

## SHASTA PATHOLOGY ASSOCIATES

### CYTOLOGY SPECIMEN COLLECTION

- I. **PRINCIPLE:** Proper collection and handling of all cytology specimens helps ensure the most accurate results possible from the specimen.

Cytology specimens collected both at hospitals and health care provider offices are sent to Redding Anatomic Pathology for processing and examination. Different requisition forms are used for each hospital and for physician offices.
- II. **PATIENT PREPARATION:**
  - A. No Laboratory specified patient preparation is required for cytology specimens, except as specified under III. H. Urine.
- III. **CYTOLOGY SPECIMEN COLLECTION AND FIXATION:**
  - A. **Body fluids (peritoneal, pleural, cystic, joint, pericardial):**
    1. After insertion of the needle into the cavity, collect approximately 2 mL of fluid in a sterile container for culture (if a culture is requested).
    2. Send all additional fluid collected for cytology examination.
    3. Label the specimen with the patient's first and last name and the source of the fluid.
    4. Send the specimen with the appropriate completed "TISSUE SPECIMEN" requisition slip immediately to the Laboratory.
  - B. **Breast secretions:**
    1. Label two slides with the patient's last name and first initial.
    2. Gently press the nipple and subareolar area to express any secretions.
    3. Allow a "pea sized" drop of secretion to collect upon the nipple.
    4. Touch the nipple secretion drop with a slide, then press the second slide on the drop, and pull the slides apart.
    5. Immediately spray the slides with non-scented Aqua-Net hairspray or Cytology Fixative spray.
    6. Do not allow the slides to dry before spraying.
    7. Send the slides with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory.

**C. Bronchial brushings:**

1. Label several slides with the patient's last name and first initial.
2. Smear the slides with the bronchial brush material immediately, and fix the slides immediately in a bottle of 95% reagent alcohol.
  - a. Label the alcohol bottle(s) with the patient's last and first name and with the specimen site.
  - b. Unfixed dried slides exhibit distortion of cellular material due to air drying, and they are unsuitable for cytologic examination.
  - c. Never use formalin as a fixative for cytologic specimens, as it causes cellular distortion and renders the specimen unsuitable for cytologic evaluation.
3. Prepare air-dried slides for acid-fast, fungus, or gram stain(s), if these stains are indicated; label the slides with the patient's last name and first initial and the stain(s) requested.
4. Send the labeled slides for Cytology examination in an alcohol bottle(s) with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory.
5. Send the labeled slides for organism staining in an empty glass bottle or in a slide holder with a completed "TISSUE SPECIMEN" requisition to the Laboratory.

**D. Bronchial washings:**

1. Instill 5-10 mL of saline into the involved portion of the bronchus.
2. Aspirate the fluid material into a U-tube; label the tube with the patient's first and last name and "Bronchial Washings".
3. Send unfixed washings with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory as soon as possible.
4. Refrigerate the specimen, if there will be a delay in shipping the specimen.

**E. Cerebrospinal fluid:**

1. Collect the CSF for cytology examination in a separate tube after the first few drops.
2. Label the tube with the patient's first and last name and "CSF".
3. Send the specimen to the Laboratory with the appropriate completed "TISSUE SPECIMEN" requisition slip immediately.
  - a. Cells in spinal fluid deteriorate rapidly.
4. Refrigerate the specimen, if there will be a delay in shipping the specimen.

**F. Needle aspiration:**

1. Needle aspirations of solid masses of lung, thyroid, breast, liver, or soft tissues may produce a semisolid material which can be smeared on slides and/or fixed in carbowax for a Cytospin and/or a cell block preparation.
2. Smear the aspirated material on glass slides, and fix the cells immediately by immersing the slides in 95% reagent alcohol or by spraying the slides with non-scented Aqua-Net hairspray or Cytology Fixative spray.
3. Prepare air-dried smears for acid-fast, gram, or fungus stains, if organisms are suspected.
4. Put all remaining aspirate into a bottle of carbowax.
5. Label all materials with the patient's first and last names, and the aspiration site. Complete a "TISSUE SPECIMEN" requisition slip to accompany the specimens, and send to the Laboratory as soon as possible.

**G. Sputum:**

1. When the patient awakens in the morning and before breakfast, have the patient rinse his/her mouth with clear water and discard the water.
2. Immediately have the patient take a deep breath to full lung capacity and produce an explosive cough.

3. Expectorate all sputum into the screw cap collection container, containing carbowax fixative. Repeat the cough as necessary to collect 1 tablespoon of sputum.
4. Seal the container, label the container (not the lid) with the patient's first and last name and with "Sputum", and send the container to the Laboratory with a completed "TISSUE SPECIMEN" requisition.
5. Three separate sputum collections from three consecutive days are recommended.
6. Instruct the patient not to spit into the fixative without a deep cough, since saliva is of no diagnostic value.
6. The sputum specimen in fixative can be refrigerated up to 72 hours.

**H. Urine:**

1. Patient preparation:
  - a. Have the patient empty his/her bladder into the toilet for the first void of the morning.
  - b. Have the patient drink an eight ounce (8 oz) glass of water or juice, not coffee, tea, or soda.
2. Specimen collection:
  - a. Approximately one hour later have the patient void by the clean-catch method into the specimen container.
  - b. Label the specimen container with the patient's first and last name and with "Voided Urine".
  - c. Send the fresh urine specimen with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory immediately.
  - d. If a delay in delivery to the Laboratory beyond two hours post collection is anticipated, add an equal volume of Carbowax to the urine.
3. The patient preparation and specimen collection procedures may be repeated on two additional days, if three urine specimens are ordered.

IV. SUPPLIES:

A. Aqua-Net hairspray:

1. SD alcohol 40; water; propane; isobutane; vinyl acetate/crotonic acid/vinyl neodecanoate copolymer; aminomethyl propanol; fragrance; ammonium hydroxide; ammonium benzoate.
2. 7 ounce spray can.

B. Cytology Fixative spray.

1. 95% ethyl alcohol; 2.5% carbowax.
2. 1 fluid ounce pump spray bottle.

C. 95% reagent alcohol.

1. 60 mL glass screw cap bottle.

D. Carbowax:

1. 5% polyethylene glycol in 95% alcohol.
2. 20 mL glass or plastic screw cap bottle.

E. All of the above are stable at room temperature indefinitely.

F. Obtain all of the above supplies from Redding Anatomic Pathology.

V. NOTES:

A. These specimen requirements are summarized in the last three pages of this document, formatted to print two 8.5 X 5.5" cards per page. These pages can be printed on cardstock and cut in half to yield two cards per page. These cards can be distributed to the appropriate nursing units and specimen collection sites.

B. Document the distribution of these cards on the distribution list included in this document.

VI. AUTHORS:

A. Written by Richard Severance, M.D., 4/10/96.

B. Revised by Richard Severance, M.D., 4/7/97, 4/6/98, 1/6/99, and 6/2/00.

- C. Revised by Elaine Fancelli, HT, 1/11/99.
- D. Revised by Mary Boyd, CT, 1/30/03.
- E. Revised and approved by Richard Severance, M.D.,  
1/31/03. ([Archive\Cytology Specimen Collection\\_062008.DOC](#))
- F. Revised by Forest W. Bowman, M.T.(ASCP), 6/20/08.
- G. Approved by Mark W. Ramus, M.D., 6/24/08

VI. ANNUAL REVIEW:

2009 \_\_\_\_\_

2010 \_\_\_\_\_

2011 \_\_\_\_\_

2012 \_\_\_\_\_

Specimen Requirements Cardfile Distribution List

A. Body Fluids:

_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Breast secretions:

_____	_____	_____
_____	_____	_____
_____	_____	_____

C. Bronchial brushings:

_____	_____	_____
_____	_____	_____
_____	_____	_____

D. Bronchial washings:

_____	_____	_____
_____	_____	_____
_____	_____	_____

E. Cerebrospinal fluid:


F. Needle Aspiration:


G. Sputum:


H. Urine:




## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **A. Body fluids (peritoneal, pleural, cystic, joint, pericardial):**

1. After insertion of the needle into the cavity, collect approximately 2 mL of fluid in a sterile container for culture (if a culture is requested).
2. Send all additional fluid collected for cytology examination.
3. Label the specimen with the patient's first and last name and the source of the fluid.
4. Send the specimen with the appropriate completed "TISSUE SPECIMEN" requisition slip immediately to the Laboratory

## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **B. Breast secretions:**

1. Label two slides with the patient's last name and first initial.
2. Gently press the nipple and subareolar area to express any secretions.
3. Allow a "pea sized" drop of secretion to collect upon the nipple.
4. Touch the nipple secretion drop with a slide, then press the second slide on the drop, and pull the slides apart.
5. Immediately spray the slides with non-scented Aqua-Net hairspray or Cytology Fixative spray.
6. Do not allow the slides to dry before spraying.
7. Send the slides with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory.

## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **C. Bronchial brushings:**

1. Label several slides with the patient's last name and first initial.
2. Smear the slides with the bronchial brush material immediately, and fix the slides immediately in a bottle of 95% reagent alcohol.
  - a. Label the alcohol bottle(s) with the patient's last and first name and with the specimen site.
  - b. Unfixed dried slides exhibit distortion of cellular material due to air drying, and they are unsuitable for cytologic examination.
  - c. Never use formalin as a fixative for cytologic specimens, as it causes cellular distortion and renders the specimen unsuitable for cytologic evaluation.
3. Prepare air-dried slides for acid-fast, fungus, or gram stain(s), if these stains are indicated; label the slides with the patient's last name and first initial and the stain(s) requested.
4. Send the labeled slides for Cytology examination in an alcohol bottle(s) with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory.
5. Send the labeled slides for organism staining in an empty glass bottle or in a slide holder with a completed "TISSUE SPECIMEN" requisition to the Laboratory.

## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **D. Bronchial washings:**

1. Instill 5-10 mL of saline into the involved portion of the bronchus.
2. Aspirate the fluid material into a U-tube; label the tube with the patient's first and last name and "Bronchial Washings".
3. Send unfixed washings with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory as soon as possible.
4. Refrigerate the specimen, if there will be a delay in shipping the specimen.

**E. Cerebrospinal fluid:**

1. Collect the CSF for cytology examination in a separate tube after the first few drops.
2. Label the tube with the patient's first and last name and "CSF".
3. Send the specimen to the Laboratory with the appropriate completed "TISSUE SPECIMEN" requisition slip immediately.
  - a. Cells in spinal fluid deteriorate rapidly.
4. Refrigerate the specimen, if there will be a delay in shipping the specimen.

**F. Needle aspiration:**

1. Needle aspirations of solid masses of lung, thyroid, breast, liver, or soft tissues may produce a semisolid material which can be smeared on slides and/or fixed in carbowax for a Cytospin and/or a cell block preparation.
2. Smear the aspirated material on glass slides, and fix the cells immediately by immersing the slides in 95% reagent alcohol or by spraying the slides with non-scented Aqua-Net hairspray or Cytology Fixative spray.
3. Prepare air-dried smears for acid-fast, gram, or fungus stains, if organisms are suspected.
4. Put all remaining aspirate into a bottle of carbowax.
5. Label all materials with the patient's first and last names, and the aspiration site. Complete a "TISSUE SPECIMEN" requisition slip to accompany the specimens, and send to the Laboratory as soon as possible.

## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **G. Sputum:**

1. When the patient awakens in the morning and before breakfast, have the patient rinse his/her mouth with clear water and discard the water.
2. Immediately have the patient take a deep breath to full lung capacity and produce an explosive cough.
3. Expectorate all sputum into the screw cap collection container, containing carbowax fixative. Repeat the cough as necessary to collect 1 tablespoon of sputum.
4. Seal the container, label the container (not the lid) with the patient's first and last name and with "Sputum", and send the container to the Laboratory with a completed "TISSUE SPECIMEN" requisition.
5. Three separate sputum collections from three consecutive days are recommended.
6. Instruct the patient not to spit into the fixative without a deep cough, since saliva is of no diagnostic value.
7. The sputum specimen in fixative can be refrigerated up to 72 hours.

## Redding Anatomic Pathology Cytology Specimen Collection Guide

### **H. Urine:**

1. Patient preparation:
  - a. Have the patient empty his/her bladder into the toilet for the first void of the morning.
  - b. Have the patient drink an eight ounce (8 oz) glass of water or juice, not coffee, tea, or soda.
2. Specimen collection:
  - a. Approximately one hour later have the patient void by the clean-catch method into the specimen container.
  - b. Label the specimen container with the patient's first and last name and with "Voided Urine".
  - c. Send the fresh urine specimen with the appropriate completed "TISSUE SPECIMEN" requisition slip to the Laboratory immediately.
  - d. If a delay in delivery to the Laboratory beyond two hours post collection is anticipated, add an equal volume of Carbowax to the urine.
3. The patient preparation and specimen collection procedures may be repeated on two additional days, if three urine specimens are ordered.

# Redding Anatomic Pathology Cytology Specimen Collection Guide