabitants b. 5000-20000 inhabitants c. 21000-50000 inhabitants d. 51000- 100,000 inhabitants e. More than 100,000 inhabitants
	What is your highest degree?
	<ul style="list-style-type: none"> a. Compulsory school diploma or equivalent b. High school diploma c. Bachelor / college degree d. Master's / master's degree e. Doctoral degree
	Were you born in?
	<ul style="list-style-type: none"> a. Sweden b. Norway / Finland / Denmark or Iceland c. Another country in Europe d. Other country outside Europe
	Have you been an athlete yourself?
	<ul style="list-style-type: none"> a. Yes, if yes, in which sport / sports have you been most active in? b. No
	Which is your club? (free text)
	Are you a coach today? If yes, enter sports. (free text)
	In which sport do you do your main coaching job?
<ul style="list-style-type: none"> a. Athletics b. Other sport, (free text) 	
Have you received any form of coaching training/education? (various options provided and free text)	

NB! The questions in Appendix C have not been translated from Swedish to English using a validated method.

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Appendix D.



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Appendix E: Sensitivity analysis of the primary endpoint

As sensitivity analysis, we have evaluated the primary endpoint with a worst-case and a best-case strategy assuming in the worst-case athletes with missing data having the behaviour as the control group, i.e. 40 % to be injured, and in the best case no athletes to be injured. Time to injury and time to censoring of data was simulated based on the observed cases.

Worst Case

	Healthy	Injuries	Total
Control	53	36	89
Intervention	50	20	70
Total	89	46	135

Best Case

	Healthy	Injuries	Total
Control	57	32	89
Intervention	56	14	70
Total	89	46	135

Worst-case scenario gives the following result hazard ratio [HR], 0.71; χ^2 , 2.825; $p=0.091$) and best-case scenario gives [HR], 0.56; χ^2 , 5,168; $p=0.023$). Both best- and worst-case scenarios apply the Intention-to-treat approach, i.e. all randomized subjects.