

3

Range of Motion

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Range of motion (ROM) is the amount of movement that occurs at a joint and can be defined as the measurement of motion available (or the arc of motion available) at a joint or through which the joint passes, resulting from the joint structure and surrounding soft tissue. ROM measures the magnitude of rotary motion (or angular displacement) and is a measure of the joint osteokinematics (Houglum & Bertoti, 2012; Levangie & Norkin, 2011). Joint function is influenced by the several factors shown in Figure 3-1. The structure of the joint, externally applied forces, and internal forces are a few factors, and joint motion depends on the restraining effects of ligaments and muscles crossing the joint, skin and other soft tissues, the bulk of tissue in adjacent segments, and client factors such as age and gender. In addition, the measurement of ROM involves methodological factors such as accurate recording, instrumentation, and the type of testing done.

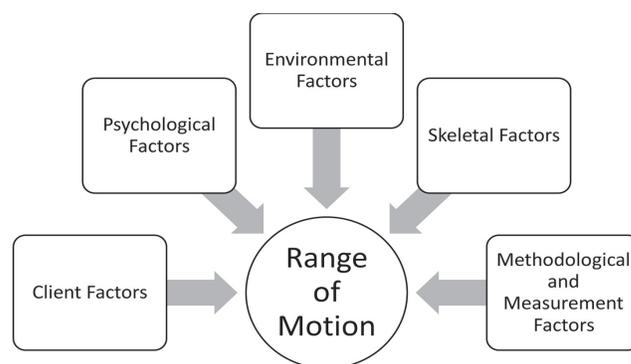


Figure 3-1. Factors influencing ROM.

FACTORS INFLUENCING RANGE OF MOTION

Client Factors

Client factors are person-level factors such as genetics, gender, age, pain, and lifestyle choices affecting health as it relates to joint movement.

Genetics

Individual subject factors can vary due to genetic predispositions for greater motion (hypermobility) as is sometimes seen in hyperextension at the elbow. There may also be less motion (hypomobility), which may happen when there is soft tissue tightness or contractures that limit full joint motion.

Different activities put different stresses on joints, which may change the amount of motion that occurs. Gymnasts and cheerleaders, for example, may have greater wrist extension due to repeated handstands or placing body weight on extended wrists. Pianists may have more finger abduction and extension due to years of playing and reaching for keys at the far ends of the keyboard. Musicians of stringed instruments often need full and prolonged finger abduction and flexion to

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Kinesiology for Occupational Therapy, Third Edition (pp. 37-65).

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