

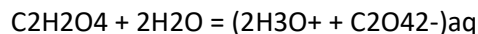
Oxalates and hEDS: Dysbiosis, Histamines, Crystals, and Acidity Create A Perfect Storm

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Gastrointestinal pain and dysfunction are 3 times more likely in those with Hypermobile Ehlers-Danlos Syndrome. Hyperextensible tissue exists well beyond the musculoskeletal system. As the digestive tract covers 5 times the square footage of the muscles and associated tissues, the gut can lose the selectivity of its tight junctions. With such a leaky intestinal tract, oxalates can bypass active transport across the intestinal barrier. Along with the hepatic stress that is caused by dysbiosis, the liver can also produce oxalates, furthering increasing oxalate load. Pathogens, particularly yeast, are contributors to both leaky gut and elevated oxalates.

Oxalates not only cause kidney stones, but, being crystalline, can also precipitate in soft tissues. As a water-soluble compound, oxalates can then dissolve out of the soft tissues, elevating serum levels.

Oxalates in serum readily dissociate into oxalic acid, donating two hydrogen cations in the process:



Oxalates are also known to cause mast cell activation.

Case Study History

The patient had a VAS of 5/10 for pain the upper extremities, and 4/10 in the calves and ankles, frequent, symmetrical prior to starting oxalate treatment. In the patient's organic acids test, only 1 other biomarker was abnormal, with vitamin c being low.

Case Study's Initial Oxalate Lab Results

Metabolic Markers in Urine	Reference Range (mmol/mol creatinine)	Patient Value	Reference Population - Males Age 13 and Over
Oxalate Metabolites			
19 Glyceric	0.21 - 4.9	H 5.5	
20 Glycolic	18 - 81	H 127	
21 Oxalic	8.9 - 67	H 146	
Glycolytic Cycle Metabolites			

This is relatively acidic. Low pH environments are pro-inflammatory. With liver and immune stress often resulting in a pro-inflammatory state, oxalate excess can further this cycle. This inflammation can result in collagen damage.

Mast Cell Activation

This patient has had marked decrease in gastrointestinal issues since starting diamine oxidase (histaminase) and targeted probiotic supplementation.

CONCLUSION.

Given the role of excess histamine levels, gastrointestinal disturbances, and inflammation, oxalate evaluation should be considered in Hypermobile Ehlers-Danlos Syndrome.

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Declarations of Interest

None