

**NHS**

*Blood and Transplant*

**crying  
out**  
for a cure



**Autologous Serum Eyedrops**

***Over four million Britons suffer from dry eyes. Conventional treatments are not always effective, but NHS Blood and Transplant (NHSBT) has pioneered a project that could literally bring tears of joy to patients' eyes.***

Dry eye cases have almost doubled over the last seven years. Changes in lifestyle and the environment, including the use of contact lenses, air conditioning, central heating and pollution levels are thought to be responsible.

Tears, often regarded as a sign of weakness, are actually a vital defence mechanism. They lubricate the eye surface and contain essential growth factors and vitamins which have antibacterial and healing properties. Unwittingly, we all cry daily to keep our eyes healthy. Dry eye sufferers can't produce tears and experience painful symptoms such as itching, burning or stinging, and poor vision - including problems focusing and in severe cases, blindness.

## **Treatment**

Until recently, treatment for severe dry eye conditions was limited. The most common therapies were 'artificial tears' or eyedrops, available over the counter or on prescription from GPs. These solutions are usually made from saline, lubricant and preservatives and don't suit all patients, some of whom develop sensitivity or allergies to the preservatives they contain.

Over the last six years NHSBT have developed a solution which could provide relief to sufferers once and for all. Autologous Serum Eyedrops are made from the serum portion of a patient's own blood. Because this is additive and preservative free, it's unlikely to cause irritation.

The study into this novel use of autologous blood was undertaken at the Leeds centre, in conjunction with the Department of Ophthalmology at the Leeds General Infirmary. A local eye consultant contacted NHSBT having read about use of the product in other countries, particularly Japan, where the original research was performed.

Between 2000 and 2003, NHSBT compared the use of Autologous Serum Eyedrops with conventional therapy and found that most patients' symptoms significantly improved when using these eyedrops, compared with conventional methods.

## Christine's Story...

Christine Aspland was one of the first people to trial Autologous Serum Eyedrops. Christine developed severe pain and chronic dryness in her eyes after contracting a rare skin disease that strips away layers of the skin and causes blisters.

The disease quickly spread to her eyes, damaging her tear ducts and stopping her from being able to produce tears. It also damaged her sight, leaving her blind in one eye and with only partial vision in the other.

"I didn't need the eyedrops for vision, I was just in the most incredible amount of pain. Even to blink caused extreme discomfort," Christine explains.

The sensitivity of her skin and eyes prevented her from using conventional treatments for dry eyes. "I was allergic to nearly everything anyway, but because my condition was extremely rare, I became a guinea pig for most of the products on the market," she explains.

Christine had started to lose hope when Sheila MacLennan and her team approached her to trial the Autologous Serum Eyedrops. For Christine, the benefits were immediate. "I just couldn't believe it.

I noticed the difference straight away. It was 100 per cent better than before. I would thoroughly recommend this treatment to anyone who has severe dry eyes and cannot use conventional remedies," she says.

Christine is continuing to use the eyedrops. She applies between 10 – 12 drops a day. "The results are remarkable - I'm feeling so much better. This product has completely changed my quality of life, to NHSBT and Sheila MacLennan and her team, I am truly grateful."



*Autologous Serum  
Eyedrops completely changed  
Christine's quality of life*

## Demand for Autologous Serum Eyedrops could be high

NHSBT will offer an Autologous Serum Eyedrops production service to all hospital eye departments across the country, from Tissue Services' Technology Centre, within the new Liverpool centre - Speke. This is equipped with state of the art cleanrooms, necessary for sterile processing of the eyedrops. Sheila MacLennan, an NHSBT consultant responsible for the development and introduction of Autologous Serum Eyedrops, says: "There's a considerable amount of interest generated in this treatment amongst ophthalmologists around the UK." She continues: "A questionnaire was recently distributed to a sample of consultant ophthalmologists known to have an interest in ocular surface disease. The results suggest that there is likely to be a significant demand for this product from most areas of the country."



*Sheila MacLennan and team pioneered Autologous Serum Eyedrops at NHSBT*

## Who will benefit from this service?

Patients must meet autologous blood donation guidelines set by the British Committee for Standards in Haematology. These require a person to be in reasonably good health, free from diseases which affect the heart or brain's blood vessels, and to be free of bacterial infection. A blood sample is then taken from suitable patients, which is subject to the same rigorous testing procedures as regular blood donors.

If the blood tests are clear, blood is collected from the patient into a sterile dry pack and allowed to clot. The serum is then separated from the blood and diluted with saline. This solution gets transferred into sterile glass dropper bottles, ready to be frozen. These little bottles are issued to the patient to store in their home freezer. To minimise the risk of bacterial contamination, patients are instructed to remove one bottle from the freezer for use that day and to discard the bottle the same evening.

For further information, clinical or scientific advice on Autologous Serum Eyedrops, please contact our National Tissue Services team on **0151 552 7078**.

NHS Blood and Transplant is a Special Health Authority within the NHS.