

Correction

## Correction to: Impact Performance of Modern Football Helmets

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This erratum is to correct headings listing the impact location and speed in Figs. 5 and 6. The following provides corrected Figs. 5 and 6. The data is unchanged. The authors apologize for any inconvenience this might have caused.

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#	Helmet	Percent Difference in HIC from 1990s Helmets (+ improvement, - poorer performance, green-significant improvement, red-significantly poorer)																	Differences		Issues										
		A	F	A'	C	F	A	B	C	A	R	F	A	D	F	UT	B	C	F	C	D	R	C	Average diff (%)	+/- 10% Median diff (%)	+/- significant	Helmet off (1)	# tests (18)	Total # (22)		
2	A4	-25	-30	-117	-18	-34	-5	-24	-5	-17	-20	21	-35	-16	-4	-34	-16	-20	-18	-33	-13	-12	25	-23	-21	-18	-16	-11	34	27	0
10	A2000	7	13	-78	-9	19	21	-7	5	-5	-7	19	1	-4	-1	-7	-1	7	3	-4	6	-11	20	14	0	1	4	3	57	53	1
16	A3000	-69	-15	-59	2	2	-30	2	30	1	-19	24	-8	-28	15	-10	3	-9	11	1	16	11	33	21	-3	2	2	3	65	51	0
8	PSE Gladiator	-2	11	9	13	6	5	10	15	13	-5	32	-32	-2	22	-28	17	-10	7	-29	15	21	37	15	6	10	8	2	134	63	38
3	VSR 4	13	17	22	13	16	-1	-7	-11	10	19	21	6	19	6	7	8	0	0	9	11	6	24	7	9	9	9	4	13	12	0
4	Revolution	48	23	-2	23	16	48	17	22	22	51	5	5	49	44	3	28	5	10	3	26	29	8	22	22	22	15	13	29	24	0
7	Revo Speed	25	-7	-18	26	3	26	28	10	33	-1	5	-2	2	31	20	24	-8	20	12	31	36	5	32	15	20	13	10	16	16	0
9	Revo IQ	37	22	7	21	17	49	16	29	26	46	6	4	47	41	3	25	1	9	1	26	34	14	14	22	21	16	11	27	21	0
14	Speed Classic	6	-17	-40	14	-5	-8	24	8	8	-10	2	-23	-10	34	-1	32	-16	4	-6	12	39	6	18	3	4	2	6	15	14	0
5	DNA PRO	8	18	1	1	33	25	2	10	8	29	15	31	32	16	19	10	6	16	32	20	14	23	28	17	16	16	10	19	18	0
6	ION 4D	10	-9	8	-5	15	10	-1	11	20	9	3	10	15	-22	6	-4	16	-6	19	7	16	23	7	7	9	8	4	23	19	0
11	Air XP	13	12	-84	1	13	31	2	-9	-5	12	18	5	7	15	12	9	-17	-9	1	-4	7	8	-4	1	7	6	3	12	11	0
12	Air XP 7891	22	-20	-24	-3	-20	42	3	16	10	17	12	-28	30	19	16	7	3	16	5	18	14	9	18	8	12	9	6	61	41	0
13	Air XP 7890	29	-5	-37	-1	0	28	8	-6	-12	7	9	-10	13	14	18	13	-29	-8	-1	-5	8	3	-11	1	0	2	1	22	20	0
15	DNA 2022	0	-49	-19	13	-41	25	17	2	7	6	16	-63	13	23	-4	16	9	17	-24	21	17	25	30	2	13	7	7	53	38	0
17	ION 4D 2030	21	18	-32	-23	22	27	3	-4	-7	18	9	0	12	16	31	10	-10	8	20	12	11	12	17	8	12	12	5	31	22	0
1	Xentith X1	5	-6	-51	-3	-9	29	1	19	7	7	8	-8	5	18	-26	4	2	3	-22	10	13	10	-6	0	4	2	-1	44	32	1
Baseline Responses																															
HIC		63	78	111	143	179	179	212	265	289	298	303	305	316	331	336	432	447	586	590	600	612	642	1,266							
sd		27	20	24	10	42	66	30	37	30	81	39	46	63	24	31	79	41	56	60	48	47	114	66							
95%CI		16	12	14	6	24	37	17	21	17	46	22	26	36	13	18	45	23	33	34	27	27	85	37							

FIGURE 5. Percent difference in HIC from baseline for the 17 helmets tested.

#	Helmet	Percent Difference in Peak Acceleration from 1990s Helmets (+ improvement, - poorer performance, green-significant improvement, red-significantly poorer)																	Differences Median diff (%) Average diff (%)		+/- significant +/- 10%		Helmet off (1) # tests (18) Total # (22)								
		A	F	A'	A	F	A	UT	A	C	B	F	R	F	C	B	D	UT	F	C	C	R	D	C	Average diff (%)	+/- significant	Total #	Helmet off (1)			
2	A4	5.5	-34	-53	-7	7.4	-24	-15	-15	0	-9	-20	14	-29	-3	-25	11	-11	-27	-10	-8	14	5	-14	-13	-11	-11	-13	34	27	0
10	A2000	5	2	-35	9	8	-5	-4	-10	6	11	3	18	-4	9	7	10	2	-6	12	14	12	6	18	4	6	5	7	57	53	1
16	A3000	-25	-11	-31	-27	-2	-5	8	-20	17	17	-6	20	-7	15	-11	19	6	1	11	19	24	16	15	2	6	4	6	65	51	0
8	PSE Gladiator	-7	5	-33	-9	-2	-3	14	-6	17	12	-20	-15	15	-3	18	12	-25	10	14	15	13	8	2	8	7	5	134	63	38	
3	VSR 4	5	15	5	1	10	10	1	10	11	-3	13	15	9	9	1	11	10	7	1	13	17	15	1	8	10	10	7	13	12	0
4	Revolution	-3	17	4	-8	12	18	10	22	19	17	9	-1	6	20	1	31	19	-1	7	19	1	15	12	11	12	12	12	29	24	0
7	Revo Speed	-9	0	1	-12	7	-3	16	5	23	11	4	-3	10	27	-3	14	12	12	6	20	0	19	13	7	7	9	8	16	16	0
9	Revo IQ	-13	16	3	2	11	12	9	14	16	17	4	10	5	20	2	28	16	1	4	19	12	25	5	10	11	11	11	27	21	0
14	Speed Classic	0	4	-15	-32	6	-23	11	-7	15	8	-7	-4	0	12	-5	18	18	0	4	14	4	23	8	2	4	4	6	15	14	0
5	DNA PRO	5	6	5	4	19	10	10	22	17	11	24	11	8	21	16	7	11	18	14	26	13	20	21	14	13	17	12	19	18	0
6	ION 4D	-1	-16	2	-7	4	3	2	1	8	11	5	6	-21	16	-2	13	10	-18	22	22	6	16	18	4	5	5	9	23	19	0
11	Air XP	1	-1	-35	9	6	1	5	-1	10	-4	5	9	12	2	-17	17	8	9	-6	-1	1	11	-5	2	2	2	3	12	11	0
12	Air XP 7891	-29	-13	-18	-15	-12	-17	5	-8	12	8	-11	16	23	20	-3	16	9	11	12	16	7	12	11	2	8	3	5	61	41	0
13	Air XP 7890	7	-3	-9	4	-3	1	12	2	12	-3	-4	6	21	-1	-21	13	11	4	-1	4	0	9	-4	2	2	4	5	22	20	0
15	DNA 2022	-9	-35	0	-7	-29	-10	15	-2	25	-2	-38	11	-1	19	0	13	13	-12	12	16	15	13	16	1	0	7	8	53	38	0
17	ION 4D 2030	2	13	-22	0	6	-2	6	-5	5	2	-16	8	9	9	-3	18	10	1	7	14	4	14	11	4	6	4	4	31	22	0
1	Xenith X1	8	-13	-10	8	-12	-2	5	2	8	16	-4	4	-15	10	2	9	4	-15	0	4	5	0	-3	0	2	-2	1	44	32	1

  

Baseline Responses	
peak g	40
sd	6
95%CI	3

FIGURE 6. Percent difference in peak acceleration from baseline for the 17 helmets tested.