

LABORATORY COLLECTION MANUAL	EYE CULTURE SPECIMEN COLLECTION
Effective Date: 6/96	Page 1 of 3

I. GENERAL PRINCIPLE

Inflammatory eye conditions may be due to a variety of diseases, with eye infections caused by a variety of organisms. Aerobes, anaerobes, fungi, mycobacteria, viruses, parasites, and *Chlamydia trachomatis* can all be recovered, if the proper collection techniques are observed. Detection of organisms is dependent on knowledge of the site of infection and the severity of the condition. Any infection more involved than conjunctivitis should require collection by an ophthalmologist; and close contact with the laboratory, as media inoculation at the bedside may be required. The clinical syndromes associated with ocular infections are:

00000000• Conjunctivitis

Acute or chronic inflammation of the conjunctiva, the mucous membrane covering the sclera. Symptoms may be unilateral or bilateral and include reddening of the surface, tearing, and purulent discharge. The source of infection is usually direct inoculation from hands or the environment. This is the most common type of eye infection; however, tears contain natural antibacterial agents, so the number of organisms recovered may be quite low.

- Keratitis

Inflammation of the cornea. Prompt investigation is required for this serious condition, with presentations extending from superficial infection of the corneal epithelium to deep ulceration that could lead to perforation and/or loss of the eye. Symptoms include redness, inflammation of the conjunctiva, pain, decreased vision, photophobia, and foreign-body sensation resulting in tearing and exudate formation.

- Endophthalmitis

Inflammation of the ocular cavity and intraocular tissue resulting from trauma, including surgery. It is the most serious and sight threatening infection of the eye. The patient has decreased vision, pain, lid edema, uveitis, and an accumulation of pus in the eye.

- Periocular Infections

Inflammation of the tissue surrounding the eye, including eyelids, lacrimal system, and the orbit. The orbit is bound on three sides by the sinuses, and infection there may extend directly to the eye.

II. SPECIMEN COLLECTION

A. General Considerations

1. Contact lab prior to collection of specimen from eye. Special media, procedures and/or bedside inoculation may be needed to recover suspected pathogens.
 - a. *Chlamydia trachomatis* requires inoculation of viral/chlamydia transport media.
 - b. *Acanthamoeba* identification is best accomplished by pathology review.
 - 1) Place corneal scraping material into a THIN PREP vial.
 - 2) Specimen will be processed in histology to recover all cells present and the smear will be stained with Wright's - Giemsa.
 - 3) Specimen should be accompanied by a pathology requisition form.
2. **Culture each eye separately.**

LABORATORY COLLECTION MANUAL	EYE CULTURE SPECIMEN COLLECTION
Effective Date: 6/96	Page 2 of 3

3. Obtain specimens **before topical anesthetics are applied.**
4. Smears should be prepared at the bedside from scrapings by gently spreading the material in a small circular area on a clean glass slide, or by compressing the material between two slides and pulling the slides apart. Smears should be thin, not thick.
5. Use Dacron swab with plastic shaft, provided by the laboratory, for viral and chlamydia cultures.
6. **Most eye specimens should be collected by an ophthalmologist.** The best recovery is from media inoculated at the bedside. In a majority of cases, just prior to specimen collection, the ophthalmologist or staff will contact the lab with a list of tests desired. The lab is responsible for gathering the media and/or supplies necessary to perform those tests and supplying instructions for bedside inoculation. In most cases, the office staff will pickup those supplies from the lab within minutes of their request.

B. Conjunctiva

1. Collect purulent exudate on a pre-moistened, sterile swab from the surface of the lower conjunctival sac and the inner canthus.
2. The conjunctiva may be scraped with a sterile spatula and the material inoculated to media directly at the bedside.

C. All Other Scrapings or Aspirates

1. Collection procedure should be performed by a physician.
2. A swab specimen of the conjunctiva should always accompany a specimen collected by a more invasive technique. The conjunctiva is constantly contaminated by various bacteria from the environment and the surrounding ocular structures. The conjunctival specimen can serve as the control for specimens collected by more aggressive / invasive techniques.

III. TRANSPORT

- A. Specimens for viruses or chlamydia must be inoculated at the bedside into special transport media and submitted to the lab immediately after collection.
- B. Transport swabs and slides to the lab ASAP. Do not refrigerate.
- C. Transport inoculated media and slides to the lab **immediately.**
- D. Small volume aspirates may be transported in the syringe, without the needle. Hand deliver to the microbiology staff immediately. Alternatively, aspirates for anaerobes may be placed in an anaerobic culturette and then transported to the lab ASAP.
- E. As always, transport specimens to the lab in a biohazard bag.

LABORATORY COLLECTION MANUAL	EYE CULTURE SPECIMEN COLLECTION
Effective Date: 6/96	Page 3 of 3

WRITTEN BY: D'Ann Spinks, MT(ASCP) DATE: 6-96

APPROVED BY: Martin F. Belli, M.D. DATE: 6-96

REVISED BY: D'Ann Spinks, MT(ASCP) DATE: 4-99, 5-2000, 4-2010

APPROVED BY: Martin F. Belli, M.D. DATE: 4-99, 5-2000, 4-2010

See original policy in the Laboratory for all documented annual reviews.

REFERENCES:

Clinical Microbiology Procedures Handbook; 1992; Isenberg; American Society for Microbiology.

Manual of Clinical Microbiology; 1991, 5th edition; Balows, Hausler; American Society for Microbiology.

Bailey & Scott's Diagnostic Microbiology; 1986, 7th edition; Finegold, Martin, Scott; C. V. Mosby Co.