



Ocular Health of Patients in Critical Care Units

Patients in critical care settings are at increased risk for developing ocular complications, most commonly as a result of excessive exposure and drying of the surface of the eye. A number of factors contribute to this problem.

- Sedation and muscle relaxants decrease the blink rate and predispose the ocular surface to desiccation. At particular risk are patients receiving mechanical ventilation. During sleep the eyelids close via active, tonic contraction of the orbicularis oculi muscle. Paralysis of these muscles leads to eyelid closure only by passive means (i.e. gravity) and this frequently means incomplete closure of the eyelids known as “lagophthalmos.”
- Increased jugular venous pressure from mechanical ventilation can also lead to fluid buildup, known as chemosis, under the conjunctiva. The conjunctiva is a stretchy mucous membrane covering the white part of the eye (sclera). This chemosis can be quite pronounced, with conjunctiva protruding over the lower eyelid. This condition can lead to further impairment of passive eyelid closure and increased drying of the ocular surface. Positive end expiratory pressure (PEEP) of 5 cm H₂O and above is thought to worsen conjunctival chemosis by decreasing venous outflow from the head and neck.
- Proper, simple eye care measures can decrease the incidence of sight-threatening infections and scarring that can yield long-term problems for a patient who was otherwise successfully treated during their time in the critical care unit.
- Additionally, for patients who are terminally ill, proper eye care will help maintain the health of the corneal tissue and preserve the option of eye donation for the patient or the patient’s family members.

Nursing Interventions

- **Keep the patient’s face clean.** Corneal infections are most commonly caused by the patient’s own bacterial flora.
- **Protect the patient’s eyes with a towel while suctioning** gastrointestinal or respiratory secretions—even in closed systems. Introduction of bacteria from these sites onto a compromised cornea can lead to very aggressive infections.
- **Follow the eye care protocol.** See the reverse side for instructions on administering lubricating ointments.

How to Apply Eye Lubricating Ointments



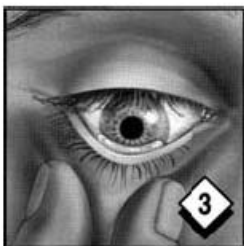
Wash hands thoroughly with soap and water!



Gently pull the lower lid downward to expose the conjunctival sac and form a pocket. You may use a cotton-tipped swab to roll the upper lid open to access the lower lid if necessary.



Squeeze a ribbon of ointment into the pocket just inside the lower lid. Avoid touching the tip of the medication bottle or tube to the eye to avoid the transfer of micro-organisms to the medication and injury to the eye. Do not push on the eyeball or touch the eye. Use the cheekbone and/or forehead to steady your hands.



Very gently, pinch the lower lid and move gently upward to disperse some of the ointment onto the cornea.



Close the eyes completely. A cotton swab can be helpful to roll the upper lid downward. Do not pull on the edge of the lid. Do not tape closed. Ensure that no part of the cornea is visible beneath the eye lid. Repeat every 8 hours.