Asia-Pacific Chiropractic Journal

eBOOKCHAPTER

Introduction to Chiropractic Manipulative Reflex Technique (CMRT)

(Chapter 6)

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Chapter 6 Benign Joint Hypermobility Syndrome and CMRT

Benign joint hypermobility syndrome (BJHS) was initially defined as the occurrence of musculoskeletal symptoms in the presence of joint laxity and hypermobility in otherwise healthy individuals.

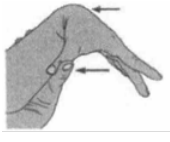
It is now perceived as a commonly overlooked, under-diagnosed, multifaceted, and multi-systemic heritable disorder of connective tissue (HDCT), which shares many of the phenotypic features of other HDCTs such as *Marfan syndrome* and *Ehlers-Danlos syndrome*. (1)

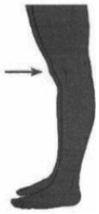
Extra articular manifestations of the BJHS may include the peripheral nervous system. One study found that autonomic nervous system - related symptoms of BJHS patients have a pathophysiological basis, which suggests that dysautonomia is also an extra-articular manifestation in the joint hypermobility syndrome. (2)

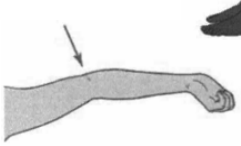
The following is a questionnaire for self-testing to identify hypermobility. It is a 5-part questionnaire to determine BJSH and has been found to be 84% accurate in identifying hypermobility. It is considered positive for hypermobility syndrome if the patient answers in the affirmative for two out of the five questions. (3)

BJHS Questionnaire

- Can you now [or could you ever] place your hands flat on the floor without bending your knees?
- Can you now [or could you ever] bend your thumb to touch your forearm?
- As a child, did you amuse your friends by contorting your body into strange shapes or could you do the splits?
- As a child or teenager, did your kneecap or shoulder dislocate on more than one occasion?
- Do you consider your self "*double jointed*" (3)







BJHS is characterized by increased joint ranges of motion that is commonly seen with patients that can hyperextend their knees and elbows, touch their palms to the floor when bending over, and touching their thumb to their forearm. An assessment tool, the *Beighton Score* (BS), is a set of maneuvers in a nine-point scoring system, used as the standard method of assessment for BJHS and is being used "*as a clinical tool for diagnostic purposes*."(4 - 6)

Chiropractic manipulative reflex technique (CMRT) practitioners need to consider how a patient presenting with joint hypermobility (BJHS) might affect their clinical decision-making options. This might range from autonomic nervous system imbalanced function to how joint instability might affect the treatments that need to be rendered. Therefore, it an important consideration that "*genetic factors have a substantial contribution to joint hypermobility in the adult female population*." (7)

Patients with BJHS may often have sensitivities related to autonomic nervous system imbalance (dysautonomia) which will generally adversely affect their visceral function. This would affect the incidence of the need for CMRT in the BJHS population as well as the complex nature of how these patients might respond to CMRT care. While some BJHS patients may respond quickly and well to CMRT others might need more ongoing care, nutritional and dietary support, and possibly integrative functional medical collaboration.

Beighton Scale

	Left	Right
1. Passive dorsiflexion and hyperextension of the fifth MCP joint beyond 90°	1	1
2. Passive apposition of the thumb to the flexor aspect of the forearm	1	1
3. Passive hyperextension of the elbow beyond 10°	1	1
4. Passive hyperextension of the knee beyond 10°	1	1
5. Active forward flexion of the trunk with the knees fully extended so that the palms of the hands rest flat on the floor	1	

The first four elements of the *Beighton scale* can be given a maximum score of 2, because these are performed bilateral. The last element is scored with 0 or 1. The maximum score for ligament laxity is 9. A score of 9 means hyperlax, whereas a score of zero would mean the patient joints would be considered to be highly restricted. In general a score of 0-3 is considered normal and a score of 4-9 would represent ligamentous laxity. (4 - 6)

The dysautonomia associated with BJHS patients can have affects on the viscera and organ function, for conditions such as:

- Postural Orthostatic Tachycardia (POTS) (8)
- Lower Urinary Tract Symptoms In Women (9, 10)

- Cardiac (Myocardial Cytoskeleton and Extracellular Matrix) Function (11)
- Pelvic Organ Prolapse and Sexual Dysfunction in Women (12)

It is also important to note that patients with BJHS will often have higher levels of sensory processing sensitivity (highly sensitive person character type) which may make this subset of patients sensitive to emotional, psychological, and physical responses associated with CMRT touch and reflex balancing procedures. (13 - 15)

While traditionally CMRT patients either presented as a category one (pelvic torsion with sacral nutation imbalance) or a healing category two (pelvic torsion with sacroiliac joint instability), patients with BJHS will most commonly have chronic category two presentations. BJHS patients with a category two presentation have the following cautions as pertaining to CMRT diagnosis and treatment:

- These patients may or may not have fully developed occipital fiber line one or two presentations, so greater care may be needed to assess their clinical history, clinical presentation, and any visceral reflex patterns.
- With chronic sacroiliac joint instability this will modify the type of *iliopsoas* corrections needed in T2 Myocardial and T11/12 Kidney Syndromes. With both of these CMRT related treatments care is directed to the diaphragm tension patterns. Since commonly the focus in this subset of patients is with joint instability, we will usually be considering the category two, the *iliacus* portion of the iliopsoas muscle for treatment.
- Generally the fascia of patients with BJHS will allow for deeper penetration into regions such as behind the clavicle, under the rib cage, and within the abdominal cavity, so we need to be cautious with our palpation and therapeutic applications of CMRT.

While gender and age play a role in the incidence of BJHS, an approximate range of BJHS patients in the general population is between 10-30%, with 20% as a reasonable estimate. (16 - 18) Though 20% may seem like a 'small' percentage, if we consider that one in out of every five patients may have BJHS, it should help us understand the need for clinical awareness with this subset of patients.

References

1. Grahame R. Joint hypermobility syndrome pain. Curr Pain Headache Rep. 2009 Dec;13(6):427-33.
2. Gazit Y, Nahir AM, Grahame R, Jacob G. Dysautonomia in the joint hypermobility syndrome. Am J Med. 2003 Jul;115(1):33-40.
3. Hakim AJ, Grahame R. A simple questionnaire to detect hypermobility: an adjunct to the assessment of pa6ents with diffuse musculoskeletal pain. Int J Clin Pract. 2003 Apr;57(3):163-8.
4. Malek S, Reinhold EJ, Pearce GS. The Beighton Score as a measure of generalised joint hypermobility. Rheumatol Int. 2021 Oct;41(10):1707-1716.
5. Smits-Engelsman B, Klerks M, Kirby A. Beighton score: a valid measure for generalized hypermobility in children. J Pediatr. 2011 Jan;158(1):119-23, 123.e1-4.
6. Juul-Kristensen B, Røgind H, Jensen DV, Remvig L. Inter-examiner reproducibility of tests and criteria for generalized joint hypermobility and benign joint hypermobility syndrome. Rheumatology (Oxford). 2007 Dec;46(12):1835-41.
7. Hakim AJ, Cherkas LF, Grahame R, Spector TD, MacGregor AJ. The genetic epidemiology of joint hypermobility: a population study of female twins. Arthritis Rheum. 2004 Aug;50(8):2640-4.
8. Kanjwal K, Saeed B, Karabin B, Kanjwal Y, Grubb BP. Comparative clinical profile of postural orthostatic tachycardia patients with and without joint hypermobility syndrome. Indian Pacing Electrophysiol J. 2010 Apr 1;10(4):173-8.
9. Wein AJ. Re: Lower Urinary Tract Symptoms in Women with Benign Joint Hypermobility Syndrome: A Case-Control Study. J Urol. 2015 Aug;194(2):472.

10. Mastoroudes H, Giarenis I, Cardozo L, Srikrishna S, Vella M, Robinson D, Kazkaz H, Grahame R. Lower urinary tract symptoms in women with benign joint hypermobility syndrome: a case-control study. Int Urogynecol J. 2013 Sep;24(9):1553-8.

11. Balli S, Aydın MZ, Gerdan V, Ece I, Oflaz MB, Kibar AE, Dalkiran ES. Evaluation of cardiac functions of patients with benign joint hypermobility syndrome. Pediatr Cardiol. 2014 Feb;35(2):374-9.

12. Mastoroudes H, Giarenis I, Cardozo L, Srikrishna S, Vella M, Robinson D, Kazkaz H, Grahame R. Prolapse and sexual function in women with benign joint hypermobility syndrome. BJOG. 2013 Jan;120(2):187-192.

13. Blum CL. Benign joint hypermobility and sensory processing sensitivity syndromes: a survey of patients over 5 years. J Chiropr Educ. Mar 2022;36(1); 59.

14. Acevedo BP, Aron EN, Aron A, Sangster MD, Collins N, Brown LL. The highly sensitive brain: an fMRI study of sensory processing sensitivity and response to others' emotions. Brain Behav. 2014 Jul;4(4):580-94.

15. Smith TO, Easton V, Bacon H, Jerman E, Armon K, Poland F, Macgregor AJ. The relationship between benign joint hypermobility syndrome and psychological distress: a systematic review and meta-analysis. Rheumatology (Oxford). 2014 Jan;53(1):114-22.

16. Simpson MR. Benign joint hypermobility syndrome: evaluation, diagnosis, and management. J Am Osteopath Assoc. 2006 Sep;106(9):531-6.

17. Clinch J, Deere K, Sayers A, Palmer S, Riddoch C, Tobias JH, Clark EM. Epidemiology of generalized joint laxity (hypermobility) in fourteen-year-old children from the UK: a population-based evaluation. Arthritis Rheum. 2011 Sep;63(9):2819-27.

18. Remvig L, Jensen DV, Ward RC. Epidemiology of general joint hypermobility and basis for the proposed criteria for benign joint hypermobility syndrome: review of the literature. J Rheumatol. 2007 Apr;34(4):804-9.

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