Table S1: Injury rate comparisons between genders only. GEE model on injury rate per season. Reference level: Gender = Male
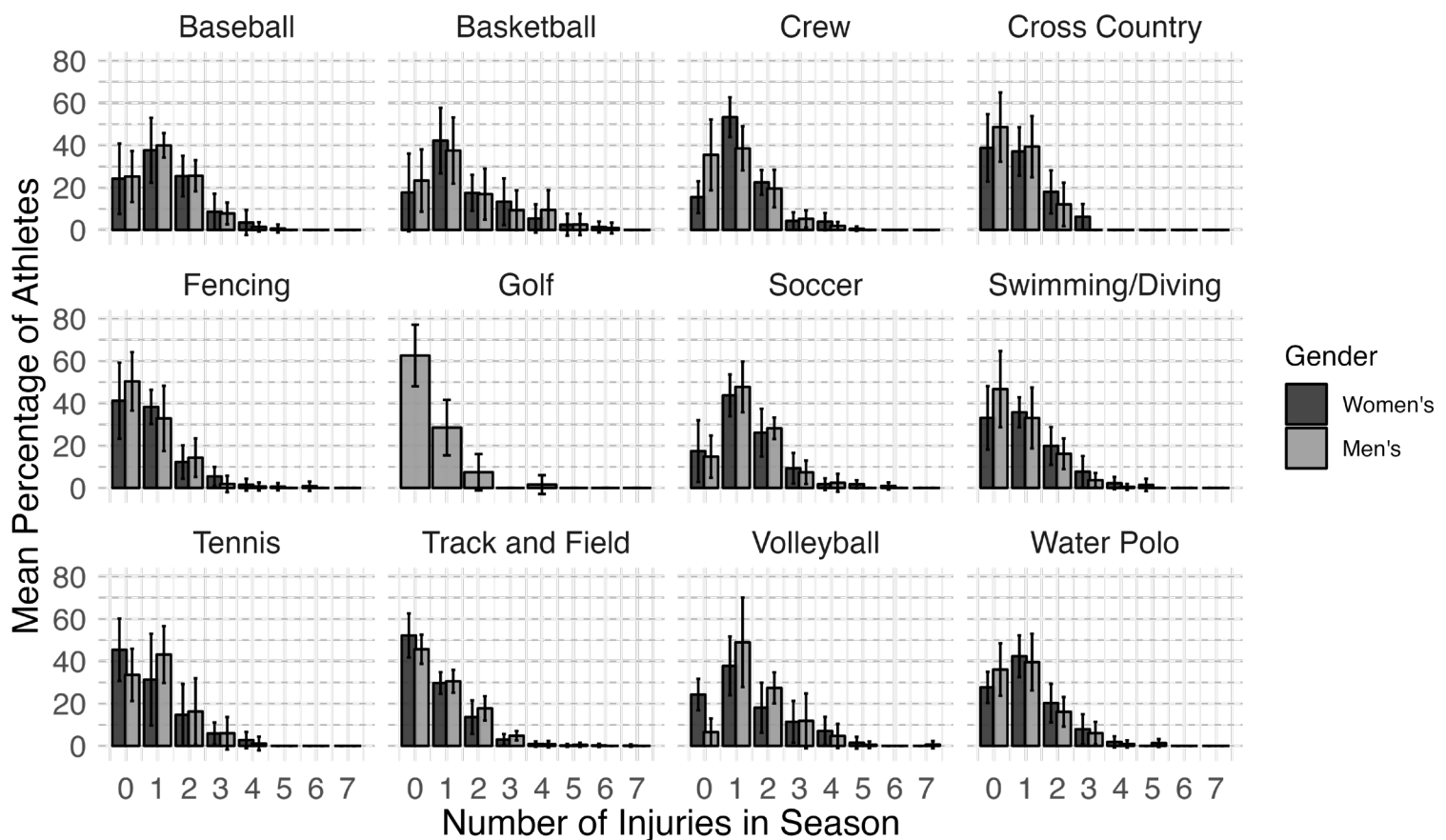
	Estimate	Std.err	Incidence Rate Ratio	95% CI	p-value
(Intercept)	0.025	0.022	1.025	(0.982, 1.070)	0.254
genderF	0.100	0.031	1.105	(1.040, 1.175)	0.001**

Table S2: Main effects analysis using GEE models on injury rate per week with up to two-way interactions between gender, sport, body region, and training hours

	P.Value
Main effects with body region x total hours interaction	
Gender	0.111
Sport	0.005
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.314
Body Region x Total Hours	0.729
All two-way interactions	
Gender	0.456
Sport	0.031
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.230
Gender x Sport	0.568
Gender x Body Region	0.999
Gender x Total Hours	0.294
Sport x Body Region	0.428
Sport x Total Hours	0.440
Body Region x Total Hours	0.764
Remove gender x body region	
Gender	0.456
Sport	0.032
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.231
Gender x Sport	0.554
Gender x Total Hours	0.292
Sport x Body Region	0.424
Sport x Total Hours	0.440
Body Region x Total Hours	0.758
Remove total hours x body region	
Gender	0.450
Sport	0.033
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.238
Gender x Sport	0.558
Gender x Total Hours	0.294
Sport x Body Region	0.391
Sport x Total Hours	0.439
Remove gender x sport	
Gender	0.452
Sport	0.032
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.250
Gender x Total Hours	0.128
Sport x Body Region	0.407
Sport x Total Hours	0.428
Remove total hours x sport	
Gender	0.572
Sport	0.037
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.220
Gender x Total Hours	0.076
Sport x Body Region	0.420
Remove sport x body region	
Gender	0.575
Sport	0.077
Body Region	< 0.001***
Total Hours	< 0.001***
Academic Year	0.295
Gender x Total Hours	0.077
Remove academic year	
Gender	0.589
Sport	0.075
Body Region	< 0.001***
Total Hours	< 0.001***
Gender x Total Hours	0.077

Table S3: Comparisons of injury rate between genders by sport

	Unadjusted P-value	P-value (Bonferroni)	Difference (%)	95% CI Adjusted by Bonferroni
Baseball	0.261	>0.99	12.09	(−18.4, 42.57)
Basketball	0.668	>0.99	7.22	(−40.5, 54.94)
Crew	<0.001***	0.001**	30.16	(8.12, 52.19)
Cross Country	0.005**	0.055	29.58	(−0.34, 59.49)
Fencing	0.059	0.645	24.09	(−12.07, 60.24)
Soccer	0.428	>0.99	7.49	(−19.31, 34.29)
Swimming/Diving	<0.001***	0.009**	34.9	(5.39, 64.41)
Tennis	0.608	>0.99	−8.33	(−54.41, 37.74)
Track and Field	0.199	>0.99	−10.3	(−33.04, 12.43)
Volleyball	0.126	>0.99	−19.94	(−56.95, 17.07)
Water Polo	0.381	>0.99	9.84	(−22.02, 41.71)

Percentage of Athletes with Given Number of Injuries Per Academic Year

Figure S1: Average percentage of athletes who incurred a specific number of injuries per season across the eight seasons for each of the participating sports.

Table S4: Comparisons of injury rate between genders by body region

	Unadjusted P-value	P-value (Bonferroni)	P-value (Bonferroni-Holm)	Difference (%)	95% CI Adjusted by Bonferroni
Head	0.317	1.000	0.469	0.92	(−1.51, 3.34)
Lower Extremity	<0.001***	<0.001***	<0.001***	8.76	(3.3, 14.21)
Miscellaneous	0.052	0.314	0.262	0.61	(−0.21, 1.43)
Spine	0.111	0.664	0.442	1.08	(−0.72, 2.88)
Trunk	0.234	1.000	0.469	1.9	(−2.33, 6.13)
Upper Extremity	0.141	0.848	0.442	−2.21	(−6.14, 1.73)

Table S5: GEE model on injury rate per week per season adjusting for academic year. Reference levels: Gender = Male, Sport = Baseball/Softball, academicYear = 2012-2013.

	Estimate	Std.err	Incidence Rate Ratio	95% CI	p-value	χ^2 value	$Pr(>\chi^2)$
(Intercept)	−2.533	0.094	0.079	(0.066, 0.095)	<0.001***		
week	−0.044	0.001	0.957	(0.955, 0.959)	<0.001***		
genderF	0.101	0.055	1.106	(0.994, 1.232)	0.065		
sportBasketball	0.223	0.137	1.250	(0.955, 1.636)	0.103	$\chi^2_{11} = 83.358$	<0.001***
sportCrew	−0.084	0.102	0.920	(0.752, 1.124)	0.412		
sportCross Country	−0.478	0.134	0.620	(0.477, 0.806)	<0.001***		
sportFencing	−0.425	0.143	0.654	(0.494, 0.865)	0.003**		
sportGolf	−0.883	0.281	0.413	(0.238, 0.718)	0.002**		
sportSoccer	0.111	0.112	1.118	(0.898, 1.391)	0.319		
sportSwimming/Diving	−0.275	0.119	0.760	(0.601, 0.961)	0.021*		
sportTennis	−0.271	0.162	0.763	(0.555, 1.049)	0.095		
sportTrack and Field	−0.448	0.110	0.639	(0.514, 0.793)	<0.001***		
sportVolleyball	0.231	0.123	1.259	(0.989, 1.603)	0.060		
sportWater Polo	−0.164	0.124	0.849	(0.665, 1.083)	0.185		
academicYear2013-2014	−0.421	0.064	0.656	(0.579, 0.744)	<0.001***	$\chi^2_7 = 63.490$	<0.001***
academicYear2014-2015	−0.232	0.073	0.793	(0.687, 0.916)	0.001**		
academicYear2015-2016	−0.428	0.077	0.652	(0.560, 0.758)	<0.001***		
academicYear2016-2017	−0.381	0.079	0.683	(0.585, 0.797)	<0.001***		
academicYear2017-2018	−0.268	0.076	0.765	(0.658, 0.888)	<0.001***		
academicYear2018-2019	−0.275	0.079	0.760	(0.651, 0.887)	<0.001***		
academicYear2019-2020	−0.395	0.079	0.674	(0.576, 0.787)	<0.001***		

Each week of training was associated with having a 4.3% lower injury rate compared to the previous week, adjusting for gender, sport, and academic year, and this difference was significant (IRR = 0.957, P < 0.001).

Table S6: GEE model on injury rate per week per season where variable of interest is total training hours. Reference levels: Gender = Male, Sport = Baseball/Softball, academicYear = 2012-2013.

	Estimate	Std.err	Incidence Rate Ratio	95% CI	p-value	χ^2 value	$Pr(>\chi^2)$
(Intercept)	−4.754	0.109	0.009	(0.007, 0.011)	<0.001***		
total.hours	0.080	0.002	1.083	(1.079, 1.087)	<0.001***		
genderF	0.034	0.059	1.035	(0.922, 1.161)	0.562		
sportBasketball	0.583	0.138	1.791	(1.367, 2.347)	<0.001***	$\chi^2_{10} = 68.508$	<0.001***
sportCrew	0.222	0.102	1.248	(1.021, 1.525)	0.030*		
sportCross Country	0.331	0.137	1.392	(1.063, 1.822)	0.016*		
sportFencing	0.054	0.144	1.055	(0.795, 1.400)	0.710		
sportGolf	−0.357	0.283	0.700	(0.401, 1.220)	0.207		
sportSoccer	0.690	0.114	1.993	(1.592, 2.495)	<0.001***		
sportSwimming/Diving	0.563	0.124	1.756	(1.375, 2.243)	<0.001***		
sportTennis	0.220	0.163	1.247	(0.904, 1.719)	0.178		
sportVolleyball	0.556	0.124	1.744	(1.368, 2.224)	<0.001***		
sportWater Polo	0.292	0.125	1.339	(1.047, 1.714)	0.020*		
academicYear2013-2014	−0.413	0.069	0.661	(0.577, 0.758)	<0.001***	$\chi^2_7 = 56.863$	<0.001***
academicYear2014-2015	−0.250	0.079	0.779	(0.666, 0.910)	0.002**		
academicYear2015-2016	−0.450	0.083	0.638	(0.542, 0.751)	<0.001***		
academicYear2016-2017	−0.404	0.084	0.667	(0.565, 0.788)	<0.001***		
academicYear2017-2018	−0.248	0.081	0.780	(0.665, 0.915)	0.002**		
academicYear2018-2019	−0.254	0.084	0.775	(0.658, 0.914)	0.002**		
academicYear2019-2020	−0.403	0.085	0.668	(0.566, 0.790)	<0.001***		

Each additional hour of training (either workout, practice, or game) was associated with a 8.3% increase in injury rate (IRR = 1.083, P < 0.001) after adjusting for gender, sport, and year.