

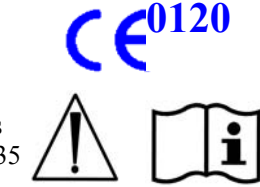


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**CAUTION:**  
**GLASS TUBE**  
**IS FRAGILE**  
**HANDLE**  
**WITH CARE**

## Lester Jones Instruction Leaflet (2 of 2)

### **STERILISATION INSTRUCTIONS**

**Sterilisation Of Implantable Glass Tubes:** Before sterilising, clean the tubes with Isopropyl Alcohol (following the manufacturer's instructions) and rinse with Sterile Water. Steam sterilise the tubes using a standard 134°C -137°C cycle with a 3 minute holding time, use a peel pouch to protect sterility. Ensure the tube is thoroughly dry after sterilisation – Use HTM2010 where appropriate. Repeated processing or mishandling may damage these products. To prevent devitrification do not process tubes more than 10 times

**Sterilisation Of Polyethylene Tubes and Cleaning Rods:**

**Do not autoclave Polyethylene Tubes or Cleaning Rods!**

Polyethylene Tubes and Cleaning Rods should be cleaned and packed as above but only sterilised using Ethylene Oxide to EN556 using a protocol verified by the sterilisation plant under EN550, ISO 9001 and ISO 13485 procedures. This product should only be used by a suitably trained and qualified Physician under normal operating room conditions.

### Surgery For Insertion Of Glass (Pyrex) Tube

### Lester T. Jones M.D.

After tear sac surgery has reached the point at which the tear sac has been opened, part or all of the caruncle is excised, be careful not to remove any of the adjacent conjunctival tissue with it. A 23-gauge hypodermic needle, 30mm long, is bent into a curve so that the point of the needle is on the inside of the curve. The needle should be held with the concavity of the curve facing anteriorly. The point is then inserted in the lacus exactly 2½mm posterior to the cutaneous margin of the canthal angle. It is then pushed in a direction that will cause its point to emerge just posterior to the anterior tear sac flap and slightly below the level of the palpebral fissure. Several attempts may be necessary to get the point to emerge in exactly the right place. It must be anterior to the body of the ethmoid and middle turbinate, whose anterior end should be resected if it interferes with the tip of the needle.

A cataract knife of medium width is then inserted through the sac, following the guide needle. The needle is then removed and the knife enlarges the passage superiorly and inferiorly just enough to allow insertion of a polyethylene tube. Do not remove the knife until the tube is in place as described below. The tube should have a collar width of at least 4mm wide. It should be about 18mm long and have a bevelled end. The tube is threaded, collar first, over a Number 1 Lacrimal Probe, which is then passed along the flat side of the knife into the nose. The tube is turned so that its point lies between the flat side of the knife and the probe and is then pushed through the new passage. If this technique is not followed, the tube often is difficult to insert, due to its nasal end catching in fascial bands. A 6-0 black silk suture on a cutting needle is passed through the collar of the tube and out through the adjoining skin of the commissure and tied. If the nasal end of the tube touches the septum it is cut shorter. The usual closure is then completed. It is necessary for the tube to have "soft tissue" suspension, i.e. free movement without contact with ridged structures during blinking. The Dacryocystorhinostomy may be done by any other method. The foregoing description is given primarily because it furnishes the new passage with a little more epithelialization at its nasal end.

**If having difficulty inserting the tube,** the small end of the small metal dilator can be inserted, followed by the larger end, then the small end of the larger dilator. This is followed by inserting the tube which is threaded; collar first, over a #1 Bowman Probe. If any difficulty is still encountered with the insertion, the larger end of the large dilator is inserted after which the Pyrex Tube will pass in easily. If the passage has contracted too much for insertion of the dilators, Bowman probes may be inserted, followed by the curved Ziegler Punctum Dilator until the regular dilators will enter. If these fail, Zylcaine 1% should be injected above and below the passage followed by the insertion of a small Bowman Probe, then a Canaliculus Knife or even a sharp guide needle and Graefe Knife.

If necessary a polyethylene tube may be left in until the postoperative swelling subsides. However, a Pyrex Glass Tube may be substituted at almost anytime. The glass tubes recommended are 2mm in outside diameter with a rounded 4mm collar and a 2.25mm enlargement at the nasal end. They are custom made and vary in length. Some are made with a bevel and no enlargement at the nasal end, but these are more easily lost. If the mouth of the tube lies at a poor angle in the lacus and does not drain well, a slight angle to the tube may be of value. After a month or two, a tube with a 3mm collar is substituted for the 4mm one. The glass tube has the advantage of being less irritating to the tissues. It possesses capillary attraction and does not get obstructed with secretions as easily as the polyethylene tube.

After the first two or three weeks, due to the invasion of fibroblasts the new passage will contract down without the tube within a few minutes. But in the later stages, contraction becomes greatly diminished, the tube becomes loose and is often blown out or lost. This usually occurs about 18 to 24 months after surgery. The patient must be taught not to blow their nose, or to hold their finger over the tube if they do. Never attempt permanent removal of the tube if it is held tightly in the passage or when it is difficult to reinsert.

## Lester Jones Instruction Leaflet (2 of 2)

### Post Operative Care Of Conjunctival Dacryocystorhinostomy

Lester T. Jones M.D.

In many ways the post operative care is the most important part of this procedure. Before operating, a set of Polyethylene and Pyrex tubes and two dilators should be obtained from Altomed Limited. The Polyethylene tube is exchanged for a Pyrex tube with a 4mm collar from 1 to 4 weeks post operatively. The length is determined by looking to see how far the plastic tube extends into the nose. For example, if the plastic tube appears to extend 3mm or more than 3mm into the nose, the length of the plastic tube is measured (when removed) and a Pyrex Tube is selected that is just long enough to protrude 1mm or 2mm. Within the next one to six weeks, the 4mm collar tube is exchanged for one with a 3mm collar.

The patient is taught to "blow his nose." If they should blow their nose or sneeze, they should first close their eyelids tightly or hold their finger over the end of the tube. If the tube becomes obstructed the patient should sniff vigorously, or squirt a little saline solution with a medicine dropper through the medial corner of the eye; this usually re-opens the tube. When a mild discharge is present in the nose, a saline douche and vigorous treatment of the nasal condition is required to keep mucous from plugging up the nasal end of the tube.

The patient is told that, if the tube comes out, they should see their Doctor as soon as possible. If seen within the first 24 hours, the small end of the small metal dilator can be inserted, followed by the larger end and next the small end of the larger dilator. This is followed by reinsertion of the sterilized tube which is threaded; collar first, over a #1 Bowman Probe. If any difficulty is encountered with the insertion, the larger end of the large dilator is inserted after which the Pyrex Tube will pass in easily. If the passage has contracted too much for insertion of the dilators, Bowman Probes may be inserted, followed by the curved Ziegler Punctum Dilator until the regular dilators will enter. If these fail, Zyllocaine 1% should be injected above and below the passage followed by the insertion of a small Bowman Probe, then a Canaliculus Knife or even a sharp guide needle and Graefe Knife as done in the original installation of the tube. This can usually be done in the office. The passage becomes tighter after the first few weeks, and danger of loss of the tube becomes less until one or two years later.

The development of a mild conjunctivitis at the medial canthus or formation of granulation tissue around the tube usually means that a rough deposit has formed on the outside of the tube. The tube is removed and the large dilator inserted while the scale-like coating is scratched off the tube. After reinsertion of the tube, the conjunctivitis will immediately clear. If granulation tissue is present, it is also removed and a 10% silver nitrate solution is applied to the area.

The 4mm collar might cut a slight notch in the upper lid. Replacement with one having a 3mm collar will usually cure this. Sometimes an angled tube may work better than a straight one. If the collar-end of the tube gets too deep or is partially covered with tissue, it should be replaced by a tube with a larger collar. 3½ mm collars may be ordered if necessary.

If the collar has disappeared from view, a Bowman Probe can usually be passed into the tube blindly and guided down the tube by intranasal inspection. Then, by using a small circular curet, (such as used for removing earwax) the tube can be pushed back into the conjunctival sac and removed. If it cannot be pushed back, an incision with a #11 Bard Parker Blade is made in the constricting ring of tissue around the collar, after which the tube is easily removed.

If the collar of the tube extends too far externally, it usually means that the tube is too long or that the middle turbinate or a deviated nasal septum is causing the trouble. Use of a shorter tube or one with an angle or the removal of the upper part of the middle turbinate or a submucous resection may be necessary.

When there is a defect in the nasal margin of the lower lid, the tube will either come out repeatedly or the passage and tube may even "migrate" away from the lacus area. Also, if the collar is forced anteriorly when the lids close, the tube will migrate out. The cure usually requires temporary removal of the tube until the lid margin has been restored by plastic surgery. Sometimes deepening of the lacus by removal of more tissue and then making a new passage posterior to the first will solve the problem. Sometimes the plica semilunaria obstructs the mouth of the tube. It can be remedied by a simple excision of the obstructive tissue.

When to take the tube out permanently is a big problem. It should not be taken out if it is held in tightly and not annoying the patient. If, after six or more months, it becomes to come out spontaneously, try to teach the patient to take the tube out and re-insert it immediately themselves (the Physician should decide if the patient is capable of doing this). Then the patient can increase the intervals a little each day before they reinsert it until they are wearing it only at night or not at all. Another method is to learn to insert the dilator once or twice a day and dispense with the tube entirely. They should be seen at the office frequently until you are sure the passage does not close and that the dye test is positive.

Every patient should be advised to inform the Physician IMMEDIATELY if their eye begins to tear or if they are having trouble with the tube. An inspection of the nasal end of the tube should be made frequently. The patient should be monitored carefully during the first few weeks and months.