

John J. Gerhardt, M.D.

Clinical Associate Professor in Orthopedics and Rehabilitation Emeritus

P.O. Box 22248
Portland OR 97269-2248

Phone: (503) 659-0968
Fax: (503) 659-0350

May 30th, 2007

To Whom It May Concern:

As the primary author of the AMA publication "The Practical Guide To Range of Motion Assessment" I feel very confident that my interpretation of the Range of Motion section in the 5th edition of "The AMA publication "Guides to the Evaluation of Permanent Impairment" is accurate.

First of all, it is very important to clarify that dual inclinometry requires the use of two separate inclinometers. I have seen articles and advertising which states that there exists a single inclinometer with "two points" internal to it. This is not equivalent to the use of two separate inclinometers and is not an accurate method for measuring range of motion as shown in the various diagrams in the 5th edition of the AMA Guides.

In "The Guides" under 15.8b on page 400 it states: *"Since spinal motion is compound, it is essential to measure simultaneously motion of both the upper and lower extremes of the spine region being examined"*. This by definition means that the two inclinometer technique is required, since a single inclinometer cannot physically be placed at both ends of the spine region being examined simultaneously.

Although the "Guides" refers to a single inclinometer's use on page 403 under the heading "Stabilization", it is in reference to cervical rotation only, and the statement *"However, two inclinometers are usually needed to measure most movements of the spine"* follows immediately after the reference to the use of a single inclinometer.

As an expert on range of motion, it is my opinion that it is practically impossible to measure accurately with a single inclinometer. I am also surprised to read a claim that the use of a single inclinometer is somehow easier to use than a dual inclinometer. The difficulty in performing measures of lateral bending, or measures of eversion or inversion of the foot make nearly impossible such measures with a single inclinometer.

Even the best electronic single inclinometer with a microprocessor duplicating function cannot compensate for the inadequate stabilization inherent in its use. Dual inclinometry allows one to perform most measures with significantly greater accuracy. We describe in detail the reasons for requiring the two inclinometer technique on pages 7, 8,9,10, 11 and Fig 1-12 on page 15 and in Part 2 : pp 26,27,28,30,31,32,33,34,35,36,37,40,41,42 and 43) in the AMA publication "The Practical Guide To Range of Motion Assessment".

Sincerely,



John Gerhardt, MD

Fellow American Academy of Disability Evaluating Physicians

Fellow of American Academy of Physical Medicine and Rehabilitation

Primary Author of the book "The Practical Guide to Range of Motion Assessment" published by the AMA.

Clinical Associate Professor in Orthopedics and Rehabilitation Emeritus, Oregon Health Sciences University

Inventor of the SFTR numerical documentation system in the Neutral Zero Measuring Method for Standardized Range of Motion Measurements