

Effect of Previous Injury on NFL Running Back's Yards per Game



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BACKGROUND

- Previous injury affects a player's strength, proprioception, and kinematics (Fulton et al., 2014).
 - These effects can lead to overall changes in motor control and function (Fulton et al., 2014).
- Maak et al. (2020) found that player output is also affected by other nonmedical factors:
 - Coaching decisions
 - Team personnel changes
 - Trade decisions
 - In-season timing
- In Fulton et al's. (2014) study, 4 common LE injuries (ACL, HS, Achilles, and Ankle) were analyzed.
 - It was found in all 4, that previous injury of the same muscle/joint is an important risk-factor for future injury (Fulton et al. 2014).
- **If previous injury does affect a player's performance output, what would the effect on Y/G be?**

DATA

- Collected from Pro-Sports-Transactions.com and Pro-Football-Reference.com spanning 2012-2025
- 578 players at the RB position analyzed
- 304 players recorded IR designations (52.6% of population)

METHOD

- Dependent Variable: 1) Y/G
- Independent Variable of Interest: 7) Previous Injury
 - Coded as 1 if injured (IR designation)
 - Coded as 0 otherwise
- Independent Variables: 2) Age, 3) GP Prev, 4) Succ% Prev, 5) Lng Prev, 6) Fmb Prev, 8) Srg Prev, 9) Y/G Prev, 10) InjTot, 11) A/G Prev, 12) TD Prev, 13) GS Prev, 14) Y/A Prev

RESULTS

	Mean	Med	St. Dev	Min	Max	2	3	4	5	6	7	8	9	10	11	12	13	14
2	26.17	26	2.59	21	37	3	0.06											
3	12.41	14	4.27	1	17	4	0.04	0.10										
4	44.14	46.2	16.81	0	100	5	-0.03	0.34	0.23									
5	30.50	26	21.45	-8	99	6	0.08	0.31	0.12	0.41								
6	1.11	1	1.38	0	8	7	0.02	-0.41	0.01	-0.08	-0.09							
7	0.21	0	0.41	0	1	8	0.04	-0.32	0.06	-0.01	-0.04	0.64						
8	0.10	0	0.30	0	1	9	0.02	0.19	0.22	0.71	0.53	0.01	0.09					
9	31.27	24	26.35	-1.5	131.1	10	0.26	-0.19	0.06	-0.00	-0.05	0.37	0.22	0.04				
10	0.57	0	0.77	0	4	11	0.04	0.17	0.18	0.64	0.53	0.00	0.08	0.97	0.02			
11	7.37	6.1	5.86	0	27.4	12	0.02	0.37	0.19	0.60	0.48	-0.15	-0.09	0.77	-0.03	0.75		
12	2.86	2	3.47	0	18	13	0.13	0.37	0.11	0.54	0.51	-0.10	-0.05	0.79	-0.02	0.80	0.70	
13	4.83	2	5.46	0	17	14	-0.01	0.14	0.62	0.49	0.16	0.00	0.08	0.32	0.09	0.23	0.22	0.11
14	3.95	4.1	1.65	-8	29	1	-0.08	0.14	0.15	0.50	0.38	-0.01	0.07	0.71	-0.05	0.69	0.59	0.23
1	28.84	21.9	25.80	-2	126.7													

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RESULTS CONT'D

	CoEf	SE	PV	L95%	U95%
1	32.3	5.80	0.00	20.94	43.71
2	-0.89	0.21	0.00	-1.31	-0.48
3	-0.13	0.16	0.41	-0.44	0.18
4	-0.03	0.04	0.44	-0.11	0.05
5	-0.01	0.04	0.82	-0.09	0.07
6	0.07	0.46	0.87	-0.82	0.97
7	-0.75	1.76	0.67	-4.21	2.71
8	3.82	2.26	0.09	-0.62	8.26
9	0.48	0.10	0.00	0.28	0.68
11	0.46	0.42	0.27	-0.36	1.28
12	0.89	0.26	0.00	0.39	1.39
13	0.14	0.18	0.43	-0.21	0.49
14	0.52	0.48	0.27	-0.41	1.45
10	-1.61	0.75	0.03	-3.08	-0.14

CONCLUSION

- 51.8% of variation in Y/G is explained by the IVs.
- There is a negative relationship b/w IR Prev and Y/G.
- The addition of a previous injury decreases Y/G by 0.75 yards.

FUTURE RESEARCH

- Analyze what specific injuries affect Y/G the most.
- Examine the effect of time missed due to injury on player output.
- Account for rehab and its effect on player output.