

# Low Oxalate Treatment

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In 1986, as a biomedical research consultant, I began working in the laboratory with a woman experiencing vulvar pain. We discovered that she was excreting higher than normal concentrations of oxalate in her urine at certain times of the day.

It had long been known to scientists that oxalate is an irritant that can cause histamine release and burning in tissues. However, exposing healthy skin and nerves to oxalate does not result in pain.

## Pain Patterns

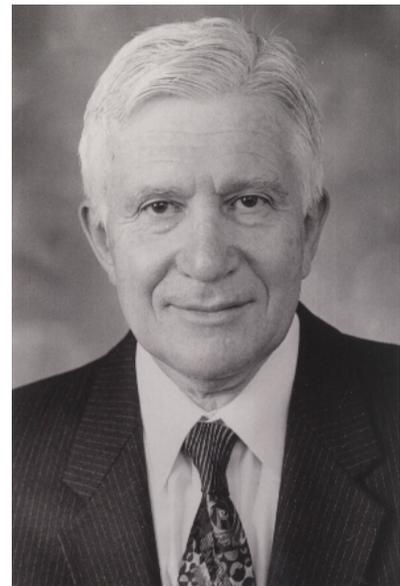
I started working with other women, testing their urine each time they urinated naturally during a 24-hour period, often for several consecutive days, weeks, or months. Laboratory analyses revealed that they showed predictable surges, or peaks, of oxalate excretion at similar times each day; and that these peaks often were related to the intensity of reported pain. Each woman's pattern remained consistent, but the pattern varied from person to person (Figure 2).

This phenomenon of chronicity, or timing, has held true for the nearly 2,000 women tested throughout our decade-long research program, now called The Pain Project. All were experiencing vulvar pain at the time of testing, often along with urinary urgency and frequency, rectal itching or burning, irritable bowel, muscle and joint pain, and/or burning mouth and tongue symptoms.

Approximately 25% of the Project participants have reported similar symptoms in relatives. This degree of familial incidence points to a possible genetic defect; and several mothers, daughters, twin sisters, and other relatives have also revealed abnormal urinary oxalate profiles when tested.

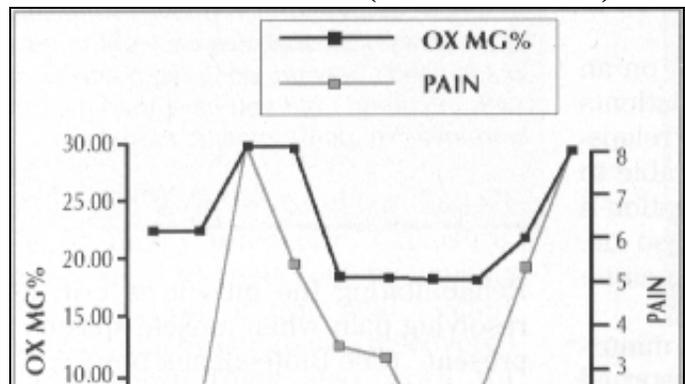
## Oxalates in Diet

Oxalate is a chemical substance commonly found in foods of plant origin (e.g., spinach, beets, wheat bran, peanuts, chocolate, and tea). For several decades now, a diet eliminating foods and beverages of high oxalate content has been used to treat kidney stones and other renal disorders in which hyperoxaluria (excessive amounts of oxalate in the urine) is a factor.

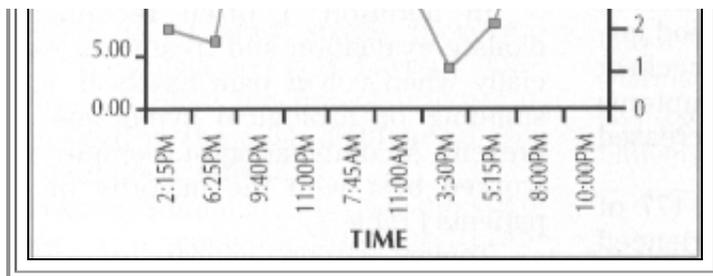


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### Urinary Oxalate Concentration and Subjective Pain Assessment (*Patient record*)



Thus, it seemed logical for women with periodic hyperoxaluria and vulvodynia to try a low oxalate diet as a first course of action; and a few women have experienced pain reduction on the diet alone. For optimal recovery, however, it is usually necessary to combine the diet with additional treatment.



The metabolic abnormality that causes pain seems to be internal. The amount of oxalate that appears in the urine is determined not only by dietary intake of oxalate, but also by degradation of microbes in the intestines, intestinal permeability, endogenous (internal) synthesis within the body by the liver and other tissues, and the kidneys' handling of oxalate. Thus, consuming foods and beverages high in oxalate content merely adds fuel to the flame.

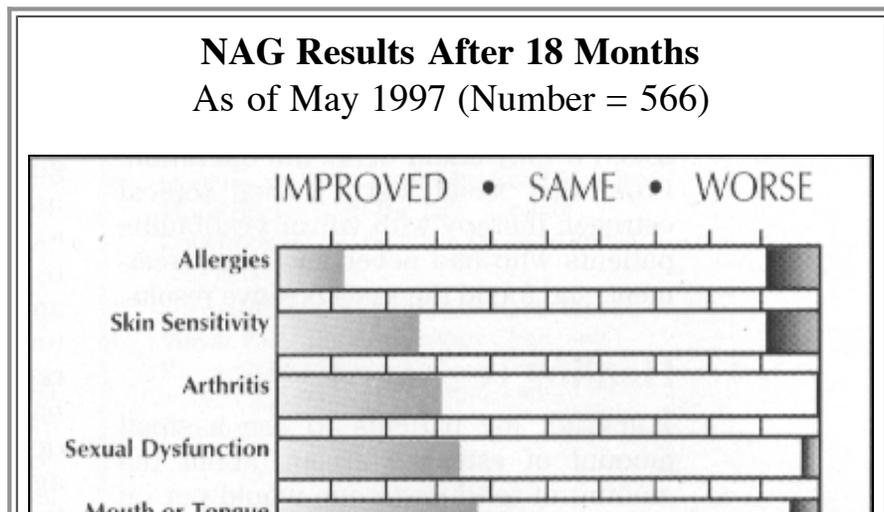
## Citrate and Ox-Absorb

Calcium citrate, a compound known to treat hyperoxaluria, has been tried by most women in the research project. Citrate has a chemical structure similar to oxalate, and competes with it in the tissues. Over time, usually three months to a year or so, citrate and diet together have achieved a gradual reduction in pain for 70% of the women who have reported regularly to me. In addition to a low oxalate diet and calcium citrate, Ox-Absorb, a substance that absorbs oxalate in the intestine, has effected further symptom reduction in many women.

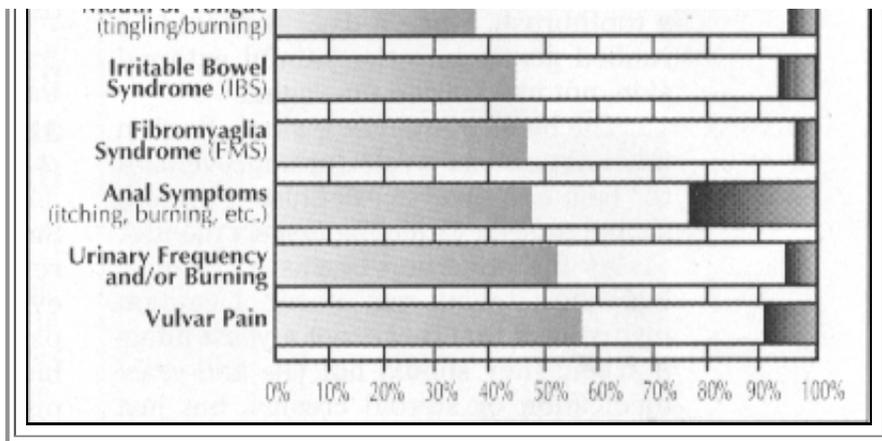
During this large, extended research trial, we found that when women take citrate in advance of the daily oxalate surges, about 66% experience greater pain reduction than when they take it on an arbitrary schedule. We also found that variations in dosage may make the pain increase or decrease at various stages of treatment. Hence, the need for individual assessment. Unfortunately, there is no "one dose fits all" in the management of vulvar pain.

## N-Acetyl Glucosamine (NAG) Treatment

In 1995, I discovered that N-Acetyl Glucosamine (NAG), an amino sugar, could effect further reduction in both vulvar pain and symptoms of fibromyalgia. Subsequently, we embarked on a line of research studying vulvar pain as a connective tissue disorder.



NAG and glucuronic acid make up hyaluronic acid, a skin tissue component that is millions of units long. Random coils of hyaluronic acid combine with 1,000 times their weight in water and act as a gel to keep tissue hydrated. When hyaluronic acid is intact and functioning normally, it protects the skin and nerves.



Conversely, when hyaluronic acid breaks down, the whole tissue collapses, and thins, making the nerves more accessible to pain-producing molecules. The pieces of hyaluronic acid that result from this degradation attract blood vessels to the area, and an inflammatory state results.

Thus, my provisional theory was that hyaluronic acid degradation could be decreased — and pain reduced — by using NAG, reducing exposure to oxalate, and adding citrate and other measures. By May 1997, 58% of the 556 project participants who took NAG under appropriate conditions for a least four months, reported significant further improvement in vulvar pain and other related disorders (Figure 3).

## The Pain Project

Nearly 1,500 women (along with many of their personal physicians) have actively participated in the project by regularly reporting on their status. None had, during the preceding pain-filled years, experienced lasting relief from other treatments, including (multiple) surgeries; antibiotic, antidepressant, antifungal, anti-inflammatory drugs; or most topical preparations.

Approximately 70% (over 1,000) of the participants have found some combination of treatments through The Pain Project to significantly reduce symptoms and restore quality of life. In cooperation with The Vulvar Pain Foundation, we continue research on new and increasingly effective treatments for the benefit of those who still experience periodic flare-ups and those unresponsive to the present treatments.

Our research project has shown that vulvodynia is not limited to the vulva, but involves many tissues and disorders previously assumed to be independent of one another. My goal is that this line of thought will alert other basic scientists to interpret their work in related fields for the benefit of vulvodynia sufferers.

## Testing the Treatments

Studies in which neither the patient nor the researcher know who is getting the real treatment and who is getting a placebo are called double-blind studies; and this experimental design is often used when assessing the efficacy of new therapies. It's about the only way to eliminate patient and researcher bias.

To date, no studies of treatments for vulvodynia have been double-blinded. In the case of the low oxalate diet and calcium citrate, technical problems that must first be overcome include: removing oxalate from food without changing the taste, finding previously untreated patients to participate in the research, standardizing the effective dosage and ensuring compliance by

confining patients to a metabolic ward for six to nine months.

[Return to Previous Page](#)