HOME-BASED VIDEO APPLICATION TO QUANTIFY INFANT POSTURAL CONTROL AND MOVEMENT: Angles-Video Goniometer®

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Background
- Early intervention takes places primarily outside of clinics in the natural setting of the home
- Infant posture and movement is difficult to document
- Both visual and goniometric methods of measurement in infants have low reliability1
- Purpose: Create a method to capture functional movement in a quantitative way in infants
- Provide the method as an inexpensive, user-friendly application on phone or iPad

Description
- The Angles Video Goniometer application for iPhone and iPad was developed as a simple and intuitive tool for measurement of infant movement.
- The app either takes or imports videos from iPhone or iPad, and allows the user to drag the video to select specific frames for goniometric measurement of angles
- Use mirrors that of a real goniometer, but allows measurement to be taken during a functional, goal-directed movement

Use
- Move video to desired movement with slider
- Use + or – buttons to find the exact frame
- Touch angle points on screen just as you would line up a goniometer – must be a sagittal view
- Drag points to get exact position of angle
- Take multiple frames if you want to calculate velocity

Reliability & Validity
- Within 1° of goniometer in pilot testing
- Intraclass correlation coefficient=0.91 between 3 raters for infant sitting videos in START-Play study
- ICC agreement higher than manual goniometry1
- ICC between 3 coders for infant angles greater than photo method2

After marking angles:
- Drag marked dots to adjust or undo mark and correct
- Select any unwanted frames and trash them
- Press the export button to get spreadsheet of values for quantification of movement or further analysis

Export will provide:
- Times of each selected frame
- X-Y points coordinates of selected points
- Angles created for intersecting lines

Select points (x-y coordinates) if desired for further analysis; points represent pixels of screen
- Select angles for goniometric measures

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References
3. ©Nathaniel Joseph Cochran 2017; nathancochran.info

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