

Benign Joint Hypermobility Syndrome is a connective tissue disorder in which MSK symptoms occur in the absence of systematic rheumatologic disease. Primary clinical manifestations include pain and hypermobility in multiple joints. Pain can involve any joint but most commonly involves the knee or ankle (presumably because they are weight bearing). Pain is exacerbated with activity or repetitive use, and morning stiffness is not common. Less common symptoms include: joint stiffness, myalgia, cramps and non-articular limb pain. Individuals with BJH may experience pain with manipulation. Both the Brighton criteria and Bulbena criteria have been used to assess BJH, however, the Brighton criteria is most often used.

A Beighton score of 4 or more points is considered indicative of generalized ligament laxity whereas the Brighton criteria is used for the diagnosis of BJHS.

The Beighton score as seen in Boyle et al (2003), is determined by the following tests:

Wrist Flexion and Thumb Opposition

The thumb-opposition test is demonstrated by the rater and then done passively by the subject. The subject stabilized the distal portion of the forearm with the thumb of the opposite hand, and the thumb being tested is passively abducted by the fingers of the opposite hand toward the volar aspect of the forearm with the wrist in flexion. If the thumb can be abducted to touch the forearm, then the score is 1. Opposition less than this results in a score of 0.

Elbow Extension

The elbow-extension test is performed with the subject's shoulder abducted to approximately 80 degrees and the forearm supinated. The rater then stabilizes the proximal elbow from the posterior side while applying a gentle force to the subject's palmar wrist to achieve passive end-range extension. The center of the fulcrum is placed over the lateral epicondyle of the humerus, and the distal arm of the goniometer is positioned along the lateral midline of the forearm and aligned with the radial styloid process. The proximal arm is positioned along the lateral midline of the subject's humerus. Hyperextension of the elbow greater than 10 degrees results in a score of 1. Hyperextension of the elbow less than 10 degrees results in a score of 0.

Trunk and Hip Flexion

The trunk-flexion test is demonstrated by the rater and then repeated by the subject. The subject attempted to touch the palms flat to the floor while keeping the knees either extended or hyperextended. If the subject is able to flex the trunk so that the palms

are flat on the ground, then trunk flexion receives a score of 1; otherwise, a score of 0 is assigned.

Knee Extension

The knee-extension test is conducted in supine with 1 or 2 towel rolls placed under the ankle. The fulcrum of the goniometer is placed over the lateral epicondyle of the femur, and the proximal arm is aligned with the lateral midline of the femur, using the greater trochanter for reference. The distal arm is aligned with the lateral malleolus. Hyperextension of the knee greater than 10 degrees results in a score of 1. Hyperextension of the knee less than 10 degrees results in a score of 0.

Simpson (2006), summarizes the Brighton Criteria for the diagnosis of BJHS:

Major Criteria

- Brighton score greater than 4
- Arthralgia for longer than 3 months in 4 or more joints

□

Minor Criteria

- Brighton score of 1, 2, or 3
- Arthralgia (□3-month duration) in one to three joints or back pain (□3-month duration) or spondylosis, spondylolysis/spondylolisthesis
- Dislocation or subluxation in more than one joint, or in one joint on more than one occasion
- Three or more soft tissue lesions (eg, epicondylitis, tenosynovitis, bursitis)
- Marfanoid habitus (tall, slim, span greater than height (□1.03 ratio), upper segment less than lower segment (<0.89 ratio), arachnodactyly)
- Skin striae, hyperextensibility, thin skin, or abnormal scarring
- Ocular signs: drooping eyelids, myopia, antimonogloid slant
- Varicose veins, hernia, or uterine or rectal prolapse
- Mitral valve prolapse

Requirement for Diagnosis (BJHS)

- Any one of the following:
 - two major criteria
 - one major plus two minor criteria
 - four minor criteria

—two minor criteria and unequivocally affected first-degree relative in family history

According to an article seen in *Rheumatology* (2001), evidence suggests that hypermobility is associated with significant musculoskeletal disorders in children. The reason for the association is unclear.

A study by Stewart et al (2004) looked at risk of injury in rugby players with generalized ligament laxity and found that individuals considered hypermobile have a greater risk of injury.

References:

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