Result report

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Results

Over the seasons 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21, 178 players were diagnosed with a concussion. Due to incomplete protocols, concussion diagnosis not confirmed, concussion confirmed/diagnosed beyond the 3h cooling time window (n=14), red flags or direct hospital transport (n=3), or cooling time <45 minutes (n=24), 41 protocols were excluded. Thus, 137 SRCs were available for analysis shown in Table 1.

	2016–17	**2017–18**	**2018–19**	**2019–20**	**2020–21**	**Total**
Intervention	2	10	6	29	15	62
Control	8	7	37	14	9	75
Nr Intervention/Control teams	5/3	6/3	6/8	14/2	14/2	-
Total	10	17	43	43	24	137

Table 1: *Number of sports-related concussions in the two groups per season. The higher number of players in the intervention group in recent seasons is due of a higher number of teams being in the intervention group than in the earlier seasons.*

No difference in mean age (26.1 ± 5.2 years vs 26.2 ± 4.8 years) and number of previous concussions (1.5 ± 1.2 vs. 1.9 ± 1.6) were found between the intervention and control group.

Number of days until return-to-play of the two groups are shown in Figure 1.

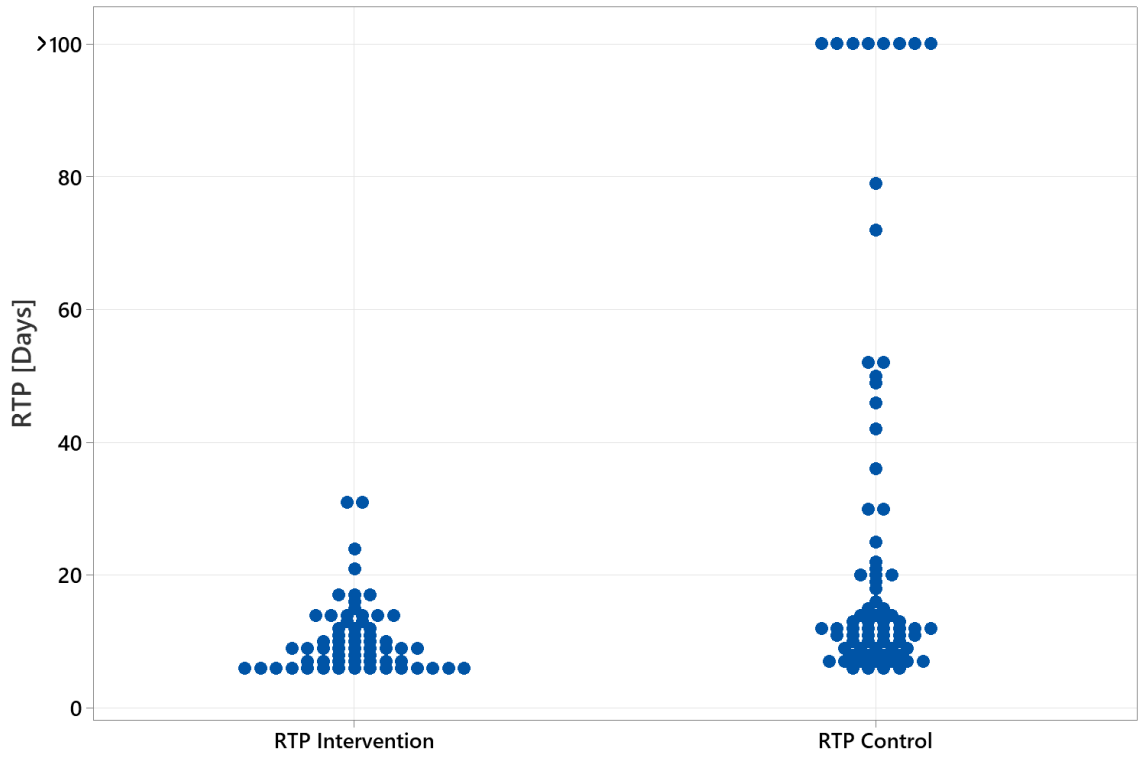

Figure 1: *The figure shows individual players' Return To Play [days]*

The median time to Return-To-Play was 9 days in intervention group and 12 days in the control group (p <0.0001). The range of Return-To-Play was 6 – 31 days in intervention group and 6 - > 100 days in control group. The proportion of players in the groups out more than 7, 14, 21, 28, 56 and 100 days is shown in Table 2, along with p-values for difference between the groups.

Days	Intervention (%)	Control (%)	p-value for difference
6 (minimum)	100	100	-
≥7	76	95	0,002
≥14	24	44	0,019
≥21	6	29	0,001
≥28	3	25	0,000
≥56	0	13	0,002
>100	0	11	0,008

Table 2: *Percentage of player absent in the groups after 6,7,14,21,28,56 and <100 days respectively with corresponding p-value for test of difference.*

The result for SSS prior and SSS post treatment, i.e. evaluated symptom severity, is shown in Table 3.

Sample	N	Mean	Median	StDev	p-value
SSS prior	36	22.1	-	15.1	
SSS post	36	16.1	-	12.6	
$median_{difference}$	36	-	5	-	0.001

Table 3: *The mean Symptom severity score (SSS) prior and post treatment and the median difference.*

RTP vs SSS prior to cooling for treated players is shown in Figure 2. There was no correlation between SSS prior and RTP in the intervention group (the Spearman correlation coefficient 0.17, 95% CI (-0,153; 0,458)).

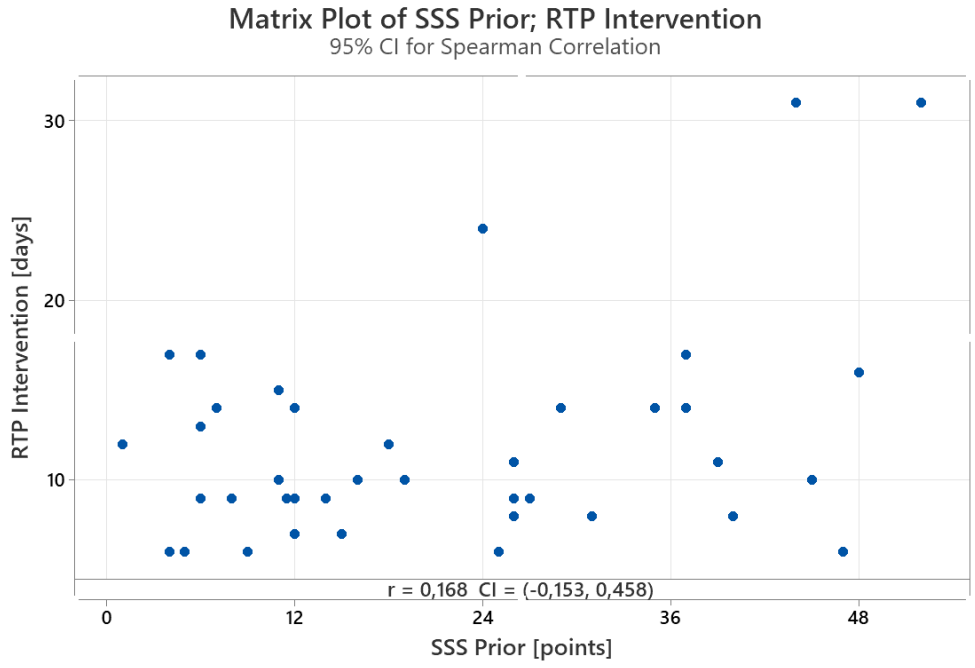

Figure 2: *There was no correlation between the symptom severity score prior treatment (SSS prior) and Return To Play in the intervention group.*