

IS A LAX JOINT ALWAYS UNSTABLE?

Treatment of thumb carpometacarpal (CMC) osteoarthritis (OA) is a frequent topic of research, continuing education, and professional debate. In a recent article Jansen, Hendrick and Ellis identified that “the terms laxity and instability were often used interchangeably” by hand therapists treating patients with thumb CMC osteoarthritis.

Merriam Webster’s online medical dictionary provides the following definitions:

- **Laxity:** the quality or state of being loose
- **Loose:** having relative freedom of movement; not dense, close, or compact in structure or arrangement; not tightly drawn or stretched.
- **Instability:** the quality or state of being unstable
- **Unstable:** characterized by lack of control or stability

It seems the question is whether a lax/loose joint must be described as unstable?

For example, if I can hyperextend my knee one could describe the joint as “loose” as it has a “relative freedom of movement.” In other words, it goes beyond the expected norm. But is it unstable? I would describe my knee joint as unstable if there is a situation in which I cannot prevent the knee hyperextension from occurring (“lack of control”). For the instability to occur, the knee must be under load (stress). In extreme cases, muscle pull alone can provide enough stress.

I therefore assume I can examine the thumb joints and determine whether each joint is “lax/loose” but I can only describe the joint as unstable when it is observed to demonstrate the same “looseness” (instability) when under load/stress.

Although laxity can be present without instability, instability can only be demonstrated if laxity exists.

Since the cartilage on head of the thumb metacarpal normally extends dorsally, thumb metacarpophalangeal (MP) joint hyperextension is relatively common. One assumes this contributes to the frequent MP joint hyperextension seen in combination with dorsal subluxation of the thumb CMC joint. But does MP joint hyperextension demonstrated on manual examination determine the thumb is unstable under load?

Jansen, Hendrick and Ellis also state in their article that “there was disagreement as to whether instability could be modified by developing muscle strength, or whether treatment should be focused on compensating for instability.”

A personal experience is provided in response to this topic:

An attritional rupture of my left thumb MP ulnar accessory collateral ligament many years ago contributed to my ability to hyperextend the MP joint of my left thumb (no hyperextension on my right). With increasing age, I began to develop classic thumb CMC OA pain with an associated zig-zag collapse pattern (CMC joint flexion/adduction, MP joint hyperextension, and interphalangeal joint hyperflexion). I endeavored to prove to myself I could eliminate my collapse pattern (instability).

I chose normal use of my hand in a small orthosis as my treatment (encompassing only the CMC joint). My “exercise” occurred within the orthosis, assuring I was always contracting the thenar muscles for CMC stability and at no time could I shift into collapse. I had no tightness requiring manual

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(continued)

stretching, but I monitored my thumb closely.

Although many therapists currently advocate neuromuscular reeducation (isolated exercises) to accomplish this same goal, I chose full time use of an orthosis as the way of constantly assuring the correct “exercise” posture. It was important to me that there was no occasion in which I could revert to the previous collapse pattern.

After 18 months of full-time wear of the thumb orthosis which allowed me to contract my thenar muscles in a balance posture, I can no longer demonstrate a collapse pattern—even under heavy load. A current manual examination of my left thumb, however, reveals continuing joint laxity at both my CMC and MP joints (my MP joint can still hyperextend), but in my opinion, I no longer have instability.

Although I begin each clinical evaluation of patients with thumb CMC OA with a manual examination of all thumb joints for laxity, finding laxity does not determine that I will observe instability. It does, however suggest vulnerability for instability.

My suggestion is that we examine the passive mobility of each thumb joint to describe specific joint “laxity” of each joint, but we describe the joint/s only as “unstable” if we observe the thumb unable to maintain a balanced posture under load. To observe the thumb under load and detect instability, I suggested the [Colditz Tear Test](#).(1)

To complicate this topic even further, ask five

friends to write a sentence. Perhaps four of them will demonstrate a pattern of thumb instability when holding the pen, also proving they have some joint laxity. But neither joint laxity nor functional instability of the thumb in the absence of pain detects symptomatic pathology!!

NOTE: A recent article in the UK based journal, *Hand Therapy*, entitled “Therapy Management of Thumb Carpometacarpal Osteoarthritis: Exploring Uk Therapists’ Perceptions of Joint Instability” by Jansen, Hendrick and Ellis (2) spurred the topic of this Clinical Pearl. We encourage your review of the article.

1. Colditz JC. Dynamic loading posture of the thumb: The Colditz Tear Test. *J Hand Ther.* 2013; 26(4):360–362.

2. [Jansen V, Hendrick P, Ellis J. Therapy management of thumb carpometacarpal osteoarthritis: Exploring UK therapists’ perceptions of joint instability. *Hand Therapy.*](#)

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