**IAPMR Guidelines**

# PHYSIATRIC MANAGEMENT OF LIGAMENT LAXITY

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## INTRODUCTION

As a Physiatrist we come across many patients with pain syndromes. Very often, patients come with “Pain everywhere”. One major cause for this is Hyperlaxity of Ligaments. Unfortunately this entity is not well recognised and managed.

Background

Bread and butter of a Physiatrist especially in private sector is “Pain Management”. Major pain syndromes dealt by us are

-Low back & Neck pain

Knee pain

Shoulder and elbow pain

Fibromyalgia Syndrome

Polyarthrlgia

Many patients present with multiple pain. All investigations including CRP, Rheumatic profile, Immunological screening and radiological investigations are normal in most of them. Many are misdiagnosed to have Sero-negative RA and placed on Methotrexate. Frequently MRI spine in these patients show multiple disc bulges and degenerations in cervical and lumbar regions and they are stamped to have multiple IVDP. But Musculoskeletal and Neurological examinations often does not correlate with MRI findings.

Careful history in these patients without a positive investigation may reveal that they have pain syndromes, easy fatigability, quick burning out etc for many years. Comorbidities like IBS, Haemorrhoids, Tweet’s syndrome, Myopia, Varicosity veins and growing pains in childhood may also be brought

out on questioning.Reason for these comorbidities can be easily explained by relative laxity of ligaments that support these structures in our body.

Classically we learn a lot about muscles and concentrate on strengthening each one of them. So far we have neglected the importance of ligaments.

Endurance, Stamina, and Strength especially of grip and grasp of an individual depends on integrity of ligaments. Strength of weight bearing joints is proportional to the ligament integrity and tensile strength in neutral position.

If we closely look at anatomy of each joint, we can see that every joint is tightly guarded by ligaments without gap. Ligaments can be compared to ropes that keep each bone in its place in forming a stable joint. It is critical in maintaining the weight line without deviation in erect position. Laxity of ligaments can alter the gravity line and a small change can produce enormous torque and force on joints and muscles and leads to pain, muscle spasm and eventually degeneration. For eg: Obese individuals with LL (Ligament Laxity) develop genu varum shifting weight line medially leading to wearing out of medial cartilage and eventually severe medial compartment OA.

Human body is a perfect example of balanced “Tensigrity” or Tensional integrity structure. In a tensigrity structure, the rods are held in tension by a system of cables. Integrity is based on a synergy between balanced tension and compression components. In human body, bones are equivalent to rods and are held in tension and balanced perfectly by a system of ligaments and muscles.

Many people with LL are artistically talented. They are good singers, painters, dancers and actors. In sports, they are good gymnasts and spinners. One cannot perform these without flexibility that is gifted to them. Unfortunately, many performers suffer from aches and pains.

## SUMMARY OF CITATIONS

- **13 to 20% of all adolescents have hypermobility.**

- **40% of patients diagnosed to have soft tissue rheumatism where all investigations are negative had hypermobility / LL**
- **81% of Fibromyalgia patients had lax ligaments.**
- **40% of hyperlax individuals had Fibromyalgia.**

## HOW TO IDENTIFY LIGAMENT LAXITY

Carter and Wilkinson proposed a criteria which was modified by Prof.PeterBeighton. It is very simple and easily elicitable in the OPD. The author just test it by bending the thumb parallel with forearm.(Item 4 of Beighton's chart) Normally it is about 90 to 100 degrees. If you can bend it to 145 - +, Parallel - ++ (180), If thumb can easily touch the radius- +++ and if the thumb overrides the radius- ++++

Below is the ***Beighton's chart***

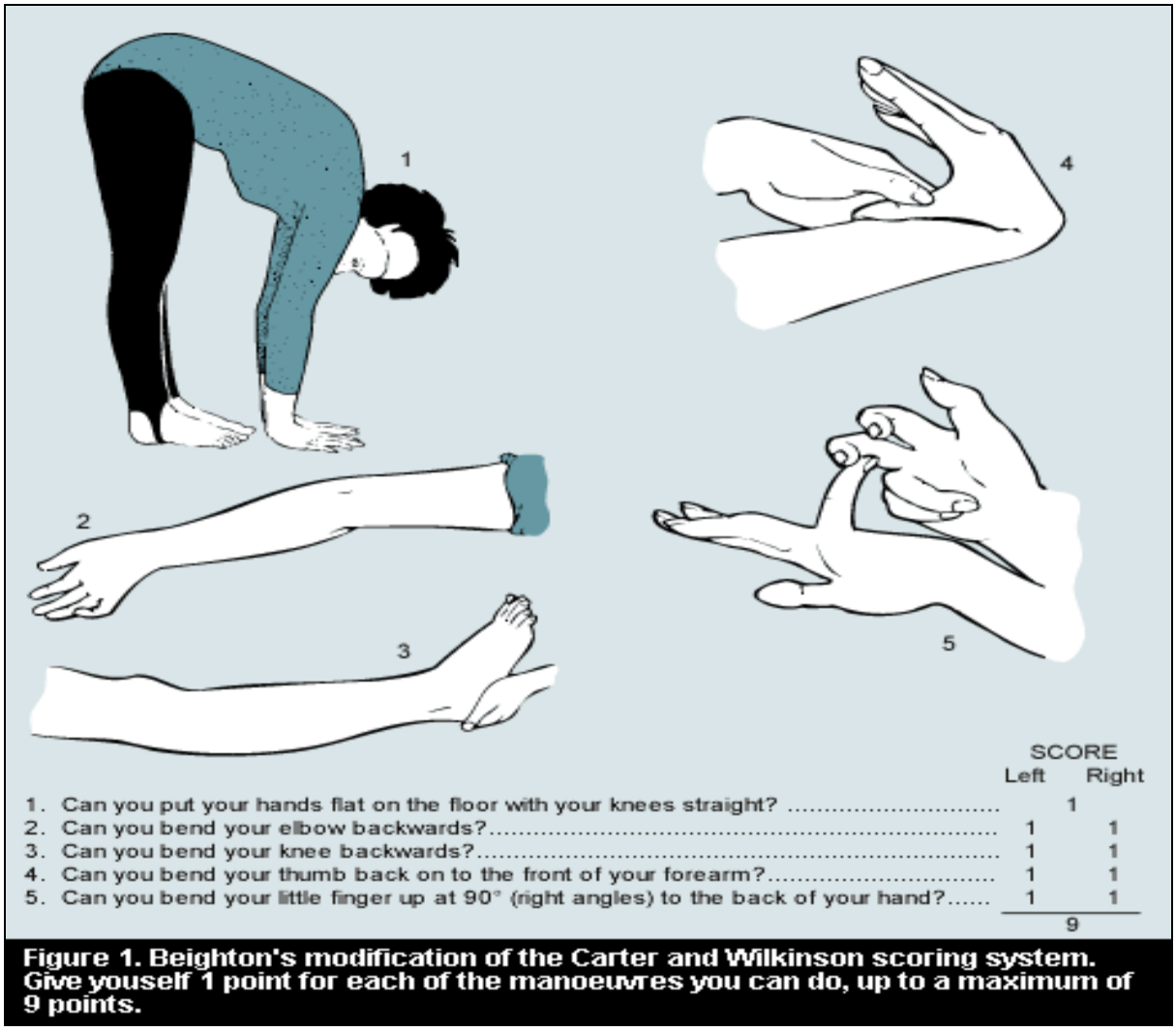


**Figure 1. Beighton's modification of the Carter and Wilkinson scoring system. Give youself 1 point for each of the manoeuvres you can do, up to a maximum of 9 points.**

An individual with score more than 4 is considered to have LL.

Also examine these individuals for Flat feet, Genu varum / valgam, Cubitusvalgas / varus, Prognathism (protrusion and mal-alignment of lower jaw), Tweet's syndrome, varicose veins and Mitral Valve Prolapse.

Many may have features of Fibromyalgia with poor sleep, head ache, IBS, and wide spread body pain.

Women after childbirth often get pain both sacro-iliac joints as hormone "Relaxin" further laxes these ligaments.

In patients with Neck and Back pain, palpation of ligament attachments especially to superior and inferior nuchal lines, spine of scapula, sacro-iliac joints and lumbo-sacral junction are often very tender.

The vertebrae and discs are tightly packed with ant. Longitudinal, post.Longitudinal, inter-spinous and facetal ligaments. LL leads to increased pressure on discs leading to bulges, dehydration and protrusion. Pressure on vertebrae leads to bone degeneration (spondylotic changes) and facet arthropathy. This explains why some individuals have multiple disc bulges in cervical and lumbar areas.

## MANAGEMENT OF PATIENTS WITH LIGAMENT LAXITY

Hyper laxity of ligaments is not a disease. Finding out it, explaining and re-assurance can relieve agony in many individuals. Keeping fit is the key to success. Unfortunately they are poor exercisers and motivation is important. Relieve the pain before asking them to walk. Aerobics are preferred. Since they are more flexible than normal, most of them do better yogic postures than their masters and Yoga seldom help them. High velocity games like Tennis, running, jogging, climbing stairs etc are not advisable.

Normal walking for 15 to 30 minutes is the best tolerated one in author's experience.

Heat and electro modalities are helpful.

Use of Lumbo-Sacral corset is very helpful in most of them especially in Post-delivery patients as it supports the Sacro-Iliac ligaments.

Use of collar is to be discouraged and teach static neck exercise without fail.

NSAIDS may be given SOS. Avoid long term use of Tramadol as many become addicted and they are poor exercisers.

Duloxitin and Pregabalin is useful in individuals with Fibromyalgia and LL

## Diet

Interestingly many of them do better with a high protein, low carb and no sugar diet.

## PROLOTHERAPY

Since ligaments cannot be strengthened by exercise, one way of proliferating ligament can be achieved by injecting a proliferant like Dextrose to ligament attachments. Dextrose Prolotherapy is a very safe, inexpensive procedure that can be done in OPD. It is a viable and safe alternative to Steroid injections.

## CONCLUSION

Identifying Ligament Laxity in patients with pain syndromes is valuable in Physiatric practice.

## RESEARCH WORK

Research supports the role of ligaments in causing pain syndromes. Several citations are published in leading journals. Some of them are

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