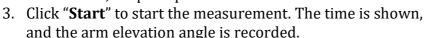


User manual for ErgoArmMeter

ErgoArmMeter is an smartphone application for measuring arm elevation during work. It is shown by research that work with elevated arm may lead to shoulder/neck disorders. With ErgoArmMeter, it is possible to measure arm elevation during work easily and with low cost.

To start with, attach the phone using a sport armband on the upper arm, with the upper edge just below the deltoid muscle (see Figure 1):

- 1. Start a measurement by clicking "+", fill in a project name and a recording number and "Create" the trial.
- 2. Calibration: let the subject lean to the measuring side, holding some weight in hand (e.g. a 2 kg dumbbell or similar) with a straight-arm (see Figure 2). Click "Calibrate", keep the posture for 2 seconds.



- 4. Press "**Stop**" to end the measurement. To view the results, click on the trial name in the trial list.
- 5. Click "**Share**" to send the results and the whole data set via email. A csv file including the angles and angular velocity data during the measurement can be viewed and further analysed with Excel.

Notice:

Since ErgoArmMeter uses accelerometer and gyroscope in the phone, it requires the phone remain unlocked to stay functioning. For iPhone, you can achieve it by changing "Auto-Lock" function, via "Settings-General-AutoLock-Never", and then use the phone to measure arm elevation as long as you need



Figure 1. The phone's position on the arm.



Figure 2. Calibrating posture.

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