

Supplementary figure 1

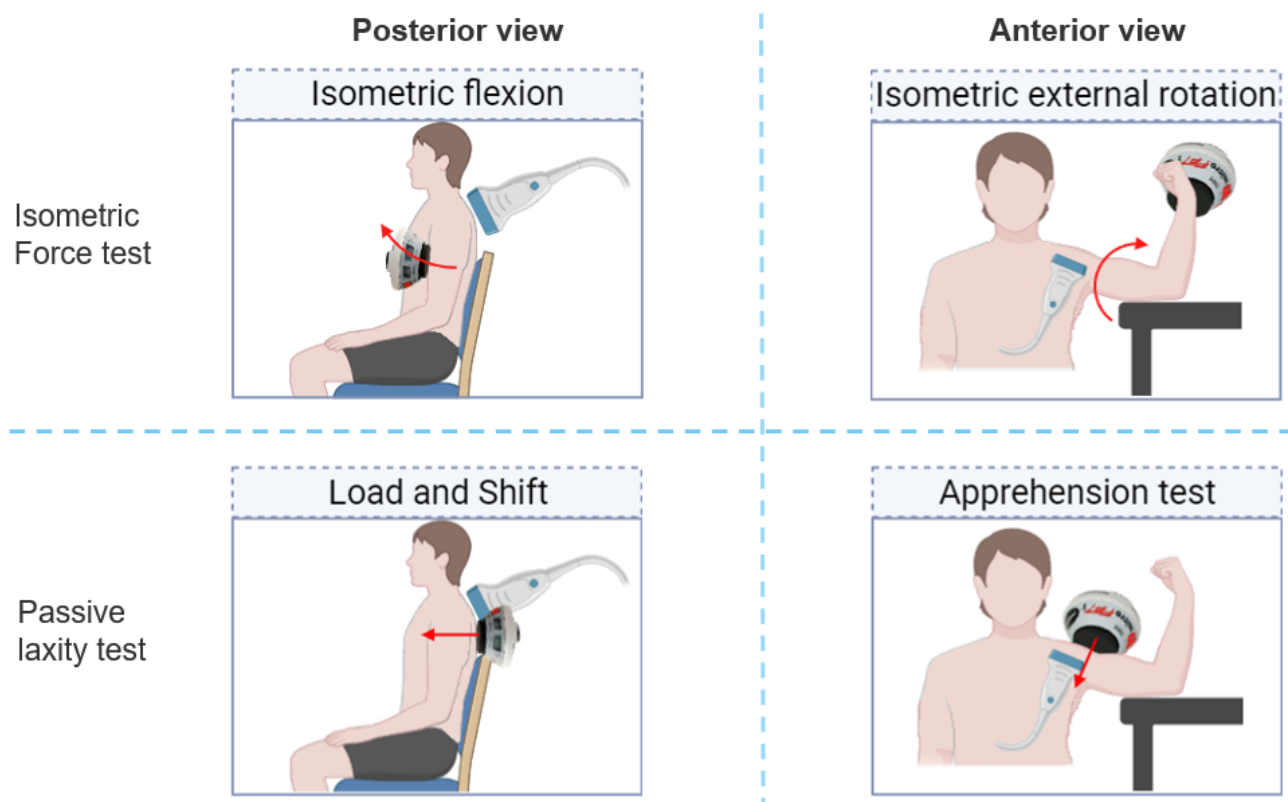
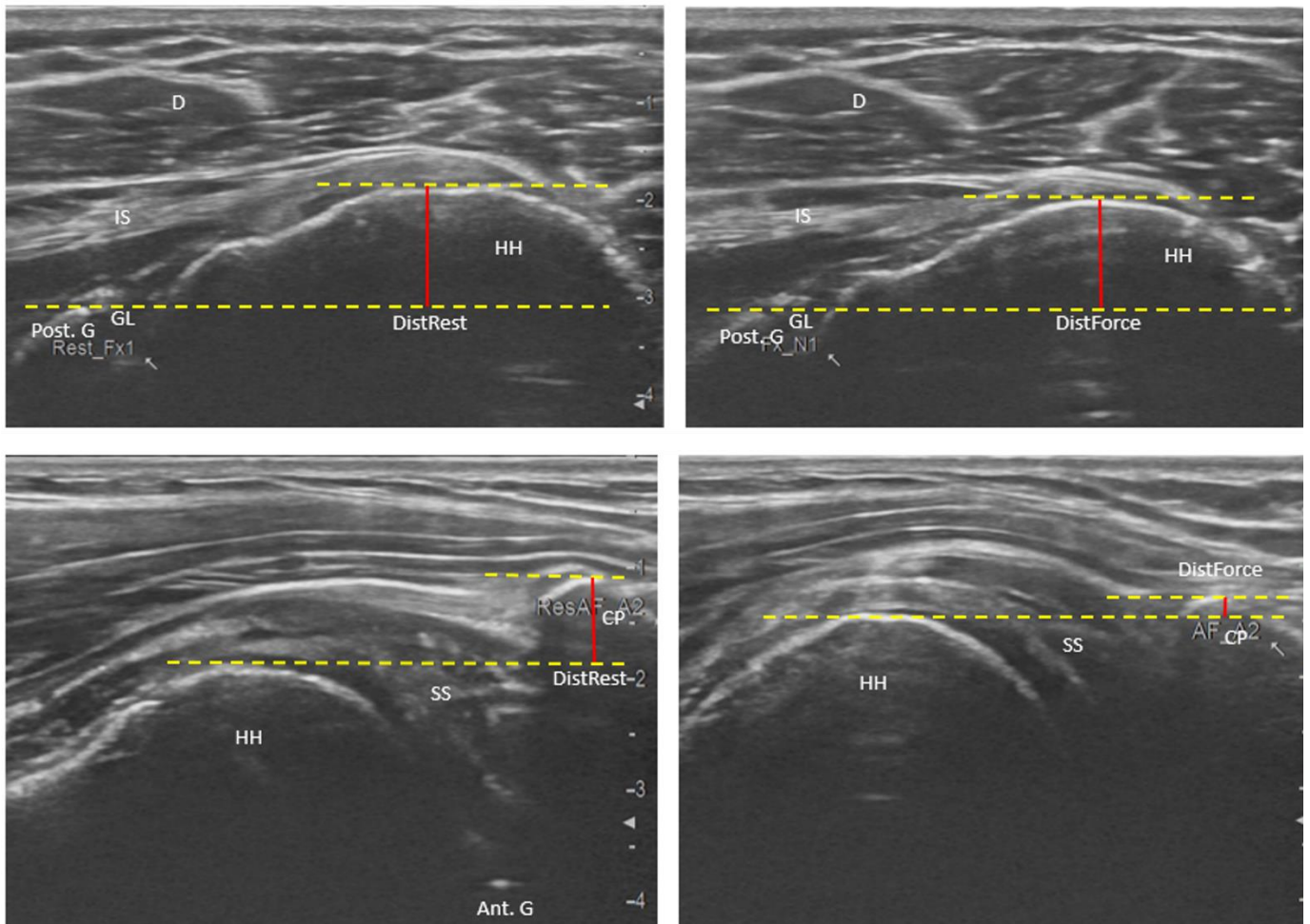


Illustration of the ultrasound procedure

Supplementary figure 2

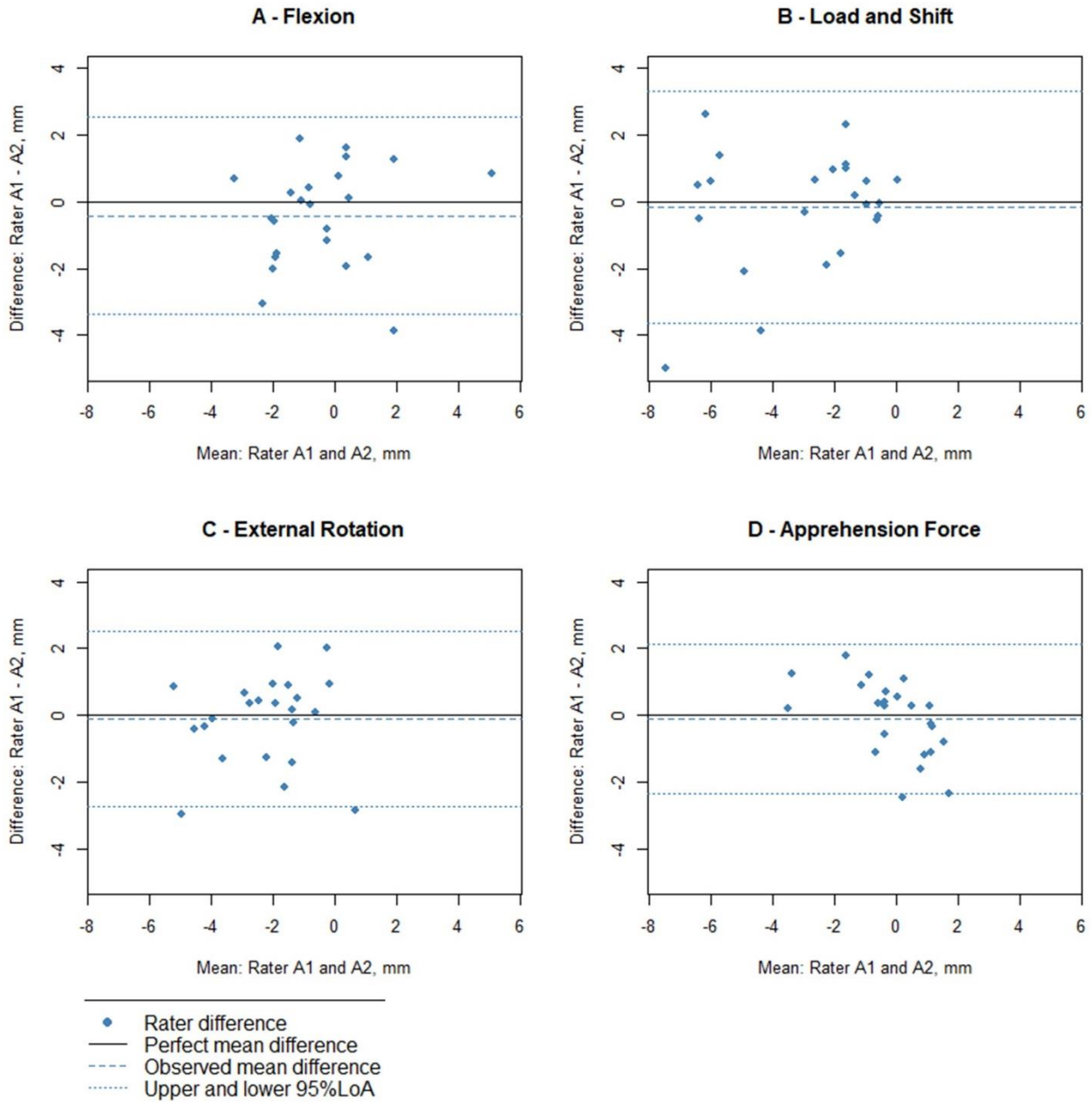


#### Anatomical landmarks.

Upper left: Baseline image, posterior view. Upper right: Isometric flexion, posterior view. The yellow dotted lines represent the borders of the glenoid and humeral head. Post. G = posterior glenoid; GL = glenoid labrum; HH = humeral head; IS = infraspinatus tendon; D = deltoid muscle. The red line represents the shortest distance between the two lines. The translation is calculated as  $\text{DistForce} - \text{DistRest}$ .

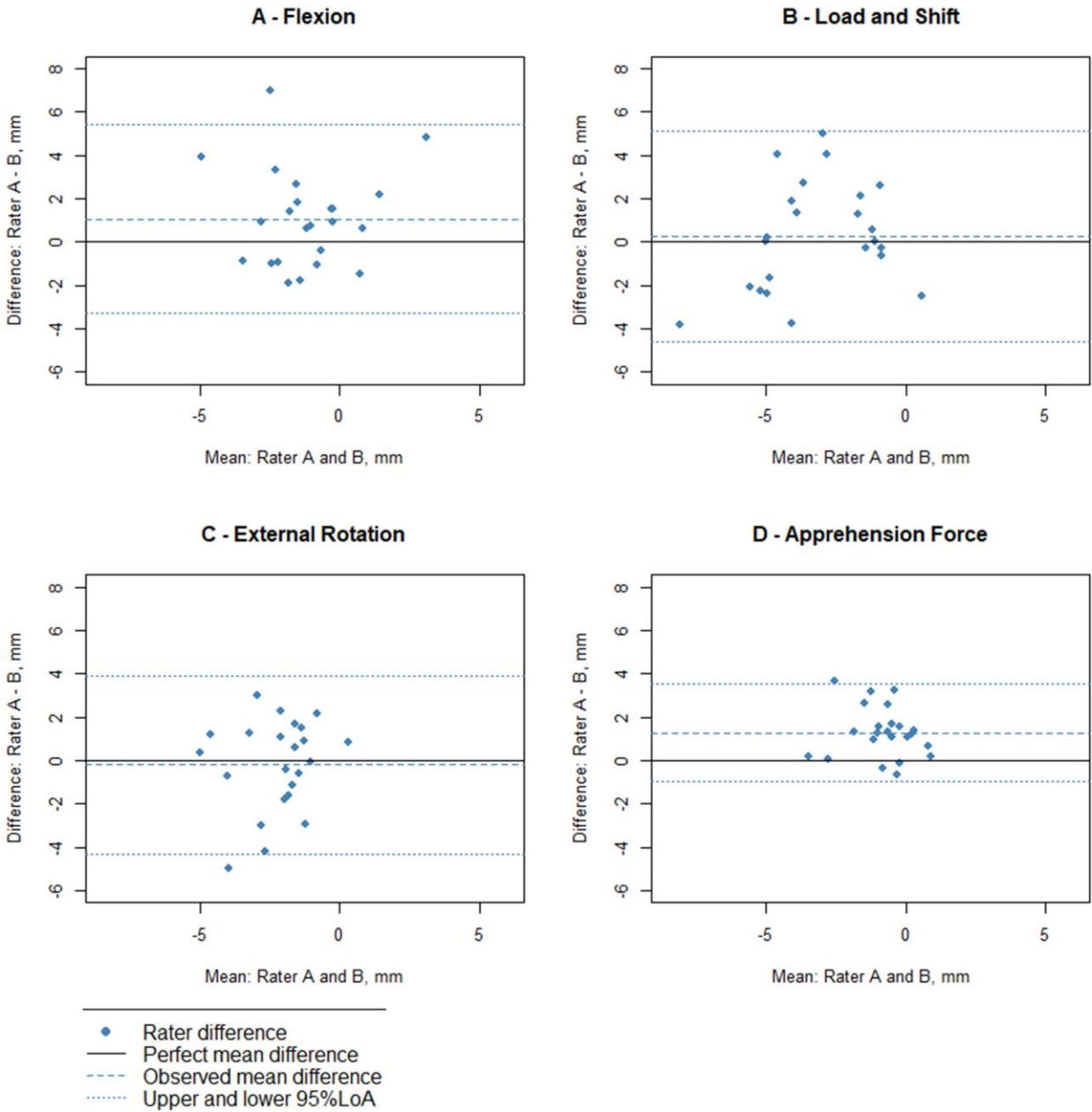
Lower left: Baseline image, anterior view. Lower right: Apprehension test, anterior view. The yellow dotted lines represent the borders of the coracoid process and humeral head. HH = humeral head; Ant. G = anterior glenoid; CP = coracoid process; SS = subscapularis tendon. The red line represents the shortest distance between the two lines. The translation is calculated as  $\text{DistForce} - \text{DistRest}$ .

Supplementary figure 3



Bland-Altman Plots: rater differences (test 1 – test 2) (Y-axis), rater mean measurement ( $(\text{test 1} + \text{test 2})/2$ ) (X-axis) and 95% limits of agreement (LOA), A. Isometric flexion. B. Load and Shift. C. Isometric external rotation. D. Apprehension Force.

Supplementary figure 4



Bland-Altman Plots: rater differences (rater A – rater B) (Y-axis), rater mean measurement ((Rater A + Rater B)/2) (X-axis) and 95% limits of agreement (LOA), A. Isometric flexion. B. Load and Shift. C. Isometric external rotation. D. Apprehension Force.