KoroiBot

Improving humanoid walking capabilities by human-inspired mathematical models, optimization and learning

Anthropometric Data Table

Subject name			Date	
Age		Sex		
Weight [kg]		Height [mm]		
Other comments				

Segment Segment		Definition	Length [mm]
1	Hand	wrist axis / 2nd knuckle middle finger	
2	Forearm	elbow axis / ulnar styloid	
3	Upper Arm	glenhumeral axis / elbow axis	
4	Forearm & Hand	elbow axis / 2nd knuckle middle finger	
5	Total Arm	glen humeral joint / ulnar styloid	
6	Foot	lateral malleolus / head 2nd metatarsal	
7	Shank	femoral condyles / medial malleolus	
8	Thigh	greater trochanter / femoral condyles	
9	Foot & Shank	femoral condyles / head 2nd metatarsal	
10	Total Leg	greater trochanter / medial malleolus	
11	Head and Neck	C7-T1 & first rip / ear canal	
12	Shoulder	sternoclaviar joint / glenhumeral axis	
13	Thorax	C7-T1 / T12-L1 & diaphragm	
14	Abdomen	T12-L1 / L4–L5	
15	Pelvis	L4-L5 / greater trochanter	
16	Thorax & Abdomen	C7-T1 / L4-L5	
17	Abdomen & Pelvis	T12-L1 / greater trochanter	
18	Trunk	greater trochanter / glen humeral joint	
19	Knee width	femoral condyles width	
20	Ankle width	malleolus	
21	Ellbow width	elbow joint width	
22	Wrist width	ulnar styloid	
23	Hand width	hand width at first knuckle	
24	Hand length	wrist to middlefinger/ringfinger	
25	Shoulder offset		

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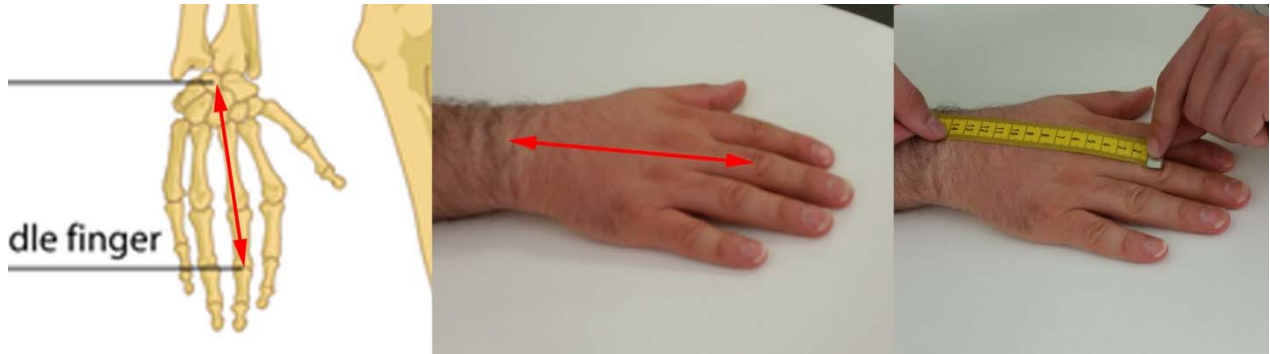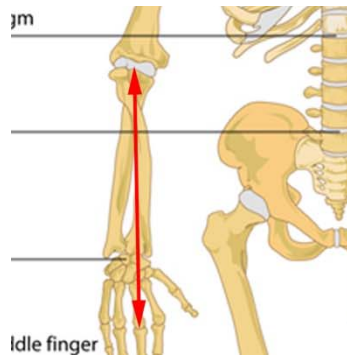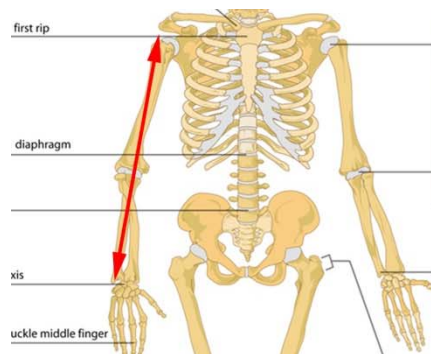Improving humanoid walking capabilities by human-inspired mathematical models, optimization and learning

ear canal

sternoclavicular joint

C7-T1 first rip

glenohumeral axis

T12-L1 diaphragm

elbow axis

L4-L5

ulnar styloid

wrist axis

greater trochanter

2nd knuckle middle finger

femoral condyles

medial malleolus

lateral malleolus

head 2nd metatarsal

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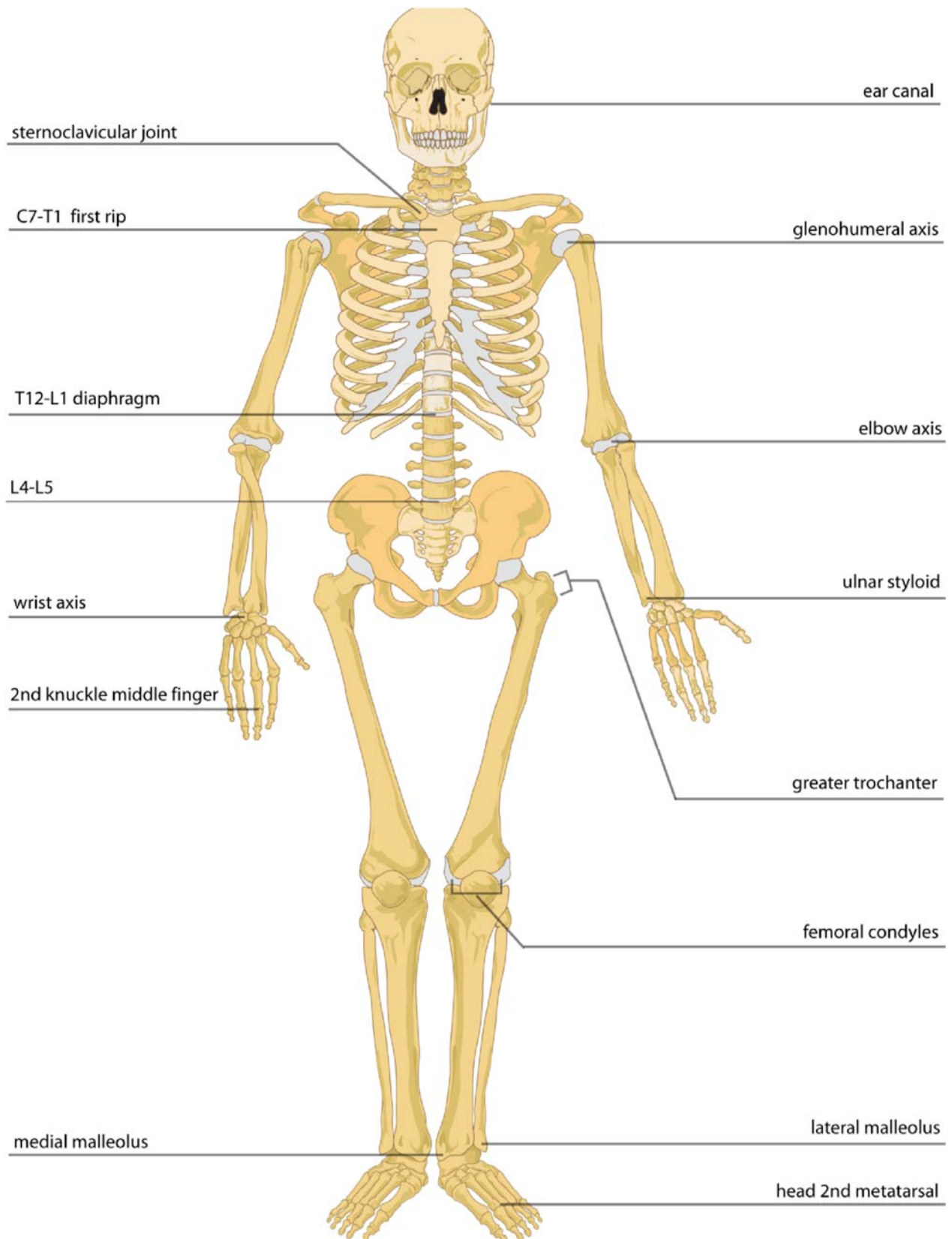
1. Hand

Measure from hand wrist to second knuckle of the middle finger

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2. Forearm

Measure from elbow (line between elbow and bend) to hand wrist joint

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3. Upper Arm

Measure from rotation axis of shoulder to rotation axis of elbow (line between elbow and bend)

4. Forearm and Hand

Measure from rotation axis of elbow (line between elbow and bend) to second knuckle of the middle finger

5. Total Arm

Measure from rotation axis of shoulder to hand wrist

6. Foot
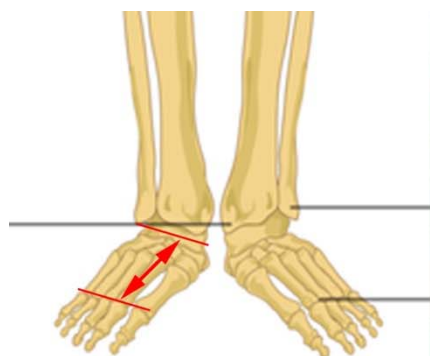
Measure from ankle to middle foot (the line which arises if you bend your foot)
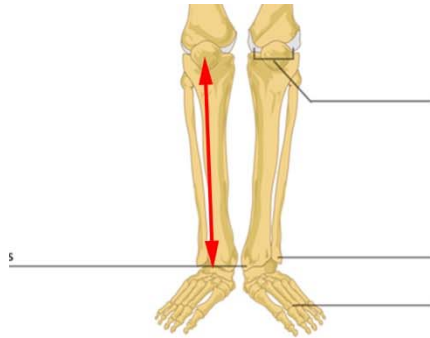
7. Shank

Measure from ankle to rotation axis of knee (line between knee and bend)

8. Thigh
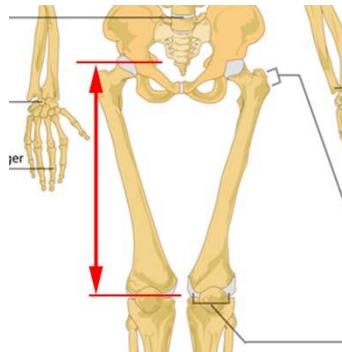
Measure from rotation axis of upper leg/hip to rotation axis of knee (line between knee and bend)

9. Foot and Shank
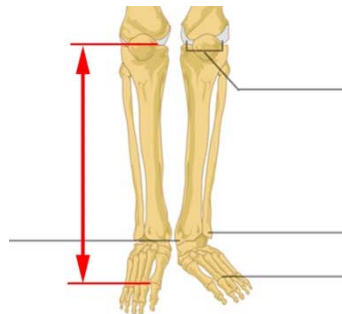
Measure from rotation axis of knee (line between knee and bend) to middle foot (the line which arises if you bend your foot)

10. Total Leg
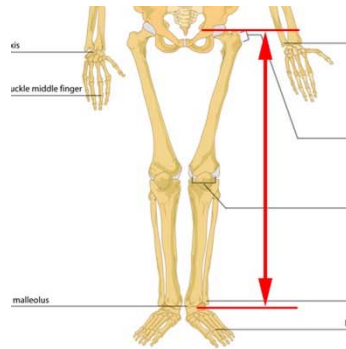
Measure from rotation axis of upper leg/hip to ankle

11. Head and Neck
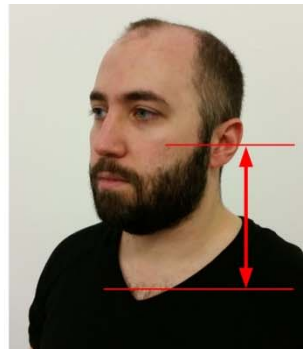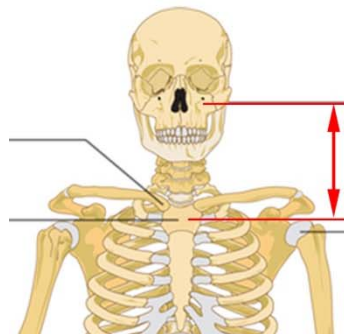
Measure from middle of the auditory canal entry (significant point outside the ear over ear lobe) to collarbone

12. Shoulder
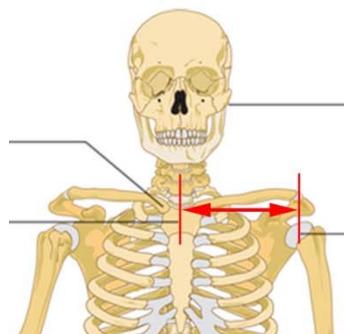
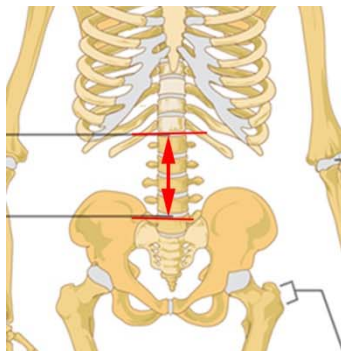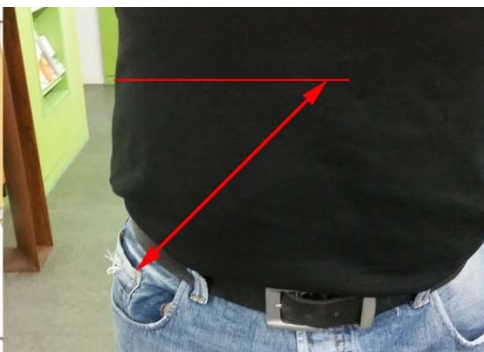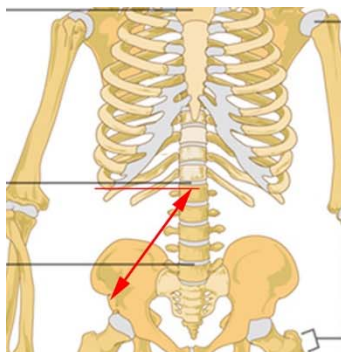Measure from middle of the collarbone to rotation axis of the shoulder/upper arm

13. Thorax
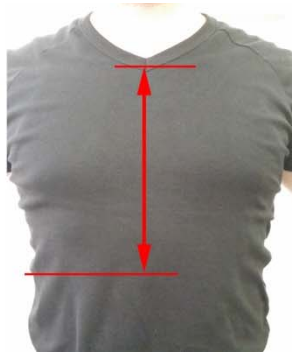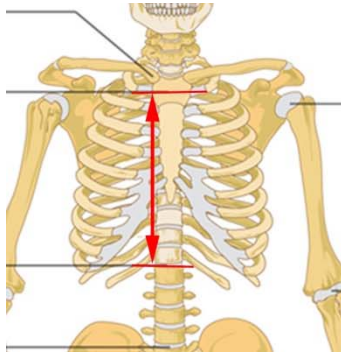
Measure from middle of the collarbone to central projection of last rip (not directly to the last rip, to an imaginary line from the last rip below the collarbone)

14. Abdomen

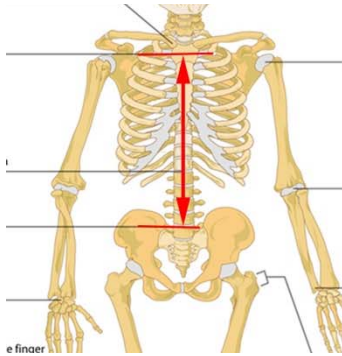Measure from the last rip (not directly to the last rip, to an imaginary line from the last rip below the collarbone) to the central projection of the hip bones.

15. Pelvis

Measure from the frontal hip bone to the central projection of the last rip (not directly to the last rip, to an imaginary line from the last rip below the collarbone)
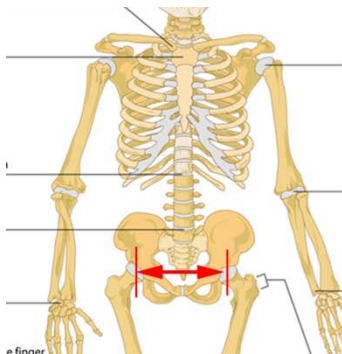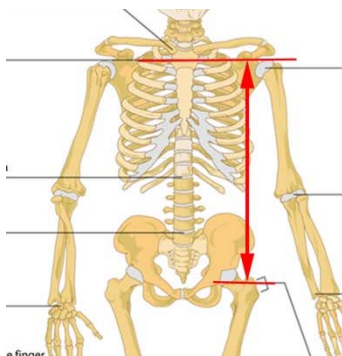
16. Thorax and Abdomen

Measure from the middle of the collarbone the central projection of the hip bones

17. Pelvis

Measure between the left and right most outstanding frontal parts of the hip bone

18. Trunk

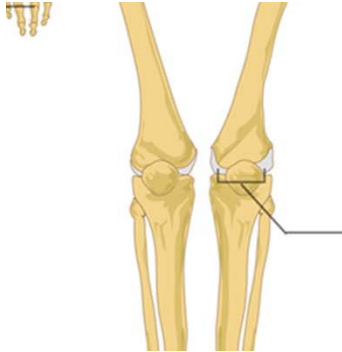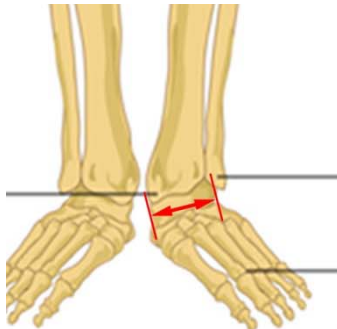Measure from hip bone to rotation axis of the shoulder/upper arm
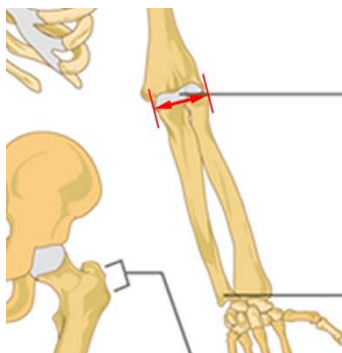
19. Knee Width

Measure the knee width of the total knee (not only the knee cap), the measuring tape has to be hold straight

20. Ankle width

Measure the ankle width, the measuring tape has to be hold straight

21. Elbow width

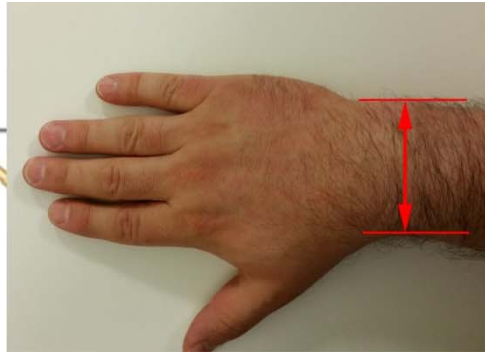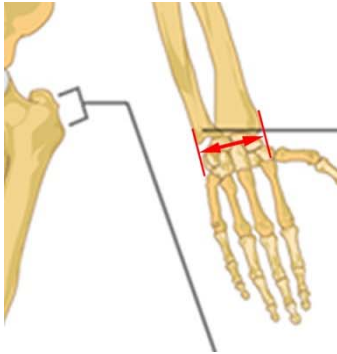Measure the elbow width, the measuring tape has to be hold straight
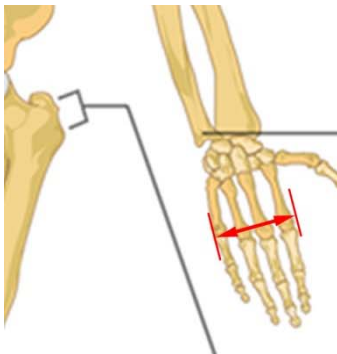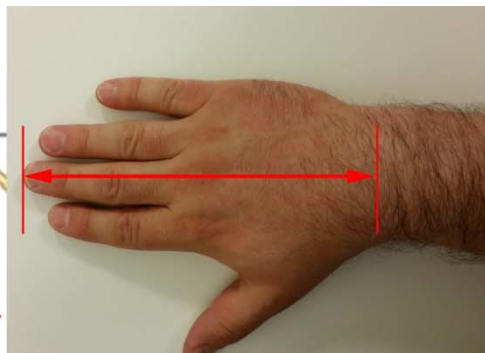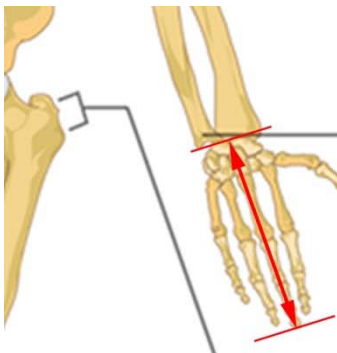
22. Wrist width

Measure the wrist width, the measuring tape has to be hold straight

23. Hand width

Measure the hand width, the measuring tape has to be hold straight

24. Hand length
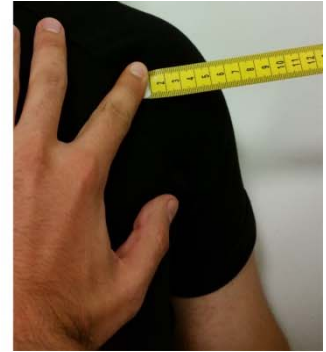

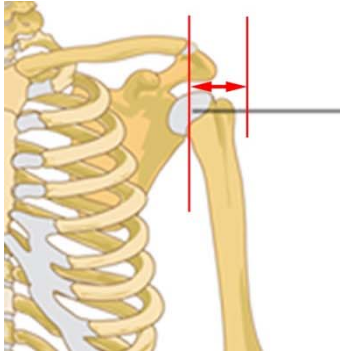Measure from the wrist to the top of middle finger

25. Shoulder offset

Measure from rotation axis of the shoulder/upper arm to the outside of the upper arm/shoulder, the measuring tape has to be hold straight

For all measurements the measuring band should always be held as straight as possible and should not be bended around body segments.