

## Olympus Stem Cells Pty Ltd Highlight Relationship Between Goblet Cells, Neuropathic Pain and Post LASIK Dry Eye Syndrome

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Medical clinic and research facility Olympus Stem Cells Pty Ltd, based in Sydney, Australia highlight the important relationship between neural crest cells and the subsequent development of Neuropathy and neurotrophic factors which are prevalent in the corneal epithelium following Surgery.

There are many potential causes of tear dysfunction and corneal neuropathy following LASIK. Neurally mediated ocular surface changes contribute to a neuropathy. Surgical disruption of corneal adherent nerves leads to hypoaesthesiae and disrupts the ocular surface lacrimal gland functional unit resulting in tear dysfunction. The development of neuropathic pain is a result of changes in the central and peripheral mediated pain pathways following LASIK.

The cornea is endowed with the highest concentration of sensory nerve endings of any tissue of the body. The nerve endings are the terminal receptors of a Trigeminal nerve plexus mediated through the lacrimal and

frontal nerve branches which form a plexus at the conjunctival limbus and penetrate the cornea. LASIK is associated with loss of Goblet cells (similar to loss of inferior turbinates in Empty Nose Syndrome). A LASIK induced epitheliopathy damages both Goblet cell tear film production and causes a reflex sympathic dystrophy of the cornea.

A sympathetic nervous system based reflex neuropathy is not unlike a phantom limb pain, a disorder well described in the literature.

Professor Russell Vickers, the director of Clinical Stem Cells Pty Ltd and the founder of Olympus Stem Cells Pty Ltd has previously reported in the literature (see links below) of the effect of Mesenchymal derived adipose stem cells (MASC?s) and the injection of these close to neuropathic head and neck nerves. In the case of Post LASIK these are in around the lacrimal gland, specifically the lacrimal and frontal nerves.

As a practising MaxilloFacial Surgeon Professor Vickers knows the exact anatomical position of these nerves to gain maximum efficiency of the MASC?s. Whilst the goblet cells contribute tear film production it is the aberrant corneal nerves following surgery that contribute the symptoms of pain and dry eye, in many cases in the absence of a positive Schirmers test.

More details can be obtained from http://www.olympusstemcells.com.au and http://www.clinicalstemcells.com.

The Director of Olympus Stem Cells, Associate Professor Russell Vickers, is an acknowledged world authority in the use of stem cells to treat neuropathic Pain of the Head and Neck. He is pleased to offer stem cell services including consultations and treatment amongst the 5 medical centres in Sydney Australia. Professor Russell Vickers has published extensively on the use of stem cells in neuropathic facial pain, stem cell protocols and is a leader in his field. He is conducting clinical treatment of Alopecia patients with stem cells harvested from the abdomen.

Associate Professor Vickers sources the abdominal fat for adipose derived stem cells. He processes the fat and obtains stem cell concentrations that are extremely generous in numbers and quality. As a consultant surgeon he then delivers the stem cells to the anatomical area requiring the specific treatment, in this case the area of the lacrimal gland. The stem cells are injected intra glandular.

Associate Professor Vickers utilises a vast array of medical scientific equipment in his quest to offer the very best of stem cell treatment. For validation he uses the Muse Cell Analyser and has achieved up to 100% of stem cell viability. Additionally Olympus Stem Cells Pty Ltd has the availability of its own Mass Spectrometer and cell counting technology. In many conditions Stem Cell Therapy is a highly effective means of alleviating pain and discomfort for people suffering a variety of conditions ranging from MS to neuropathic facial pain.

Professor Vickers has published in peer reviewed journals the efficacy of his treatment.

Olympus Stem Cells Pty Ltd has a strong focus on research and development and is working hard to constantly further the advancement of stem cell techniques around the world. Their research has been published internationally in peer-reviewed medical and science journals, plus their laboratory boasts some of the best state-of-the-art biotechnology equipment in Australia.

Olympus Stem Cells Pty Ltd is one of the few companies undertaking ground breaking stem cell treatment in Australia and the Asia-Pacific region. More information on the Olympus clinics and the work that they do can be obtained at http://www.olympushealthgroup.com.au.

Associate Professor Vickers' recent research publications pertaining to genetics, stem cells, hair loss and facial pain are extensive. These publications include Human Brain Mapping, the Australian Endodontic Journal, Hair Therapy and Transplantation, The Journal of Neuroscience, Diagnosing Dental and Orofacial Pain, the Journal of the Australian Society of Cosmetic Chemists, Medicine Today (The Journal of the Royal Australian College of General Practitioners), the Open Journal of Dentistry and Oral Medicine, and the Journal of Pain Research. More information on Associate Professor Vickers' work can be obtained at http://www.clinicalstemcells.com.

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## **Olympus Stem Cells Pty Ltd**

Olympus Stem Cells Pty Ltd are a clinical research and development biotech company engaged in stem cell therapy in Sydney, Australia.

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