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Supplementary materials

Article: Which typical floor movements of men's artistic gymnastics result in the most extreme lumbar lordosis and ground reaction forces?

These supplementary materials present all statistical results, i.e. p-value and effect size. To assist the reader in identifying cases where both p-value was significant (i.e. <0.05) and effect size was large (i.e. >0.5), cells were colored in green. Cases where both p-value was higher than 0.05 and lower than 0.10, and effect size was large were highlighted by a cell colored in orange.

Lumbar flexion/extension

Table S1 : p-values and effect sizes in brackets for Wilcoxon tests on extension angles
In green, p<0.05 and large effect size. In orange, p-value close to be significant (p<0.1) and large effect size.

	Round off back handspring	Front handspring
Round off back handspring	-	0.063 (0.905)
Front handspring	-	-

Table S2 : p-values and effect sizes in brackets for Wilcoxon tests on flexion angles
In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump	Round off back handspring	Front handspring	Forward tucked somersault	Backward tucked somersault
Pike jump	-	0.063 (0.905)	0.031 (0.899)	0.625 (0.302)	1.000 (0)
Round off back handspring	-	-	0.063 (0.063)	0.125 (0.913)	0.250 (0.926)
Front handpspring	-	-	-	0.063 (0.905)	0.125 (0.913)
Forward tucked somersault	-	-	-	-	0.500 (0.617)
Backward tucked somersault	-	-	-	-	-

Table S3 : p-values and effect sizes in brackets for Wilcoxon tests on ROM values
In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump	Round off back handspring	Front handspring	Forward tucked somersault	Backward tucked somersault
Pike jump	-	0.125 (0.784)	1.000 (0.043)	0.063 (0.905)	0.125 (0.913)

Round off back handspring	-	-	0.063 (0.063)	0.125 (0.913)	1.000 (0)
Front handpspring	-	-	-	0.063 (0.905)	0.250 (0.730)
Forward tucked somersault	-	-	-	-	0.250 (0.926)
Backward tucked somersault	-	-	-	-	-

Ground reaction forces

Table S4 : p-values and effect sizes in brackets for Wilcoxon tests on peak total GRFs. (L) : landing, (TO) : take-off, (HG) : hands ground contact.
In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump (L)	Back handspring (TO)	Front handspring (L)	Forward tucked somersault (TO)	Forward tucked somersault (L)	Backward tucked somersault (L)	Back handspring (HG)	Front handspring (HG)
Pike jump (L)	-	0.031 (0.899)	0.438 (0.385)	0.063 (0.905)	0.313 (0.543)	0.250 (0.926)	0.031 (0.899)	0.031 (0.899)
Back handspring (TO)	-	-	0.031 (0.899)	0.063 (0.905)	0.063 (0.905)	0.250 (0.926)	0.031 (0.899)	0.031 (0.899)
Front handspring (L)	-	-	-	0.063 (0.905)	0.188 (0.663)	0.500 (0.617)	0.031 (0.899)	0.031 (0.899)
Forward tucked somersault (TO)	-	-	-	-	0.063 (0.905)	0.500 (0.949)	0.063 (0.905)	0.063 (0.905)
Forward tucked somersault (L)	-	-	-	-	-	1.000 (0.316)	0.063 (0.905)	0.063 (0.905)
Backward tucked somersault (L)	-	-	-	-	-	-	0.250 (0.926)	0.250 (0.926)
Back handspring (HG)	-	-	-	-	-	-	-	0.563 (0.300)
Front handspring (HG)	-	-	-	-	-	-	-	-

Table S5 : p-values and effect sizes in brackets for Wilcoxon tests on peak vertical GRFs. (L) : landing, (TO) : take-off, (HG) : hands ground contact.

In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump (L)	Back handspring (TO)	Front handspring (L)	Forward tucked somersault (TO)	Forward tucked somersault (L)	Backward tucked somersault (L)	Back handspring (HG)	Front handspring (HG)
Pike jump (L)	-	0.031 (0.899)	0.438 (0.385)	0.063 (0.905)	0.313 (0.543)	0.250 (0.926)	0.031 (0.899)	0.031 (0.899)
Back handspring (TO)	-	-	0.031 (0.899)	0.063 (0.905)	0.063 (0.905)	0.250 (0.926)	0.063 (0.813)	0.031 (0.899)
Front handspring (L)	-	-	-	0.063 (0.905)	0.188 (0.663)	0.500 (0.617)	0.031 (0.899)	0.031 (0.899)
Forward tucked somersault (TO)	-	-	-	-	0.063 (0.905)	0.500 (0.949)	0.063 (0.905)	0.063 (0.905)
Forward tucked somersault (L)	-	-	-	-	-	1.000 (0.316)	0.063 (0.905)	0.063 (0.905)
Backward tucked somersault (L)	-	-	-	-	-	-	0.250 (0.926)	0.250 (0.926)
Back handspring (HG)	-	-	-	-	-	-	-	0.438 (0.385)
Front handspring (HG)	-	-	-	-	-	-	-	-

Table S6 : p-values and effect sizes in brackets for Wilcoxon tests on peak antero-posterior GRFs. (L) : landing, (TO) : take-off, (HG) : hands ground contact.

In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump (L)	Back handspring (TO)	Front handspring (L)	Forward tucked somersault (TO)	Forward tucked somersault (L)	Backward tucked somersault (L)	Back handspring (HG)	Front handspring (HG)
Pike jump (L)	-	0.844 (0.128)	0.563 (0.300)	0.063 (0.905)	0.313 (0.543)	0.500 (0.617)	0.031 (0.899)	0.438 (0.385)
Back handspring (TO)	-	-	1.000 (0.043)	0.063 (0.905)	1.000 (0.060)	0.500 (0.617)	0.031 (0.899)	0.313 (0.471)
Front handspring (L)	-	-	-	0.063 (0.905)	0.313 (0.543)	0.500 (0.617)	0.031 (0.899)	0.094 (0.728)
Forward tucked somersault (TO)	-	-	-	-	0.063 (0.905)	0.500 (0.949)	0.063 (0.905)	0.063 (0.905)
Forward tucked somersault (L)	-	-	-	-	-	1.000 (0.316)	0.063 (0.905)	0.063 (0.905)
Backward tucked somersault (L)	-	-	-	-	-	-	0.250 (0.926)	0.500 (0.617)
Back handspring (HG)	-	-	-	-	-	-	-	0.031 (0.899)
Front handspring (HG)	-	-	-	-	-	-	-	-

Lumbar flexion/extension angles at peak ground reaction force instants

Table S7 : p-values and effect sizes in brackets for Wilcoxon tests on lumbar flexion and extension angles at impacts. (L) : landing, (TO) : take-off, (HG) : hands ground contact.

In green, p<0.05 and large effect size. In orange, p close to be significant (p<0.1) and large effect size.

	Pike jump (L)	Back handspring (TO)	Front handspring (L)	Salto forward (TO)	Salto forward (L)	Salto backward (L)	Back handspring (HG)	Front handspring (HG)
Pike jump (L)	-	1.000 (0.060)	0.031 (0.899)	0.250 (0.730)	0.063 (0.905)	0.250 (0.926)	0.063 (0.905)	0.031 (0.899)
Back handspring (TO)	-	-	0.063 (0.905)	0.250 (0.730)	0.125 (0.913)	0.500 (0.949)	0.063 (0.905)	0.063 (0.905)
Front handspring (L)	-	-	-	0.125 (0.913)	0.063 (0.905)	0.250 (0.926)	0.063 (0.905)	0.844 (0.128)
Salto forward (TO)	-	-	-	-	0.250 (0.730)	1.000 (1.000)	0.125 (0.913)	0.125 (0.913)
Salto forward (L)	-	-	-	-	-	0.500 (0.949)	0.125 (0.913)	0.063 (0.905)
Salto backward (L)	-	-	-	-	-	-	0.500 (0.949)	0.250 (0.926)
Back handspring (HG)	-	-	-	-	-	-	-	0.063 (0.905)
Front handspring (HG)	-	-	-	-	-	-	-	-