**Generalised Hypermobility pathway ELHT 2023**

**Assessment and referral of the patient with suspected hypermobility/ hypermobility spectrum disorder**

**A note for referrers**

* **The IMPReS (including MSK, Pain and Rheumatology departments) do not offer a diagnostic service for Ehler-danlos Syndrome or hypermobility spectrum disorders (HSD).**
* **Symptomatic patients with hypermobility spectrum disorder (HSD) or hypermobile Ehlers Danlos syndrome (hEDS) can generally be diagnosed and often managed in primary care.** They are **not** at risk of serious medical complications from their condition. These patients do not require a referral to a rheumatologist as HDCTs are neither inflammatory nor autoimmune conditions. They do not require referral to a geneticist as there is no genetic test for HSD or hEDS.
* **If Classical EDS (cEDS) or Vascular EDS (vEDS) is suspected, please refer to directly to genetics or to dermatology/cardiology if there is diagnostic uncertainty after initial primary care workup.**
* Rare and serious subtypes of EDS may require referral to a geneticist and often a non-rheumatology specialist to investigate and manage the non-joint related complications from their condition.

**Suggested Primary care workup.**

* Assess for joint hypermobility using a validated scoring system for example the [Beighton’s score.](https://www.ehlers-danlos.com/assessing-joint-hypermobility/)
* Examine the skin for scarring, haemosiderin deposits, abnormal elasticity, abnormal translucency.
* Examine the cardiovascular system. Specifically ask about a family history of early cardiovascular related death.
* Assess the patient for features of Marfans syndrome against the Ghent criteria.

**Referral pathways**

* In symptomatic generalised hypermobility please refer to physiotherapy for advice and self-management (if the patient is happy to engage)
* For patients presenting with fibromyalgia type general widespread pain along with hypermobility, please direct to appropriate resources for FM e.g. Versus Arthritis.
* When referring to the physiotherapy department, you will be asked to confirm a Ghent score < 7, no concerning skin features suggestive of cEDS or vEDS, and no concerning cardiovascular findings on clinical examination.
* If the patient is struggling to manage their symptoms despite physiotherapy and self-management, please consider a referral to pain clinic.
* If the Ghent score is over 7 refer to genetics for suspected Marfans syndrome.
* If the dermatology assessment is consistent with cEDS or vEDS refer to genetics or refer to dermatology if the diagnosis is in doubt.
* If the cardiovascular assessment is abnormal refer to cardiology or if vEDS is suspected, refer to genetics.

**Hypermobility spectrum disorders (HSD) and hereditary disorders of connective tissue (HDCT)**

Hereditary disorders of connective tissue (HDCT) are caused by abnormalities in the structure or synthesis of extracellular matrix molecules for example collagen, elastin and muco-polysaccharides.

Symptomatic patients with hypermobility spectrum disorder (HSD) or hypermobile Ehlers Danlos syndrome (hEDS) are not at risk of serious medical complications from their condition. They can therefore generally be diagnosed and often managed in primary care.

These patients do not require a referral to a rheumatologist as HDCTs are not inflammatory or autoimmune conditions (Islam et al 2020). Neither do they require referral to a geneticist as there is no genetic test for HSD or hEDS.

There is no cure for hypermobility but support and advice may be helpful. Support may be via written or audio information, physiotherapy or pain management services.

Rare and serious subtypes of EDS may require referral to a geneticist and often a non-rheumatology specialist to investigate and manage the non-joint related complications from their condition (Islam et al 2021)

**Please note HDCTs are distinct from connective tissue diseases (CTDs) such as SLE, Sjogrens or systemic sclerosis. CTDs are autoimmune and inflammatory disorders which should be referred to rheumatology.**

**Diagnosing hypermobility**

There are several scoring systems in use all with advantages and disadvantages

Although not originally intended for clinical use, the Beighton score is the most commonly used as it is quick to perform and has been validated for generalised hypermobility. It is important that the relevant joints are assessed correctly so as not to overestimate the score.

The following video on the Beighton score is helpful.

<https://www.physio-pedia.com/Beighton_score>

Generalised hypermobility is typically diagnosed if the score is 4 or more out of 9 in adults. However

if limits are defined such that 95% of normal people in a population lie within a normal range i.e. are normally mobile, it has been suggested that adult females of European ancestry below 40 years should have a Beighton score of 5 or greater to be defined as hypermobile. This is the score used at ELHT in this cohort.

If using the Beighton’s score, the clinician should also examine those joints which the patient flags as problematic if not included in the score. For example the shoulder is one of the commonest joints to sublux and dislocate and many patients report hand joint problems. If necessary an alternative scoring system for example the Hospital Del Mar criteria which assesses a greater number of joints (Domingos 2019)

If the patient does not fulfil criteria for generalized hypermobility then consider alternative causes for their symptoms.

**Identifying those patients who may need to see a geneticist or a secondary care specialist.**

**Marfans syndrome**

Marfans syndrome is associated with a mutation of the fibrillin 1 gene on chromosome 15. Patients with MFS may present with hypermobility often in association with morphological abnormalities.

Any patient with a Revised Ghent Nosology score over 7 should be referred to genetics for testing

https://orthotoolkit.com/systemic-score/

<https://marfan.org/dx/score/>

**Vascular EDS**

Vascular EDS is a rare but serious form of EDS. Complications of the condition include

* organ rupture, for example the large bowel or pregnant uterus.
* Fragile blood vessels leading to dissections and ruptures.

Other features include:

* Thin translucent skin such that small blood vessels are highly visible especially on the upper chest and legs.
* Hypermobility, predominantly in small joints
* Premature aging of the skin on hands and feet.
* Abnormal facies, including a thin nose and lips, large eyes, small earlobes and fine sparse hair.
* talipes.
* Pneumothorax.
* Early onset severe varicose veins.

<https://www.ehlers-danlos.org/information/vascular-ehlers-danlos-syndrome/>

If a patient has a history of otherwise unexplained organ rupture or significant vessel fragility, it is likely that the patient will be referred directly to genetics from the relevant speciality. For assessment of skin changes which may be indicative of vascular EDS, seek the opinion of a dermatologist.

**Classic type EDS**

Skin changes are very helpful in diagnosing EDS. In fact Edvard Ehlers was a Danish dermatologist and Henri-Alexandre Danlos was a French physician with an interest in skin disorders (Stembridge et al 2022).

In Classic type EDS there is abnormal elasticity and extreme fragility of the skin.

Skin hyperextensibility can be assessed over the elbows and knees, and extensibility of 3 cm or more at these sites is suggestive of cEDS (Stambridge 2022). At the volar forearm with an extended wrist, the skin may stretch over 1.5cm in cEDS. The neck is less reliable in older individuals due to age related non-elastic stretching of the skin.

Other skin changes of cEDS include

* atrophic scarring -the scar is sunken, and often wider than the original wound,
* significant skin lacerations from minor trauma
* easy bruising
* hemosiderin deposits in old scars.

<https://www.youtube.com/watch?v=5ZJzXrgN0gE> Dr Nigel Burrows

Milder skin changes may be seen in HSD and hEDS for example soft, mildly hyperextensible skin, unexplained striae and mild atrophic scarring. Significant papyraceous scars and haemosiderin deposits is not seen.

If the diagnosis is in doubt then refer to dermatology.

**Cardiovascular assessment**

A cardiovascular history and examination is appropriate in patients with hypermobility. A family history is important including details of sudden deaths.

Patients with Marfans syndrome, angiodysplasia and vascular EDS may have abnormal examination findings.

For patients with general HSD or hEDS several studies have suggested there is no increased risk of cardiac abnormalities. An echo is not therefore required in the presence of a normal cardiovascular clinical examination (Paige et al 2020).

It has been suggested there may be an association between hypermobility and postural orthostatic tachycardia syndrome. A definite link has not to date been established however. For symptomatic patients suspected of having POTS, a screening assessment can be carried out in primary care and a referral arranged to cardiology if positive. It is important to ensure that the tachycardia does not occur at the time of instruction to stand rather than actual standing – the former may indicate an acquired stress response to a prior vaso-vagal episode (Norcliffe-Kaufmann et at 2022).

https://www.potsuk.org/about-pots/diagnosis

**Mast Cell activation syndrome (MCAS)**

Studes have shown there may be a link between HSD, POTS and MCAS. However an evidence based common pathological or physiological association between these conditions has not yet been established with certainty (Kohn and Chang 2020).

Should there be concern about possible MCAS symptoms, the advice of an immunologist, not a rhematologist should be sought.

**HSD/ h(EDS)/ Fibromyalgia (FM)**

The diagnostic criteria for hEDS are detailed here

<https://www.ehlers-danlos.com/what-is-eds/hypermobile-ehlers-danlos-syndrome-heds/#1677083905021-223e2d3a-6c22>

If a medically confirmed positive family history is known, many patients with generalised hypermobility, chronic widespread pain and mild skin changes will fulfil the above hEDS criteria.

Despite widespread symptoms patients may experience, they can still be reassured that serious cardiovascular sequelae are not associated with HSD or hEDS.

It is widely recognised that many patients presenting with hypermobility, have symptoms which are similar to those presenting with a primary pain disorder e.g. fibromyalgia

It is not clear in an individual patient whether they have coincidental fibromyalgia (FM) and generalised hypermobility (both conditions are relatively common so would be expected to co-exist in some) or if the hypermobility is a trigger for widespread pain, particularly as the causes of fibromyalgia itself are not known, but increasingly this looks like a central nervous system functional issue (ref)

Unfortunately there is still considerable societal and even medical stigma attached to disorders without demonstrable, measurable pathology. It is therefore understandable in this context that many patients with chronic widespread pain and generalised hypermobility find the latter a more acceptable diagnostic label.

There are problems with this however, as it could prevent patients accessing input which may otherwise help, for example self-management strategies for FM are designed to take advantage of brain plasticity which may be able to ‘train the brain’ and thereby reduce the pain burden.

It would seem sensible therefore that where patients have a fibromyalgia presentation associated with generalised hypermobility that both diagnoses are applied. This would help patients access most help.

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