



**Figure S1:** Description of motion tasks used in the study. (A–C) summarizes the three motion tasks used to investigate joint motion range, all commonly measured with goniometer in clinic: shoulder flexion–extension (A), elbow flexion–extension (B), and forearm pronation–supination (C). Figure (D–I) describes the six motion tasks based on the modified Mallet scale, see [11] for details: (D) global abduction (range in global abduction is graded visually), (E) global external rotation (range in external rotation is graded visually), (F) hand to neck (the ability to reach the neck is graded in clinic), (G) hand to spine (the ability to reach the back is graded in clinic), (H) hand to mouth (the ability to reach the mouth without abduction is graded in clinic) and (I) internal rotation (the ability to reach the belly without wrist flexion is graded in clinic). Motion directions and angles of clinical interest when grading dysfunction are marked in each figure (D–I), where the person’s right arm represents the injured side.