

Parameter	Girls				Boys		
	SHOX-D-LWS	SHOX-D-ISS	SHOX-D-All	TS-GH	SHOX-D-LWS	SHOX-D-ISS	SHOX-D-All
N ^{a,b}	15	10	27	26	11	13	24
Chronological age (years)	7.9 ± 2.0	7.0 ± 2.4	7.3 ± 2.2	7.5 ± 1.9	7.5 ± 2.6	7.4 ± 2.6	7.5 ± 2.6
Hand/wrist:							
Short 4 th metacarpal (%)	13.3	30.0	19.2	42.3	18.2	15.4	16.7
Short 5 th metacarpal (%)	6.7	10.0	7.7 [■]	34.6	18.2	15.4	16.7
Forearm:							
Radial bowing (%)	93.3 [★]	44.4	76.0 [■]	36.0*	63.6	30.8	45.8
Ulnar bowing (%)	20.0	0	12.0	16.0	36.4	7.7	20.8
Elbow deformities (%)	33.3	11.1	28.0	20.8	18.2	7.7	12.5
Ulnar variance (°)	6.1 ± 3.4	4.4 ± 4.8	5.2 ± 4.0	4.4 ± 4.2	3.3 ± 2.1	2.6 ± 2.5	2.9 ± 2.3
Radial length (cm)	12.6 ± 1.6	12.1 ± 2.0 [◐]	12.4 ± 1.7 [■]	13.6 ± 1.6	13.9 ± 2.3	13.4 ± 2.4	13.6 ± 2.3
Ulnar length (cm)	13.8 ± 1.8	13.2 ± 2.1	13.5 ± 1.9	14.5 ± 2.0	14.6 ± 2.4	14.1 ± 2.7	14.3 ± 2.5
Lower leg:							
Bowing of tibia (%)	20.0	0	12.5	16.7	0	15.4	8.7
Abnormal tibial tuberosities (%)	20.0	0 [◐]	12.5 [■]	45.8	0	23.1	13.0
Hypertrophic medial femoral condyle (%) ^c	13.3	25.0	16.7 [■]	54.2*	0	7.7	4.3
Length of tibia (cm)	22.0 ± 3.3	20.1 ± 3.3	21.2 ± 3.4	21.5 ± 2.6	23.0 ± 3.8	21.5 ± 3.8	22.2 ± 3.8
Length of fibula (cm)	20.7 ± 3.6	19.4 ± 3.2	20.1 ± 3.5	20.9 ± 2.7	22.2 ± 4.0	20.8 ± 4.0	21.4 ± 4.0

^aMaximum N, lower for some parameters, ^b2 patients with unknown clinical diagnosis, ^cKosowicz sign

[■]P value for SHOX-D-All vs TS-GH ≤0.05 (short 5th metacarpal P=0.038, radial bowing P=0.010, radial length P=0.016, abnormal tibial tuberosities P=0.024, hypertrophic medial femoral condyle P=0.015)

[★]P value for SHOX-D-LWS vs SHOX-D-ISS ≤0.05 (radial bowing P=0.015)

[◐]P value for SHOX-D-ISS vs TS-GH ≤0.05 (radial length p=0.033, abnormal tibial tuberosities P=0.029)

^{*}P value for SHOX-D-LWS vs TS-GH ≤0.05 (radial bowing p<0.001, hypertrophic medial femoral condyle P=0.017)

Supplementary Table S1: Presence of radiological signs and forearm and lower leg bone measurements at baseline split by gender and clinical diagnosis [% of patients affected for radiological signs, and mean ± SD for age and measurements].

Parameter	At Baseline				After 2 years of study		
	SHOX-D-C	SHOX-D-GH	SHOX-D-All	TS-GH	SHOX-D-C	SHOX-D-GH	TS-GH
N ^a	12	15	27	26	12	15	26
Hand/wrist:							
Short 4 th metacarpal (%)	8.3	28.6	19.2	42.3	16.7	13.3	23.1
Short 5 th metacarpal (%)	8.3	7.1	7.7 [■]	34.6	8.3	6.7	3.8
Forearm:							
Radial bowing (%)	75.0	76.9*	76.0 [■]	36.0	66.7	73.3*	16.7
Ulnar bowing (%)	8.3	15.4	12.0	16.0	25.0	13.3	8.3
Elbow deformities (%)	16.7	38.5	28.0	20.8	8.3	6.7	0.0
Ulnar variance (°)	5.3 ± 4.1	5.2 ± 4.2	5.2 ± 4.0	4.4 ± 4.2	10.3 ± 10.0	14.0 ± 17.2*	5.9 ± 4.6
Ulnar variance change from baseline (°)	-	-	-	-	5.0 ± 7.8	10.2 ± 18.6*	1.9 ± 5.5
Radial length (cm)	12.2 ± 2.0	12.5 ± 1.5	12.4 ± 1.7 [■]	13.6 ± 1.6	14.1 ± 2.2	14.2 ± 1.6*	16.1 ± 1.9
Radial length change from baseline (cm)	-	-	-	-	1.9 ± 1.0	1.9 ± 0.6*	2.4 ± 0.7
Ulnar length (cm)	12.9 ± 2.0	14.1 ± 1.7	13.5 ± 1.9	14.5 ± 2.0	15.5 ± 2.6	16.0 ± 1.8*	17.5 ± 2.1
Ulnar length change from baseline (cm)	-	-	-	-	2.7 ± 1.8	2.1 ± 0.8	2.9 ± 0.9
Lower leg:							
Bowing of tibia (%)	9.1	15.4	12.5	16.7	0	6.7	7.7
Abnormal tibial tuberosities (%)	9.1	15.4	12.5 [■]	45.8	0	6.7	32.0
Hypertrophic medial femoral condyle (%) ^b	18.2	15.4*	16.7 [■]	54.2	16.7	20.0	36.0
Length of tibia (cm)	21.2 ± 4.3	21.2 ± 2.5	21.2 ± 3.4	21.5 ± 2.6	23.6 ± 4.4	24.8 ± 3.0	26.0 ± 3.2
Length of tibia change from baseline (cm)	-	-	-	-	2.5 ± 1.0	3.8 ± 1.5	4.5 ± 2.6
Length of fibula (cm)	19.8 ± 3.5	20.3 ± 3.6	20.1 ± 3.5	20.9 ± 2.7	22.9 ± 4.1	24.2 ± 2.8	25.3 ± 3.2
Length of fibula change from baseline (cm)	-	-	-	-	3.1 ± 2.1	4.1 ± 1.5	4.4 ± 2.7

^aMaximum N, lower for some parameters, ^bKosowicz sign

[■]P value for SHOX-D-All vs TS-GH ≤0.05 (baseline: short 5th metacarpal P=0.038, radial bowing P=0.010, radial length P=0.016, abnormal tibial tuberosities P=0.024, hypertrophic medial femoral condyle P=0.015)

*P value for SHOX-D-GH vs TS-GH ≤0.05 (baseline: radial bowing P=0.038, hypertrophic medial femoral condyle P=0.035; after 2 years of study: radial bowing P<0.001, ulnar variance P=0.029, ulnar variance change from baseline P=0.033, radial length P=0.004, radial length change from baseline P=0.044, ulnar length P=0.032)

Supplementary Table S2: Presence of radiological signs and forearm and lower leg bone measurements at baseline and after 2 years of study in girls only [% of patients affected for radiological signs and mean ± SD for age and measurements].

Parameter	At baseline		After 2 years of study	
	SHOX-D-C	SHOX-D-GH	SHOX-D-C	SHOX-D-GH
N ^a	12	12	12	12
Hand/wrist:				
Short 4 th metacarpal (%)	8.3	25.0	8.3	16.7
Short 5 th metacarpal (%)	8.3	25.0	0	16.7
Forearm:				
Radial bowing (%)	66.7	25.0	91.7	58.3
Ulnar bowing (%)	41.7 [*]	0	8.3	16.7
Elbow deformities (%)	16.7	8.3	0	8.3
Ulnar variance (°)	3.2 ± 2.2	2.7 ± 2.5	7.5 ± 7.9	4.0 ± 2.3
Ulnar variance change from baseline (°)	-	-	4.3 ± 7.3	1.3 ± 4.2
Radial length (cm)	14.0 ± 2.5	13.3 ± 2.2	15.4 ± 2.3	15.7 ± 2.4
Radial length change from baseline (cm)	-	-	1.7 ± 0.7 [*]	2.3 ± 0.4
Ulnar length (cm)	14.6 ± 2.6	14.1 ± 2.6	16.4 ± 2.7	16.5 ± 2.7
Ulnar length change from baseline (cm)	-	-	2.0 ± 1.1	2.4 ± 0.6
Lower leg:				
Bowing of tibia (%)	8.3	9.1	16.7	8.3
Abnormal tibial tuberosities (%)	16.7	9.1	16.7	25.0
Hypertrophic medial femoral condyle(%) ^b	0	9.1	16.7	8.3
Length of tibia (cm)	22.9 ± 3.9	21.3 ± 3.6	25.8 ± 3.8	24.7 ± 3.3
Length of tibia change from baseline (cm)	-	-	3.4 ± 2.9	3.1 ± 1.9
Length of fibula (cm)	22.1 ± 4.2	20.6 ± 3.7	25.0 ± 3.9	23.7 ± 3.5
Length of fibula change from baseline (cm)	-	-	3.2 ± 1.7	3.1 ± 2.5

^aMaximum N, lower for some parameters, ^bKosowicz sign

^{*}P value for SHOX-D-GH vs SHOX-D-C ≤0.05 (baseline: ulnar bowing *P*=0.037; after 2 years of study: radial length change from baseline *P*=0.011)

Supplementary Table S3: Presence of radiological signs and forearm and lower leg bone measurements at baseline and after 2 years of study in boys only [% of patients affected for radiological signs and mean ± SD for age and measurements].