



## Mist Supplementation of the Tear Film for Dry Eye

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**Purpose.**

We proposed a pilot study to evaluate the patients response to a pure water mist (Nature's Tears ®) as a method of treating dry eye symptoms.

**Design.**

Thirty-nine patients with dry eye symptoms or discomfort were asked to compare for two weeks the use and convenience of a pure water mist with other tear products.

**Results.**

Seventy-two percent of patients found the mist to be more effective and eighty-four percent found it to be more convenient than other treatments.

**Conclusions.**

Pure water with a very low solute content (Natures's Tears ®) was reported by patients to be more effective and more convenient for the relief of symptoms of dry eye compared to conventional therapy when applied in the form of a mist. The use of a mist represents a new, safe, and convenient method of treating dry eye symptoms.

## **Introduction**

The treatment of dry eye has primarily depended on various artificial tear preparations. All of these products have additives and all are applied in droplet form. [1-4] We have developed and tested a convenient water mist that delivers a titratable amount of pure water to the ocular surface. This results in a pleasurable relief of dry eye symptoms and is easily administered. We report the results of a pilot study using this product for relief of dry eye symptoms.

## **Methods**

Thirty-nine adult patients were included in this study. All patients were solicited from the ophthalmology practice of Dr. Paden in Medford, Oregon. Eighty four percent had dry eye by clinical examination and history. Sixteen percent were diagnosed with ocular surface allergy or irritation. Patients were instructed in the use of the *Nature's Tears* mist and told to use the mist freely for two weeks. They were allowed to use artificial tears as needed. After two weeks each subject was questioned concerning their experience with the mist. A single study coordinator performed all telephone interviews.

## **Results**

Seventy two percent found *Nature's Tears* more effective than the other dry eye products, twenty four percent said it was the same and one patient said it was less effective. Eighty three percent found it to be more convenient, eight percent found it less convenient; and five percent found it about equally convenient compared with other products. Of the eighty nine percent of subjects who were already using artificial tears patients, seventy two percent preferred *Nature's Tears*. Eighty two percent of subjects said they would purchase *Nature's Tears* if it were available. The most enthusiastic responses were from those patients who had the most severe symptoms.

## **Discussion**

Applying a titratable mist to the eye represents a new method of decreasing tear osmolarity and increasing tear volume. The product has a considerable safety advantage since it contains only sterile water. It is extremely easy to administer and avoids the backward head tilt needed with artificial tears. A small dose can be sprayed directly into the eyes, wetting the skin little, and achieving only the desired shift in tear

osmolarity. Since the canister delivers approximately two micro-liters per square centimeter per second at 14 inches, a few seconds is sufficient to double the tear volume. This product does not contain any additives, often used to increase retention time, and would not be expected to remain longer than normal tear on the ocular surface. [5] It can, however, be repeated as frequently as necessary. Most patients do not require continuous dosing. Nature's Tears is a natural product that is simply filtered to maintain consistency. It is also naturally sterile. Its very low solute content and slightly acidic pH is responsible for its biocompatibility with the ocular surface and skin.

In summary, we have developed a new method of restoring moisture to the ocular surface that is completely safe, convenient and titratable. This pilot study demonstrates its acceptability in patients with dry eye symptoms.

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