

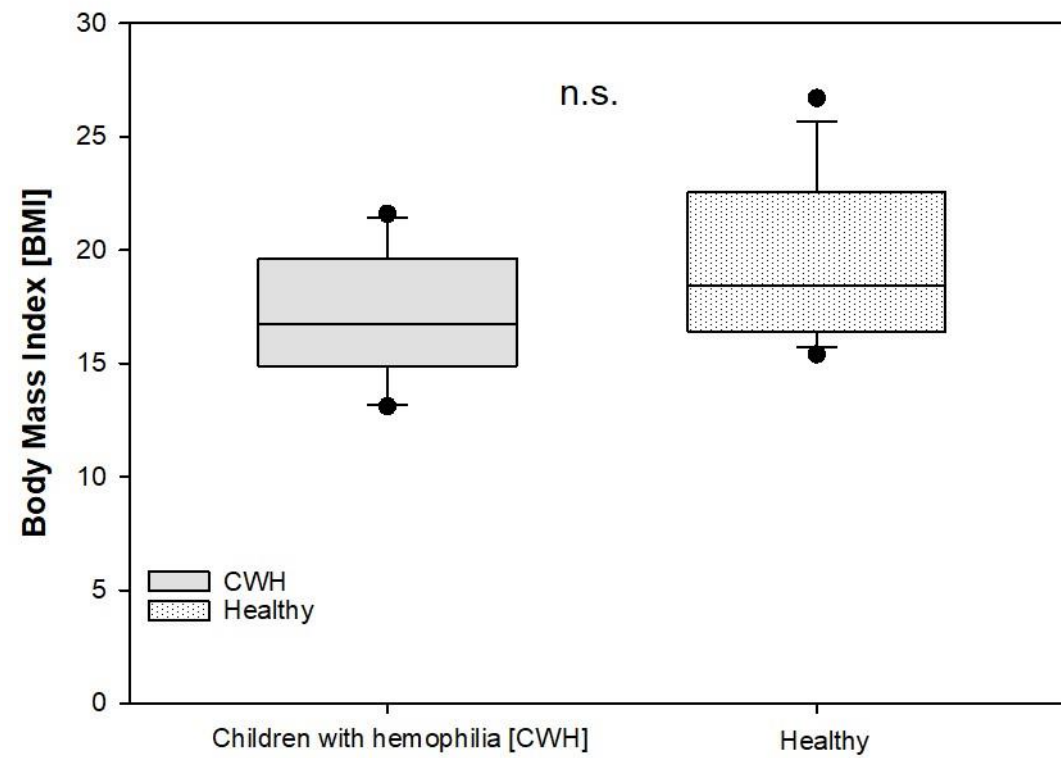


Figure S1. Body mass index of healthy children and children with haemophilia

Table S1. Example data set of thermographic measurements of the investigated anatomical structures. Descriptive statistics includes the mean, minimum and maximum values, the temperature range and the standard deviation. The temperature differences was calculated from corresponding anatomical sites and were defined to be significant if the difference was above 0.5°C and are highlighted by bold letters.

				Region of interest	Mean (°C)	Min (°C)	Max (°C)	Range (°C)	St.dev. (°C)	Δ right-left (°C)
Elbow	ventral	right	Lateral epicondyle	1	32.56	30.69	33.73	3.04	0.66	0.31
		left	Lateral epicondyle	5	32.25	30.61	33.17	2.56	0.65	
		right	Lateral capsule	2	33.03	32.14	33.95	1.81	0.52	1.15
		left	Lateral capsule	6	31.88	31.3	32.57	1.27	0.33	
		right	Medial capsule	3	31.64	31.4	32.13	0.72	0.15	0.4
		left	Medial capsule	7	31.24	31.11	31.58	0.47	0.1	
		right	Medial epicondyle	4	30.97	30.66	31.47	0.81	0.19	-0.11
		left	Medial epicondyle	8	31.08	30.75	31.21	0.46	0.09	
	dorsal	right	Lateral epicondyle	1	30.44	29.15	30.97	1.82	0.33	0.01
		left	Lateral epicondyle	5	30.43	29.69	31.13	1.44	0.33	
		right	Lateral capsule	2	31.66	31.12	32.07	0.95	0.23	0.04
		left	Lateral capsule	6	31.62	31.07	32.08	1.01	0.23	
		right	Medial capsule	3	31.23	30.84	31.68	0.84	0.18	0.32
		left	Medial capsule	7	30.91	30.37	31.26	0.89	0.17	
		right	Medial epicondyle	4	31.61	30.6	32.25	1.65	0.4	0.9
		left	Medial epicondyle	8	30.71	26.41	31.6	5.19	0.88	
Knee	ventral	right	superior recess	1	30.1	29.67	30.86	1.2	0.22	-0.5
		left	superior recess	8	30.6	30.03	31.67	1.64	0.33	
		right	lateral collateral ligament,	2	30.75	30.1	31.51	1.41	0.27	0.55
		left	lateral collateral ligament,	9	30.2	29.6	30.6	1.01	0.22	
		right	Lateral Hoffa	3	31.49	31.03	31.82	0.79	0.21	0.48
		left	Lateral Hoffa	10	31.01	30.71	31.19	0.48	0.11	
		right	Apex patellae	4	31.03	30.68	31.31	0.64	0.17	1.33
		left	Apex patellae	11	29.7	29.21	30.63	1.42	0.37	

		right	Medial Hoffa	5	31.04	30.73	31.24	0.51	0.11	0.63
		left	Medial Hoffa	12	30.41	29.67	31.02	1.35	0.31	
		right	medial collateral ligament	6	30.78	29.13	31.36	2.23	0.37	-0.28
		left	medial collateral ligament	13	31.06	30.6	31.4	0.8	0.22	
		right	tibial tuberosity	7	31.1	30.87	31.44	0.57	0.12	0.43
		left	tibial tuberosity	14	30.67	30.35	31	0.65	0.14	
	dorsal	right	lateral collateral ligament,	1	30.89	30.17	31.55	1.38	0.35	0.29
		left	lateral collateral ligament,	5	30.6	30.13	31.25	1.12	0.24	
		right	medial collateral ligament	2	30.96	30.34	31.5	1.16	0.35	0.67
		left	medial collateral ligament	6	30.29	29.23	30.66	1.43	0.14	
		right	dorsal lateral capsule	3	31.57	31.26	31.88	0.62	0.14	-0.06
		left	dorsal lateral capsule	7	31.63	31.07	31.93	0.85	0.19	
		right	dorsal medial capsule	4	32.16	31.32	32.86	1.53	0.37	0.4
		left	dorsal medial capsule	8	31.76	31.27	32.34	1.07	0.29	
Ankle joint	ventral	right	peroneal tendon	1	31.25	30.22	32.13	1.91	0.47	0.71
		left	peroneal tendon	5	30.54	29.15	31.11	1.95	0.41	
		right	lateral capsule	2	32.35	32.11	32.48	0.37	0.09	0.21
		left	lateral capsule	6	32.14	31.37	32.58	1.21	0.27	
		right	medial capsule	3	31.22	30.82	31.73	0.91	0.24	-0.61
		left	medial capsule	7	31.83	31.23	32.48	1.25	0.31	
		right	tibialis posterior tendon	4	30.14	29.27	30.77	1.49	0.36	-0.88
		left	tibialis posterior tendon	8	31.02	30.47	31.52	1.04	0.23	
	dorsal	right	tibialis posterior tendon	2	30.6	29.27	31.88	2.61	0.75	-1.37
		left	tibialis posterior tendon	5	31.97	31.47	32.22	0.75	0.14	
		right	Achilles tendon	3	29.07	27.34	30.51	3.17	0.98	-0.57
		left	Achilles tendon	6	29.64	27.89	30.81	2.91	0.75	

Table S3: Results from the calculation of accuracy, sensitivity and specificity for healthy children and children with haemophilia per joint.

Children with Hemophilia

Ankle:

Medial Capsule	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 6	False positive: 4
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 0

Precision (positive predictive value) = $TP/TP+FP = 6/6+4 = 0,6$

Recall/Sensitivity = $TP/FN+TP = 6/0+6 = 1$

Specificity/True negative value = $TN/TN+FP = 0/0+4 = 0$

Accuracy = $TP+TN/TP+TN+FP+FN = 6+0/4+0+6+0 = 0,6$

Lateral Capsule	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 6	False positive: 4
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 0

Precision (positive predictive value) = $TP/TP+FP = 6/6+4 = 0,6$

Recall/Sensitivity = $TP/FN+TP = 6/0+6 = 1$

Specificity/True negative value = $TN/TN+FP = 0/0+4 = 0$

Accuracy = $TP+TN/TP+TN+FP+FN = 6+0/4+0+6+0 = 0,6$

Achilles tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 1	False positive: 1
$Dt_{max} < 0.5^{\circ}C$	False negative: 1	True negative: 7

Precision (positive predictive value) = $TP/TP+FP = 1/1+1 = 0,5$

Recall/Sensitivity = $TP / (FN + TP) = 1 / (1 + 1) = 0.5$

Specificity/True negative value = $TN / (TN + FP) = 7 / (7 + 1) = 0.875$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = 1 + 7 / (1 + 1 + 1 + 7) = 0.8$

Tib.post. Tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 3	False positive: 6
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 1

Precision (positive predictive value) = $TP / (TP + FP) = 3 / (3 + 6) = 0.33$

Recall/Sensitivity = $TP / (FN + TP) = 3 / (0 + 3) = 1$

Specificity/True negative value = $TN / (TN + FP) = 1 / (1 + 6) = 0.14$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = 3 + 1 / (3 + 1 + 0 + 6) = 0.4$

Peroneal Tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 3	False positive: 6
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 1

Precision (positive predictive value) = $TP / (TP + FP) = 3 / (3 + 6) = 0.33$

Recall/Sensitivity = $TP / (FN + TP) = 3 / (0 + 3) = 1$

Specificity/True negative value = $TN / (TN + FP) = 1 / (1 + 6) = 0.14$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = 3 + 1 / (3 + 1 + 0 + 6) = 0.4$

Total ankle	tender	Non-tender
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$Dt_{max} \geq 0.5^{\circ}C$	True positive: 19	False positive: 21
$Dt_{max} < 0.5^{\circ}C$	False negative: 1	True negative: 9

Precision (positive predictive value) = $TP/TP+FP = 19/19+21 = 0,475$

Recall/Sensitivity = $TP/FN+TP = 19/1+19 = 0,95$

Specificity/True negative value = $TN/TN+FP = 9/9+21 = 0,3$

Accuracy = $TP+TN/TP+TN+FP+FN = 19+9/19+9+1+21 = 0,56$

Negative predicted value: $TN/TN+FN = 9/10 = 0.9$

Elbow

Medial epicondyle	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 3	False positive: 5
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 2

Precision (positive predictive value) = $TP/TP+FP = 3/3+5 = 0,375$

Recall/Sensitivity = $TP/FN+TP = 3/0+3 = 1$

Specificity/True negative value = $TN/TN+FP = 2/2+5 = 0,29$

Accuracy = $TP+TN/TP+TN+FP+FN = 3+2/3+2+0+5 = 0,5$

Lateral epicondyle	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 5	False positive: 3
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 2

Precision (positive predictive value) = $TP/TP+FP = 5/5+3 = 0,625$

Recall/Sensitivity = $TP/FN+TP = 5/0+5 = 1$

Specificity/True negative value = $TN/TN+FP = 2/2+3 = 0,4$

Accuracy = $TP+TN/TP+TN+FP+FN = 5+2/5+2+0+3 = 0,7$

Elbow pitch	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 3	False positive: 7
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 0

Precision (predictive value) = $TP/TP+FP = 3/3+7 = 0,3$

Recall/Sensitivity = $TP/FN+TP = 3/0+3 = 1$

Specificity/True negative value = $TN/TN+FP = 0/0+7 = 0$

Accuracy = $TP+TN/TP+TN+FP+FN = 3+0/3+0+0+7 = 0,3$

Medial capsule	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 1	False positive: 0
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 9

Precision (predictive value) = $TP/TP+FP = 1/1+0 = 1$

Recall/Sensitivity = $TP/FN+TP = 1/0+1 = 1$

Specificity/True negative value = $TN/TN+FP = 9/9+0 = 1$

Accuracy = $TP+TN/TP+TN+FP+FN = 1+9/9+1+0+0 = 1$

Lateral capsule	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 1	False positive: 0
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 9

Precision (predictive value) = $TP/TP+FP = 1/1+0 = 1$

Recall/Sensitivity = $TP / (FN + TP) = 1 / 0 + 1 = 1$

Specificity/True negative value = $TN / (TN + FP) = 9 / 9 + 0 = 1$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 1 + 9 / 9 + 1 + 0 + 0 = 1$

Olecranon	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 0
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 10

Precision (predictive value) = $TP / (TP + FP) = 0 / 0 + 0 = 0$

Recall/Sensitivity = $TP / (FN + TP) = 0 / 0 + 0 = 0$

Specificity/True negative value = $TN / (TN + FP) = 10 / 10 + 0 = 1$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 0 + 10 / 0 + 10 + 0 + 0 = 1$

Total Elbow	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 13	False positive: 12
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 32

Precision (predictive value) = $TP / (TP + FP) = 13 / 13 + 12 = 0,52$

Recall/Sensitivity = $TP / (FN + TP) = 13 / 13 + 0 = 1$

Specificity/True negative value = $TN / (TN + FP) = 32 / 32 + 12 = 0,73$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 13 + 12 / 13 + 12 + 12 + 0 = 0,68$

Negative predicted value: $TN / (TN + FN) = 32 / 32 = 1$

Knee:

Recessus	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 6
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 4

Precision (predictive value) = $TP / (TP + FP) = 0 / 0 + 6 = 0$

Recall/Sensitivity = $TP / (FN + TP) = 0 / (0 + 0) = 0$

Specificity/True negative value = $TN / (TN + FP) = 4 / (4 + 6) = 0,4$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 0 + 4 / (0 + 4 + 6 + 0) = 0,4$

Lateral Capsule	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 5	False positive: 4
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 1

Precision (predictive value) = $TP / (TP + FP) = 5 / (5 + 4) = 0,56$

Recall/Sensitivity = $TP / (FN + TP) = 5 / (0 + 5) = 1$

Specificity/True negative value = $TN / (TN + FP) = 1 / (1 + 4) = 0,2$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 5 + 1 / (0 + 1 + 4 + 5) = 0,6$

Medial capsule	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 5	False positive: 4
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 1

Precision (predictive value) = $TP / (TP + FP) = 5 / (5 + 4) = 0,56$

Recall/Sensitivity = $TP / (FN + TP) = 5 / (0 + 5) = 1$

Specificity/True negative value = $TN / (TN + FP) = 1 / (1 + 4) = 0,2$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 5 + 1 / (0 + 1 + 4 + 5) = 0,6$

Lateral collateral	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 6
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 4

Precision (predictive value) = $TP / (TP + FP) = 0 / (0 + 6) = 0$

Recall/Sensitivity = $TP / (FN + TP) = 0 / (0 + 4) = 0$

Specificity/True negative value = $TN / (TN + FP) = 4 / (4 + 6) = 0,4$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+4/0+0+4+6=0,4$

Medial Collateral	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 7
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 3

Precision (predictive value) = $TP/TP+FP = 0/+7 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 3/3+7=0,3$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+3/0+0+3+7=0,3$

Lateral Hoffa	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 7
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 3

Precision (predictive value) = $TP/TP+FP = 0/+7 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 3/3+7=0,3$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+3/0+0+3+7=0,3$

Medial Hoffa	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 0	False positive: 7
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 3

Precision (predictive value) = $TP/TP+FP = 0/+7 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 3/3+7=0,3$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+3/0+0+3+7=0,3$

Apex patellae	tender	Non-tender
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Dt _{max} ≥0.5°C	True positive: 0	False positive: 4
Dt _{max} <0.5°C	False negative: 0	True negative: 6

Precision (predictive value) = TP/TP+FP= 0/+4= 0

Recall/Sensitivity = TP/FN+TP= 0/0+0= 0

Specificity/True negative value= TN/TN+FP= 6/6+4=0,6

Accuracy = TP+TN/TP+TN+FP+FN= 0+6/0+0+6+4=0,6

Tuberositas Tibiae	tender	Non-tender
Dt _{max} ≥0.5°C	True positive: 0	False positive: 7
Dt _{max} <0.5°C	False negative: 0	True negative: 3

Precision (predictive value) = TP/TP+FP= 0/+7= 0

Recall/Sensitivity = TP/FN+TP= 0/0+0= 0

Specificity/True negative value= TN/TN+FP= 3/3+7=0,3

Accuracy = TP+TN/TP+TN+FP+FN= 0+3/0+0+3+7=0,3

Total knee	tender	Non-tender
Dt _{max} ≥0.5°C	True positive: 10	False positive: 52
Dt _{max} <0.5°C	False negative: 0	True negative: 28

Precision (predictive value) = TP/TP+FP= 10/10+52= 0,16

Recall/Sensitivity = TP/FN+TP= 10/0+10= 1

Specificity/True negative value= TN/TN+FP= 10/10+52=0,16

Accuracy = TP+TN/TP+TN+FP+FN= 10+28/0+10+28+52=0,54

Negative predicted value: TN/TN+FN= 28/28 = 1

Elbow, knee, ankle	tender	Non-tender
Dt _{max} ≥0.5°C	True positive: 42	False positive: 85

$D_{\text{max}} < 0.5^{\circ}\text{C}$	False negative: 1	True negative: 69
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Precision (predictive value) = $TP/TP+FP = 42/42+85 = 0,33$

Recall/Sensitivity = $TP/FN+TP = 42/1+42 = 0,98$

Specificity/True negative value = $TN/TN+FP = 69/69+85 = 0,45$

Accuracy = $TP+TN/TP+TN+FP+FN = 42+69/42+69+1+85 = 0,56$

Negative predicted value: $TN/TN+FN = 69/70 = 0.986$

Healthy Children

Ankle:

Medial Capsule	tender	Non-tender
$D_{\text{max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 1
$D_{\text{max}} < 0.5^{\circ}\text{C}$	False negative: 2	True negative: 9

Precision (predictive value) = $TP/TP+FP = 0/+1 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+2 = 0$

Specificity/True negative value = $TN/TN+FP = 9/9+1 = 0,9$

Accuracy = $TP+TN/TP+TN+FP+FN = 9+0/0+9+2+1 = 0,75$

Lateral Capsule	tender	Non-tender
$D_{\text{max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 0
$D_{\text{max}} < 0.5^{\circ}\text{C}$	False negative: 2	True negative: 10

Precision (predictive value) = $TP/TP+FP = 0/+0 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+2 = 0$

Specificity/True negative value = $TN/TN+FP = 10/10 = 1$

Accuracy = $TP+TN/TP+TN+FP+FN = 10+0/0+10+2+0 = 0,83$

Achilles tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 0	False positive: 0
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 12

Precision (predictive value) = $TP/TP+FP = 0/0 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0 = 0$

Specificity/True negative value = $TN/TN+FP = 12/12 = 1$

Accuracy = $TP+TN/TP+TN+FP+FN = 12+0/0+12+0+0 = 1$

Tib.post. Tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 3	False positive: 1
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 7

Precision (predictive value) = $TP/TP+FP = 3/3+1 = 0,75$

Recall/Sensitivity = $TP/FN+TP = 3/0+3 = 1$

Specificity/True negative value = $TN/TN+FP = 7/7+1 = 0,88$

Accuracy = $TP+TN/TP+TN+FP+FN = 7+3/0+1+7+3 = 0,91$

Peroneal Tendon	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 0	False positive: 0
$Dt_{max} < 0.5^{\circ}C$	False negative: 2	True negative: 10

Precision (predictive value) = $TP/TP+FP = 0/0 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+2 = 0$

Specificity/True negative value= $TN / (TN + FP) = 10 / 10 = 1$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 10 + 0 + 2 + 10 + 0 = 0,83$

Total ankle	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 3	False positive: 2
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 6	True negative: 48

Precision (predictive value) = $TP / (TP + FP) = 3 / 3 + 2 = 0,6$

Recall/Sensitivity = $TP / (FN + TP) = 3 / 6 + 3 = 0,33$

Specificity/True negative value= $TN / (TN + FP) = 48 / 48 + 2 = 0,96$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 3 + 48 / 3 + 2 + 48 + 0 = 0,91$

Negative predicted value: $TN / (TN + FN) = 48 / 54 = 0.89$

Elbow

Medial epicondyle	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 2	False positive: 1
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 0	True negative: 9

Precision (predictive value) = $TP / (TP + FP) = 2 / 2 + 1 = 0,61$

Recall/Sensitivity = $TP / (FN + TP) = 2 / 0 + 2 = 1$

Specificity/True negative value= $TN / (TN + FP) = 9 / 9 + 1 = 0,9$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 2 + 9 / 0 + 2 + 9 + 1 = 0,83$

Lateral epicondyle	tender	Non-tender
Dt _{max} ≥ 0.5°C	True positive: 1	False positive: 2
Dt _{max} < 0.5°C	False negative: 1	True negative: 8

Precision (predictive value) = $TP/TP+FP = 1/2+1 = 0,33$

Recall/Sensitivity = $TP/FN+TP = 1/1+1 = 0.5$

Specificity/True negative value = $TN/TN+FP = 8/8+2 = 0,8$

Accuracy = $TP+TN/TP+TN+FP+FN = 1+8/1+1+8+2 = 0,75$

Elbow pitch	tender	Non-tender
Dt _{max} ≥ 0.5°C	True positive: 0	False positive: 1
Dt _{max} < 0.5°C	False negative: 0	True negative: 11

Precision (predictive value) = $TP/TP+FP = 0/0+1 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 11/11+1 = 0,92$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+11/0+1+11 = 0,92$

Medial capsule	tender	Non-tender
Dt _{max} ≥ 0.5°C	True positive: 0	False positive: 2
Dt _{max} < 0.5°C	False negative: 0	True negative: 10

Precision (predictive value) = $TP/TP+FP = 0/0+2 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 10/10+2 = 0,83$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+10/0+2+10 = 0,83$

Lateral capsule	tender	Non-tender
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$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 3
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 9

Precision (predictive value) = $TP/TP+FP = 0/0+3 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 9/9+3 = 0,75$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+9/0+3+9+0 = 0,75$

Olecranon	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 0
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 12

Precision (predictive value) = $TP/TP+FP = 0/+0 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 12/12 = 1$

Accuracy = $TP+TN/TP+TN+FP+FN = 12+0/0+12+0+0 = 1$

Total Elbow	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}\text{C}$	True positive: 3	False positive: 9
$D_{t_{max}} < 0.5^{\circ}\text{C}$	False negative: 1	True negative: 60

Precision (predictive value) = $TP/TP+FP = 3/3+9 = 0,25$

Recall/Sensitivity = $TP/FN+TP = 3/3+1 = 0,75$

Specificity/True negative value = $TN/TN+FP = 60/60+9 = 0,87$

Accuracy = $TP+TN/TP+TN+FP+FN = 3+60/1+60+3+9 = 0,86$

Negative predicted value: $TN/TN+FN = 60/61 = 0.98$

Knee:

Recessus	tender	Non-tender
$D_{t_{\max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 1
$D_{t_{\max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 11

Precision (predictive value) = $TP/TP+FP = 0/1 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 11/12 = 0.92$

Accuracy = $TP+TN/TP+TN+FP+FN = 11+0/0+11+1+0 = 0.92$

Lateral Capsule	tender	Non-tender
$D_{t_{\max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 1
$D_{t_{\max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 11

Precision (predictive value) = $TP/TP+FP = 0/1 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 11/12 = 0.92$

Accuracy = $TP+TN/TP+TN+FP+FN = 11+0/0+11+1+0 = 0.92$

Medial capsule	tender	Non-tender
$D_{t_{\max}} \geq 0.5^{\circ}\text{C}$	True positive: 0	False positive: 2
$D_{t_{\max}} < 0.5^{\circ}\text{C}$	False negative: 0	True negative: 10

Precision (predictive value) = $TP/TP+FP = 0/0+2 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value = $TN/TN+FP = 10/10+2 = 0.83$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+10/0+2+10 = 0.83$

Lateral collateral	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 2	False positive: 0
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 10

Precision (predictive value) = $TP/TP+FP = 2/0+2 = 1$

Recall/Sensitivity = $TP/FN+TP = 2/0+2 = 1$

Specificity/True negative value = $TN/TN+FP = 10/10+0 = 1$

Accuracy = $TP+TN/TP+TN+FP+FN = 2+10/0+2+10 = 1$

Medial Collateral	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 0	False positive: 1
$Dt_{max} < 0.5^{\circ}C$	False negative: 2	True negative: 9

Precision (predictive value) = $TP/TP+FP = 0/0+1 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/2+0 = 0$

Specificity/True negative value = $TN/TN+FP = 9/9+1 = 0,9$

Accuracy = $TP+TN/TP+TN+FP+FN = 0+9/0+2+9+1 = 0,75$

Lateral Hoffa	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 0	False positive: 2
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 10

Precision (predictive value) = $TP/TP+FP = 0/0+2 = 0$

Recall/Sensitivity = $TP/FN+TP = 0/0+0 = 0$

Specificity/True negative value= $TN / (TN + FP) = 10 / (10 + 2) = 0,83$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 0 + 10 / (0 + 2 + 10) = 0,83$

Medial Hoffa	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 0	False positive: 2
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 10

Precision (predictive value) = $TP / (TP + FP) = 0 / (0 + 2) = 0$

Recall/Sensitivity = $TP / (FN + TP) = 0 / (0 + 0) = 0$

Specificity/True negative value= $TN / (TN + FP) = 10 / (10 + 2) = 0,83$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 0 + 10 / (0 + 2 + 10) = 0,83$

Apex patellae	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 1	False positive: 0
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 11

Precision (predictive value) = $TP / (TP + FP) = 1 / (0 + 1) = 1$

Recall/Sensitivity = $TP / (FN + TP) = 1 / (0 + 1) = 1$

Specificity/True negative value= $TN / (TN + FP) = 11 / (10 + 1) = 1$

Accuracy = $TP + TN / (TP + TN + FP + FN) = 0 + 11 / (0 + 1 + 10 + 0) = 1$

Tuberositas Tibiae	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 1	False positive: 0
$Dt_{max} < 0.5^{\circ}C$	False negative: 0	True negative: 11

Precision (predictive value) = $TP / (TP + FP) = 1 / (0 + 1) = 1$

Recall/Sensitivity = $TP / (FN + TP) = 1 / (0 + 1) = 1$

Specificity/True negative value= $TN / (TN + FP) = 11 / (10 + 1) = 1$

$$\text{Accuracy} = \text{TP} + \text{TN} / \text{TP} + \text{TN} + \text{FP} + \text{FN} = 0 + 11 / 0 + 1 + 10 + 0 = 1$$

Total knee	tender	Non-tender
$D_{\text{max}} \geq 0.5^\circ\text{C}$	True positive: 4	False positive: 9
$D_{\text{max}} < 0.5^\circ\text{C}$	False negative: 2	True negative: 104

$$\text{Precision (predictive value)} = \text{TP} / \text{TP} + \text{FP} = 4 / 4 + 9 = 0,31$$

$$\text{Recall/Sensitivity} = \text{TP} / \text{FN} + \text{TP} = 4 / 4 + 2 = 0.67$$

$$\text{Specificity/True negative value} = \text{TN} / \text{TN} + \text{FP} = 104 / 104 + 9 = 0.92$$

$$\text{Accuracy} = \text{TP} + \text{TN} / \text{TP} + \text{TN} + \text{FP} + \text{FN} = 114 + 4 / 2 + 4 + 114 + 9 = 0.88$$

$$\text{Negative predicted value: } \text{TN} / \text{TN} + \text{FN} = 104 / 106 = 0.98$$

Total knee, ankle, elbow healthy	tender	Non-tender
$D_{\text{max}} \geq 0.5^\circ\text{C}$	True positive: 10	False positive: 20
$D_{\text{max}} < 0.5^\circ\text{C}$	False negative: 9	True negative: 212

$$\text{Precision (predictive value)} = \text{TP} / \text{TP} + \text{FP} = 10 / 10 + 20 = 0,33$$

$$\text{Recall/Sensitivity} = \text{TP} / \text{FN} + \text{TP} = 10 / 10 + 9 = 0.53$$

$$\text{Specificity/True negative value} = \text{TN} / \text{TN} + \text{FP} = 212 / 212 + 20 = 0.91$$

$$\text{Accuracy} = \text{TP} + \text{TN} / \text{TP} + \text{TN} + \text{FP} + \text{FN} = 212 + 10 / 10 + 20 + 9 + 212 = 0.88$$

$$\text{Negative predicted value: } \text{TN} / \text{TN} + \text{FN} = 212 / 221 = 0.96$$

(CWH+Healthy)

All knees	tender	Non-tender
$D_{\text{max}} \geq 0.5^\circ\text{C}$	True positive: 14	False positive: 61
$D_{\text{max}} < 0.5^\circ\text{C}$	False negative: 2	True negative: 132

$$\text{Precision (predictive value)} = \text{TP} / \text{TP} + \text{FP} = 14 / 14 + 61 = 0,16$$

Recall/Sensitivity = $TP / (FN + TP) = 4 / (4 + 2) = 0.67$

Specificity/True negative value = $TN / (TN + FP) = 132 / (132 + 61) = 0.68$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = (4 + 132) / (4 + 132 + 61 + 2) = 0.70$

Negative predicted value: $TN / (TN + FN) = 132 / 134 = 0.985$

All Elbows	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 16	False positive: 21
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 1	True negative: 92

Precision (predictive value) = $TP / (TP + FP) = 16 / (16 + 21) = 0.43$

Recall/Sensitivity = $TP / (FN + TP) = 16 / (16 + 1) = 0.94$

Specificity/True negative value = $TN / (TN + FP) = 92 / (92 + 21) = 0.81$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = (16 + 92) / (16 + 92 + 21 + 1) = 0.83$

Negative predicted value: $TN / (TN + FN) = 92 / 93 = 0.99$

All ankles	tender	Non-tender
$D_{t_{max}} \geq 0.5^{\circ}C$	True positive: 22	False positive: 23
$D_{t_{max}} < 0.5^{\circ}C$	False negative: 1	True negative: 57

Precision (predictive value) = $TP / (TP + FP) = 22 / (22 + 23) = 0.49$

Recall/Sensitivity = $TP / (FN + TP) = 22 / (22 + 3) = 0.88$

Specificity/ True negative value: $TN / (TN + FN) = 57 / 58 = 0.98$

True negative value = $TN / (TN + FP) = 57 / (57 + 23) = 0.71$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = (22 + 57) / (22 + 57 + 23 + 1) = 0.77$

Negative predicted value: $TN / (TN + FN) = 57 / 58 = 0.98$

All joints	tender	Non-tender
$Dt_{max} \geq 0.5^{\circ}C$	True positive: 52	False positive: 105
$Dt_{max} < 0.5^{\circ}C$	False negative: 10	True negative: 281

Precision (predictive value) = $TP / (TP + FP) = 52 / (52 + 105) = 0.33$

Recall/Sensitivity = $TP / (FN + TP) = 52 / (10 + 52) = 0.84$

Specificity/True negative value = $TN / (TN + FP) = 281 / (281 + 105) = 0.73$

Accuracy = $(TP + TN) / (TP + TN + FP + FN) = (281 + 52) / (52 + 10 + 105 + 281) = 0.74$

Negative predicted value: $TN / (TN + FN) = 281 / 291 = 0.96$