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Dry Eye – Patient Information

Introduction

A Dry Eye occurs when there are insufficient tears to keep the front of the eye moist. People usually complain of grittiness or irritation which often worsens towards the end of the day. Dry Eye is a common condition, affecting 20% of the population, particularly as one gets older & following the menopause. The symptoms can be exacerbated by antihistamines, decongestants, some anti-depressants, and eye surgery such as LASIK. Patients with other conditions such as Rheumatoid Arthritis may get Dry Eyes.

The normal tear film

The normal tear film has three distinct layers: A fat layer – produced by glands in the lid (Meibomian glands)- which prevents evaporation; An fluid / water layer which also contains proteins which help to protect the eye from infection and a thin layer of mucin, which helps the tears to spread evenly over the cornea. Disruption to any of these layers can cause the symptom of dry eye. Tear stability can also be reduced due to a lack of water, fat or mucus and this can lead to exposure and damage to the underlying corneal cells.

Symptoms of dry eye

As mentioned earlier a Dry Eye presents with ocular irritation, burning & gritty pain. These are generally made worse by driving, reading / computers and central heating. They are typically worse in the evening.

Treatment of Mild Dry Eye

In order to relieve the symptoms of Dry Eye it is best to keep the eyes moist by instilling artificial tears. The amount of tears that are retained in the eye depends upon varying factors, such as the ambient temperature, the humidity and wind speed. As this may vary, from one environment to another, symptoms can vary significantly day-to-day and even within a day and between moving from one place to another.

Eye Drops

Due to the rapid progress in this area, some eye drops may not yet be available. Artificial tears act by increasing the volume of the tears, and reducing the concentration of the tears them selves, they only work when in contact with the eye. Most of them have special gels added to the fluid to increase the contact time. The thicker the solution the longer the benefit, however blurring of vision can occur. A long acting ointment at night can also provide some relief particularly if there is poor lid closure.

Preservative versus Un-preserved drops:

In general un-preserved drops are to be recommended, as the eye can become sensitive to preservatives.

Which Eye drop should I use?

In mild dry eye a simple combination of environmental change with occasional, short acting drops may be all that is necessary. If these do not work then a referral to the Southampton Eye Unit may be necessary control the symptoms. There they may use a combination of drops & lubricating eye ointment. In severe dry eye, careful assessment and moderation of every risk factor as well as meticulous treatment of eye symptoms and signs is vital to stabilize corneal health and prevent visual loss.

Hypromellose

Hypromellose is a basic eye drop it increases the tear volume for a few minutes, however, its length of retention and action are relatively short, and is therefore only used in patients with very mild symptoms. It is widely used in the preserved form, however is better without the preservative.

Drops

1. Hypromellose (Non-proprietary) Eye drops, Hypromellose 0.3%, preserved with BAK: **Price 10 mls = £2.04-**.

2. Minims® Preservative free Artificial Tears (Chauvin) Eye drops, hydroxymethylcellulose 0.44%, sodium chloride 0.35%. **Price 20 × 0.5 mls = £5.75**
3. Moorfields preservative free Hypromellose 0.3 % **Price 30 x 0.4ml £5.75.**

Isopto plain 0.5% Hypromellose: Price 10ml 85p

Isopto alkaline Hypromellose: 1% 10ml 99p

This is an standard eye drop preserved with BAC, with a minimally alkali buffered solution

Liquifilm Allergan: Cost 30 × 0.4 mls pres free = £5.35 or 15 mls = £1.93

This is a well tolerated drop using **polyvinyl alcohol** 1.4% it gives relatively short acting relief with minimal blurring of vision. Preservative is Benzalkonium chloride but is also available preservative free.

TheraTears **24 x 0.6cc £9.99**

Are hypotonic, so their use helps rehydrate dry eyes, the biogel used is carboxymethylcellulose, is good in combination with other drops such as Systane or Celluvisc. They can also be used in patients with contact lenses. For more information http://www.theratears.com/

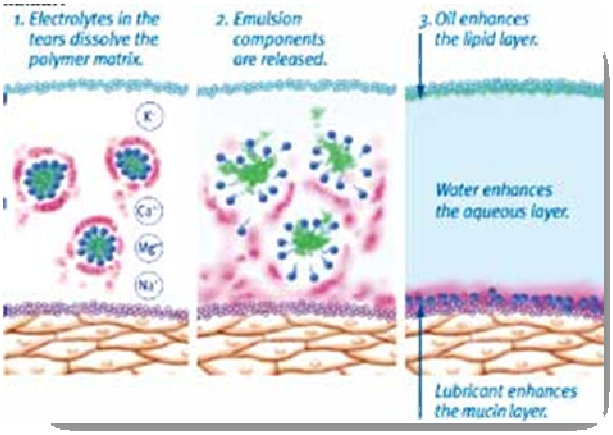
Celluvisc - Allergan **30 × 0.4 mls = £5.75.**

Celluvisc is a viscous product that helps coat the anterior surface of the cornea. The

Biogel used is Carboxymethylcellulose (1% or 0.5%); it also contains sodium chloride, sodium lactate, potassium chloride, and calcium chloride. It is available in both preserved and unpreserved preparations. If used with contact lenses then the 0.5% is recommended since the 1% strength tends to leave a residue on the contact lens and blurs vision.

Refresh Endura (non-BNF) £13.00 20x4ml
http://www.allergan.com/site/products/practitioners/home.asp?id=refresh_endura&largeText=

This drop, is good in patients with Meibomian gland deficiency as it contains both, lipid (castor oil derivative), aqueous and glycerine and polysorbate polymer. The effective ingredients are released by contact with the tears. It has little blurring effect and a good duration of action.



For more information http://www.revoptom.com/index.asp?page=2_888.htm

Systane (non-BNF) **http://www.systane.com/**

Systane contains a combination of Polyethylene Glycol 400, with Propylene Glycol and HP-Guar, which forms a protective gel and also adjust to each user's individual tear pH. It comes preserved with Polyquad more benign than BAK, has RCT data backing claims of effectiveness.

For more information
http://www.crstoday.com/PDF%20Articles/0804/crst0804_thera.pdf