

Mr. OS Blocks Measurement Protocol

I. Rationale for doing the blocks measurement

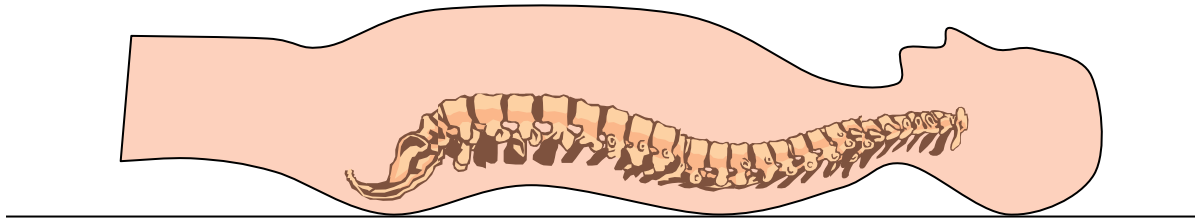
With aging, there is a tendency for the sagittal convexity of the normal thoracic spine to become accentuated. Hyperkyphosis is an excess of this process, commonly referred to as the dowager's hump, and assumed to affect predominantly older women. Part of this assumption stems from the misconception that hyperkyphosis equals thoracic spine fractures; however, studies demonstrate that more than half of those with the worst degrees of kyphosis don't have underlying vertebral fractures. Likewise, several observational studies suggest that older men are at least as affected by age-related changes in posture as older women, and that compared to women, hyperkyphotic men may even be at greater increased risk of adverse health outcomes such as worse physical function, falls, and increased mortality. Given that our preliminary work suggests that there may be clear sex differences in age-related posture that may have different and significant health related implications, further investigation of male hyperkyphosis is warranted.

II. Description of procedure

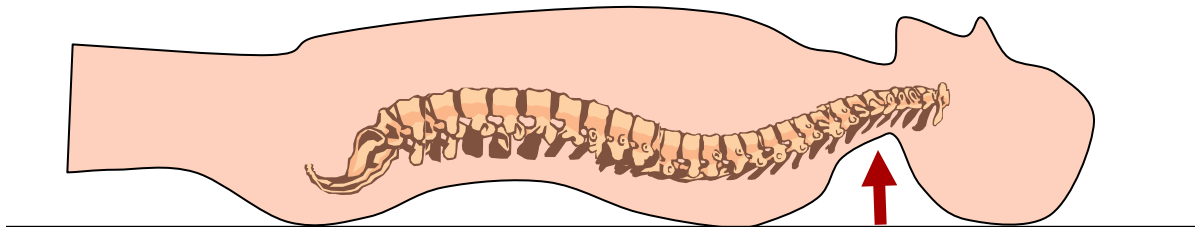
1. Have the participant lie on the DXA table.
2. Slide blocks under participant's head until the participant's head is in a neutral position (the occiput should be touching the surface and the eyes should be gazing forward at the ceiling). The head position should be similar to that of the Frankfort plane used in the standardized measurement of height. Please see figure on the next page.
3. It is recommended that in addition to step 2, technicians should add more blocks than needed and then subsequently remove them to better observe when the head is neutral. Sometimes in difficult cases, repeated adding on and removing one block helps determine the optimal neutral position.
4. Record the number of blocks needed (0 to 10, or if ≥ 10 are needed, just indicate 10) on the DXA TELEform. If the subject is unable to complete the measurement, please so indicate on the form. If the reason for non-completion is due to pain, then also record this information.

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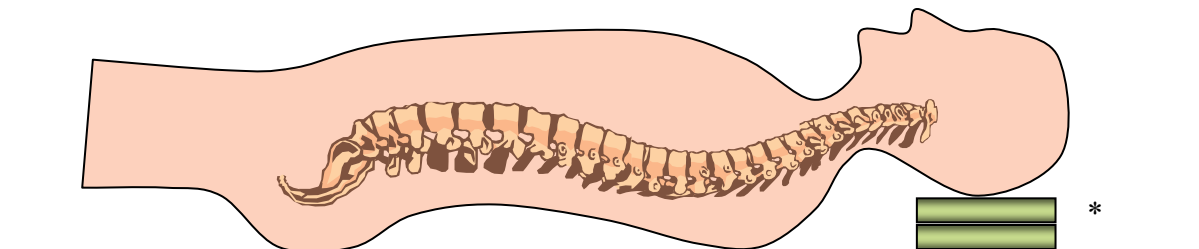
A: NORMAL SPINE WITH NEUTRAL HEAD AND NECK POSITION



B: KYPHOTIC SPINE WITH HYPEREXTENDED NECK



C: KYPHOTIC SPINE WITH HEAD ON BLOCKS, WHICH RESTORES NEUTRAL HEAD AND NECK POSITION



*Each block measures 1.7 cm thick.

Mr. OS Blocks Measurement Protocol, cont.**III. Guidelines to ensure repeatability between examiners within each clinic site**

1. Each examiner that is to be certified will need to complete 5 measurements on 5 different adults. These 5 adults will need to be measured at least twice by two different examiners so that the number of blocks obtained by one examiner can be directly compared to those of another examiner. Each examiner should be blinded to the other's measurements, and the practice population should include a range of different kyphotic postures.
2. Record the clinic site and examiner's initials on a data training TELEform along with a careful record of the participants' identification (assign a code number or letters) and accompanying block measurement so that a direct comparison can be made with the other examiner's measurements.
3. Upon completion of these trial measurements, make a copy of the data and send to: Deborah Kado, MD, MS, Division of Geriatrics, David Geffen School of Medicine at UCLA, 10945 Le Conte Ave, Suite 2339, Los Angeles, CA 90095.
4. Deborah will assess repeatability for each site, and provide feedback to the individual clinic center. If agreement is poor (<75%), then further investigation will be needed to determine the source of variability. Once identified, the examiners should then repeat the measurements on 5 more adults who demonstrate a range of different kyphotic postures.

IV. Trouble shooting

If there are any further questions or concerns, please feel free to contact, Deborah Kado, MD, MS by e-mail at: dkado@mednet.ucla.edu or by phone (310) 825-8253.