

function of the human eyelid. The eyelid also includes eyelashes (88). The assembly (30) also includes, as best shown in FIG. 20, the lacrimal gland (90) positioned underneath the temporal aspect of the eyelid (86). As shown in FIGS. 10a-10c, various replaceable eyelids demonstrate different pathological conditions (87), such as chalazion (87a), sty (87b) and dermatochalasis (87c).

As shown in FIG. 10d, the eyelid (86) may be partially closed to illustrate the condition of ptosis. Ptosis is a condition involving drooping of the eyelid. The present assembly (30) permits demonstration of the condition by permitting selective positioning of the eyelid (86) part way over the cornea (36) of the eye by a pivot means (92) comprising a gear pin (94) on each side of the eyelid for insertion into the body (34) and into a biasing spring (96) (bent metal strip, or spring biased retainer ball) for permitting and for maintaining the position of the eyelid relative to the eyeball (relative to the cornea), and the top of the eyelid preferably has a curved retainer wire (98) which is snap fitted into a retainer clip (snap) (100) affixed to the body (34) above the cornea (36) for maintaining the top of the eyelid in the desired position. Various types of ptosis exist including congenital and acquired.

The moveability of the eyelid and the realistic nature of this model allows for exhibiting entropion, which refers to the eyelid turning inward and causing the eyelashes to engage the eye and thereby irritate the eye. Also demonstrable is ectropion, which involves the lower lid sagging and turning outward. This condition is shown by the lower lid of the eyelid being made of a flexible material. The condition of lagophthalmus, which involves the upper lid and the lower lid not coming together to form a complete closure, thereby causing undesired drying of the eye and potential eye infection is also shown. Trichiasis, which involves the growth of the eye lashes in an inward direction resulting in irritation of the cornea, and may optionally be illustrated by the model having removable individual eye lashes which may be inserted into receiving holes either in the front side of the eyelid or the backside of the eyelid to illustrate either normal directional growth of the lashes or undesired inward growth of the eye lashes is therefore possible. Dermatochalasis, which involves the skin losing its normal healthy elasticity typically due to aging and results in a fold of skin hanging over the lower portion (margin) of the upper eyelid, and as illustrated by a replacement eyelid of the present model which has an excess fold of skin over the lower part (margin) of the upper eyelid; chalazion which involves blockage of a duct and inflammation of a Meibomian gland resulting in accumulation of fat like lipids and a swelling of the respective lid, and is illustrated by a replacement eyelid (or the normal anatomical eyelid with an inflamed gland inserted into it) in the present model having a hard sty like inflammation in the lid; hordeolum also referred to as a sty which is typically due to infection of a lash follicle resulting in a swelling that produces puss, and also may be caused by infection of related glands, as illustrated by a replacement eye lid having a swelling and soft top layer to illustrate puss formation.

Shown in FIG. 13, the assembly demonstrates a subconjunctival hemorrhage (102) as illustrated by a bright red spot on the conjunctival.

The cornea (36) of the present invention is actually a set of replaceable corneas which preferably securely snap fit (as shown in FIG. 9) into the body (34) and are removable and replaceable in order to selectively demonstrate the condition of the cornea either in a healthy state or selectively one of numerous damaged or unhealthy states. As shown in FIGS.

11a, 11b, 11c and 11d, the set of corneas (36) involving the unhealthy states include corneal abrasion (36b) (abrasion (104)) which is typically caused by contact of an undamaged cornea (36a) with a foreign object such as a stick and may be typically treated with an antibiotic and optionally a pain treating agent, and/or eye patch. A cornea (36c) having corneal lacerations (106) which typically involve perforation of the cornea. A cornea (36d) having foreign bodies (body) (splinters) (108) lodged on the surface of the cornea which may typically be removed, and a cornea (36e) having corneal ulcers (ulcer) (110). As shown in FIGS. 18-19, the present assembly also provides interchangeable corneas (36) which exhibit the results of various corneal surgical procedures including radial keratotomy (cornea (36f)); photo refractive keratectomy; automated lamellar keratoplasty (cornea (36g)); laser assisted keratoplasty; and lasik. Keratoplasty involves corneal transplantation wherein the diseased portion of the cornea is removed and a donor material is grafted as a replacement and is sutured into place. Lamellar keratoplasty involves removing and replacing an outer layer of the cornea, as in contrast to penetrating keratoplasty which involves replacing the entire depth of the cornea. Photo refractive keratectomy involves changing the refraction of the cornea by changing the curvature thereof. Retinal detachment is illustrated in a replacement portion of the model as well as the scleral buckling procedure which involves utilization of silicone pads placed around the eyeball and held into position with a scleral buckle to functionally indent the sclera and choroid to keep the retina and choroid in contact thereby facilitating reattachment of the retina to the choroid.

The iris (112), as shown in FIG. 17, is also replaceable (or changeable) in order to show the differences between healthy iris and an iris which has defects, such as an iris exhibiting iris atrophy. Also, the condition of surgical iridectomy is easily demonstrated with this model.

The assembly also includes a storage base (114) for retaining all of the assembly components in a neatly stored arrangement for quick and easy selection of the appropriate combination of components for use in combination. The assembly also includes a releasable attached stand (116) (magnetic coupling—magnetic elements in the head (118) of the stand and in the bottom region (120) of the eye body). The base (118) preferably has retention grooves for receiving the respective components of the assembly. The base may also have upright retention pegs (122) which extend into holes in the bottom of the stand for releasable securing the stand to the base. The preferred structural eye assembly comprises: (a) a vitreous fluid chamber comprising (i) particles having a density of between 0.5 and 1.5 grams per centimeter cubed, and (ii) a fluid having a density of between 0.5 and 1.5 grams per centimeter cubed. The particles preferably freely float within the fluid to resemble vitreous floater in a human eye. As shown in FIG. 14, an eye having a yellowish nodule (150) may be used to demonstrate the condition of pinquecula.

What is claimed is:

1. A structural eye assembly comprising:

(a) a vitreous fluid chamber, said chamber comprising (i) particles having a density of between 0.5 and 1.5 grams per centimeter cubed, and (ii) a fluid having a density of between 0.5 and 1.5 grams per centimeter cubed.

2. The assembly of claim 1 wherein said liquid is water.

3. The assembly of claim 1 wherein said particles are flakes.

4. The assembly of claim 1 wherein said vitreous chamber is removable from said eye assembly.