



# CEDARS-SINAI MEDICAL CENTER®

## Instructions for Preparation of Specimens

**Fetuses should be sent on wet ice, and we will perform the radiographs and dissection. See “Instructions for Fetal Submission.”**

If the dissection will be performed at outside institutions, please prepare the specimens in the following way:

Dissected material should be frozen (see item 1) and fixed in formalin (4) and electron microscope fixative (5). Specimens of skin (2) and cartilage (3) should be obtained for tissue culture. Cut the chondro-osseous material longitudinally to include **bone, cartilage and growth plate**. Small portions cut from this dissection may be placed into the EM fixative, one half can be frozen and the other half placed in formalin.

### 1. Fresh frozen tissue

Whenever possible – ideally within one hour of death – specimens of bone and cartilage should be snap frozen in liquid nitrogen so that RNA studies can be performed. If liquid nitrogen is not available, the specimen can be frozen on dry ice or placed immediately into a -70 degree freezer. Please obtain the following specimens:

- One complete femur (or as much as possible)
- One complete tibia (or as much as possible)
- Chest plate (sternum plus several costal cartilages, including the costochondral junction)
- Iliac crest (wedge)
- Two to three vertebrae
- Liver

For older patients, most of the diaphysis (shaft of the bone) is not required, as long as the growth plate and articular cartilage (if present) is preserved and there are no abnormalities of the diaphysis (such as a bend). Immediately after obtaining these tissues, wrap them in individually labeled foil or plastic bags and freeze in liquid nitrogen or dry ice, if possible. Labels should list the patient name, anatomical site sampled and date collected. When obtaining specimens from older children and if the epiphyses are open, please include a growth plate and articular cartilage. In an adult, include a femoral head and costochondral junction.

**These samples must be sent frozen on dry ice by courier or express carrier.**

## 2. Tissue for fibroblast culture

Samples for fibroblast culture may be obtained from skin or fascia lata. Please swab skin with Betadine® or alcohol swabs. From a living patient, a 3-mm full-thickness punch biopsy is sufficient. From autopsy material, try to obtain a sample at least 5 mm x 5 mm. **Use sterile instruments and sterile techniques.** Obtain sterile tissue culture medium (e.g., minimal essential medium available in cytogenetics or pathology laboratories) in sterile flasks or tubes. Place the specimen in the medium. If culture medium is not available, **sterile saline in a sterile tube** can be substituted. Hold at room temperature until mailing if a 37-degree incubator is not available.

This sample must be sent at room temperature or on wet ice (NOT FROZEN).

## 3. Cartilage for chondrocyte culture

We prefer a sample from the cartilaginous head of a long bone (in a fetus), rib or iliac crest. Try to obtain a sample 5 mm x 5 mm x 5 mm. **Use sterile instruments and sterile techniques.** Obtain sterile tissue culture medium (MEM) in sterile flasks or tubes. Place the specimen in the medium. If culture medium is not available, **sterile saline in a sterile tube** can be substituted. Hold at room temperature until mailing if a 37-degree incubator is not available.

This sample must be sent at room temperature or on wet ice (NOT FROZEN).

## 4. Tissues fixed for light microscopy

Please obtain the following specimens fixed in 10% neutral buffered formalin (this solution is routinely available in pathology laboratories):

- Femur
- Rib (including costochondral junction)
- Vertebrae
- Iliac crest
- Any other bones when available

**Make sure to include cartilage and bone across a growth plate. For bent bones, please include the area at the bend.**

If abnormalities in the skull or other bones are apparent, please obtain specimens from the region and note the site(s) from which specimens were obtained. Place specimens from each site in separate sealed bottles or sealed bags and label each with the patient's name, anatomic site, date obtained and **Formalin**. Store in the refrigerator until mailing. **Do not freeze.**

**These samples must be sent at room temperature or on wet ice (NOT FROZEN).**

While we do accept outside histology blocks and slides for interpretation, we prefer to do our own embedding and staining because typical of decalcification, paraffin embedding and H & E staining makes the slides difficult to interpret.

#### **5. Tissues fixed for electron microscopy**

Please take thin slices (four to eight pieces) of each specimen (approximately 1-mm thick and 5- to 10-mm long) and place them in 2.5% glutaraldehyde, pH 7.4 (buffered with either phosphate or cacodylate), available in most pathology laboratories. Please obtain specimens, including bone, growth plate and cartilage from these sites:

- Femur
- Vertebrae
- Rib
- Iliac crest
- Skull or other skeletal sites with unusual features

Label each bottle, ***EM***. List the fixative used and include the patient's name, anatomic site and date obtained. Store in the refrigerator until mailing. **Do not freeze. These samples must be sent at room temperature or on wet ice (NOT FROZEN).**