

Table S1. The search terms used in the review to identify ball impact location. These search terms were used in Web of Science, PubMed, and Scopus databases. Full text, until 2021, Humans, English.

Web of Science	(((TS=(tennis)) AND TS=(ball*)) AND TS=(toss*)) OR TS=(tennis)) AND TS=(serve*)) AND TS=(kinematic*) Limit to: Article, English
PubMed	(((((tennis[Title/Abstract]) AND (ball*[Title/Abstract])) AND (toss*[Title/Abstract])) OR (tennis[Title/Abstract]) AND (serve*[Title/Abstract])) AND (kinematic*[Title/Abstract])) Limit to: Journal Article, Humans, English
Scopus	TITLE-ABS-KEY(("tennis" AND ball* AND toss*) OR TITLE-ABS-KEY("tennis" AND serve* AND kinematic*)) Limit to: Article, Journal, English

Table S2. The normalized data of the ball impact extracted from the chosen articles.

Participants						Ball impact						Normalized Ball impact					
Article	Serve	G	Age	n	Height	X	Y	Z	SDX	SDY	SDZ	X	Y	Z	SDX	SDY	SDZ
Reid et al. (2011)	FS	M	P	6	183	-12.2	58.3	275.4	8.0	13.3	9.7	-0.066	0.318	1.505	0.043	0.073	0.053
	KS	M	P	6	183	-35.3	46.9	273.0	10.9	18.4	10.3	-0.193	0.256	1.492	0.059	0.101	0.056
Carboch et al. (2018)	FS	M	P	15	185	-13.9		284.7	20.3		12.8	-0.075		1.536	0.110		0.069
	KS	M	P	15	185	-42.9		282.5	19.5		13.1	-0.231		1.524	0.105		0.071
Carboch (2015)	KS	M	P	10	185	-49.2		282.9	17.8		13.9	-0.266		1.530	0.096		0.075
Whiteside et al. (2015)	FS	W	J	12	144				11.0	12.0	5.0				0.077	0.084	0.035
	FS	W	J	11	167				9.0	10.0	5.0				0.054	0.060	0.030
	FS	W	P	8	169				10.0	12.0	3.0				0.059	0.071	0.018
Mendes et al. (2013)	FS	M	P	12	177	-18.0	50.1	261.2	19.0	14.9	7.0	-0.102	0.283	1.476	0.107	0.084	0.039
Reid et al. (2010)	FS	M	J	5	165	-34.0	51.8	250.9	9.5	8.5	9.3	-0.206	0.314	1.522	0.058	0.052	0.056
Chow et al. (2003)	FS	M	P	4	184	-16.0	78.0	274.0	42.0	18.0	7.0	-0.087	0.424	1.489	0.228	0.098	0.038
	FS	W	P	4	177	-19.0	81.0	259.0	27.0	23.0	10.0	-0.107	0.458	1.463	0.153	0.130	0.056
	KS	M	P	4	184	-56.0	56.0	273.0	21.0	27.0	11.0	-0.304	0.304	1.484	0.114	0.147	0.060
	KS	W	P	4	177	-7.0	45.0	266.0	29.0	18.0	13.0	-0.040	0.254	1.503	0.164	0.102	0.073

Connolly et al. (2021)	FS	M	J	14	170	-19.8	61.6	250.9	21.1	11.9	15.8	-0.117	0.363	1.478	0.124	0.070	0.093
	FS	W	J	10	161	-4.5	42.8	246.0	25.5	10.8	11.2	-0.028	0.267	1.533	0.159	0.067	0.070
	KS	M	J	14	170	-43.0	38.1	249.1	24.1	16.1	16.2	-0.253	0.224	1.467	0.142	0.095	0.095
	KS	W	J	10	161	-25.1	23.9	246.9	22.0	13.7	12.5	-0.156	0.149	1.538	0.137	0.085	0.078
Whiteside et al. (2014)	FS	W	P	8	170				10.3	11.3	3.5				0.061	0.067	0.021
Fett et al. (2021)	FS	M	J	14	176	-30.0	51.6	258.0	24.1	20.9	22.7	-0.170	0.293	1.466	0.137	0.119	0.129
Giblin et al. (2017)	FS	M	P	8	178	-18.9	60.3	265.7	13.3	19.3	10.0	-0.106	0.339	1.494	0.075	0.109	0.056
Campbell et al. (2013)	FS	M	J	7	178	-17.8	71.2	249.2	17.8	17.8	17.8	-0.100	0.400	1.400	0.100	0.100	0.100
	KS	M	J	7	178	-35.6	35.6	267.0	35.6	17.8	17.8	-0.200	0.200	1.500	0.200	0.100	0.100
Whiteside et al. (2013)	FS	W	J	12	144	-9.0	48.0	214.0	18.0	11.0	8.0	-0.063	0.334	1.491	0.125	0.077	0.056
	FS	W	J	11	167	-8.0	63.0	248.0	12.0	8.0	9.0	-0.048	0.377	1.486	0.072	0.048	0.054
	FS	W	P	8	169	-14.0	61.0	254.0	16.0	5.0	7.0	-0.083	0.361	1.501	0.095	0.030	0.041

Note: FS – flat serve; KS – kick serve; n – number of participants; G – gender of the participants; M – men; W – women; J – junior; P – professional; X , Y, Z, SDX, SDY, SDZ – means and standard deviations of the ball impact in the corresponding axes; Normalized ball impact – means and standard deviations of the ball impact normalized to average participants' height for the corresponding axes.

Table S3. Assessment of methodological quality.

Articles	Items											Score
	1	2	3	4	5	6	7	8	9	10	11	
Reid et al. (2011)	Y	Y	U	U	Y	Y	Y	Y	Y	Y	Y	20
Carboch et al. (2018)	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	21
Carboch (2015)	Y	Y	U	U	Y	Y	Y	Y	N	Y	Y	18
Mendes et al. (2013)	Y	Y	U	U	Y	Y	Y	Y	U	Y	Y	19
Reid et al. (2010)	Y	Y	U	U	Y	Y	Y	Y	U	Y	Y	19
Connolly et al. (2021)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	22
Fett et al. (2021)	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	21
Giblin et al. (2017)	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	21
Campbell et al. (2013)	Y	Y	U	Y	Y	Y	Y	Y	U	Y	Y	20
Whiteside et al. (2013)	Y	Y	U	U	Y	Y	Y	Y	Y	Y	Y	20

Note: Y – yes, U – unclear, N – no or not applied.