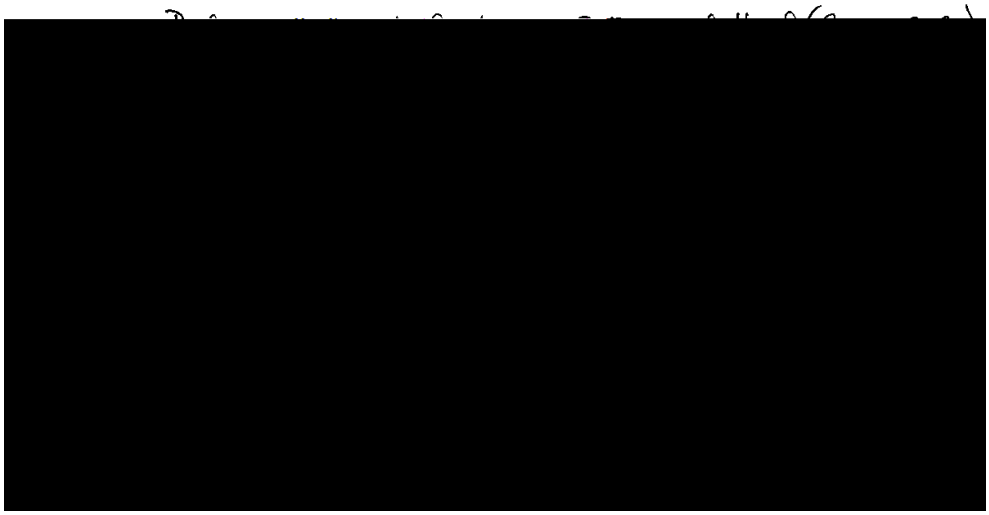
Mouse Utricle Dissection

If you are going to be setting up cultures, then before sacrificing the mouse you should have ice-cold DMEM/F12 without phenol red waiting in the hood.

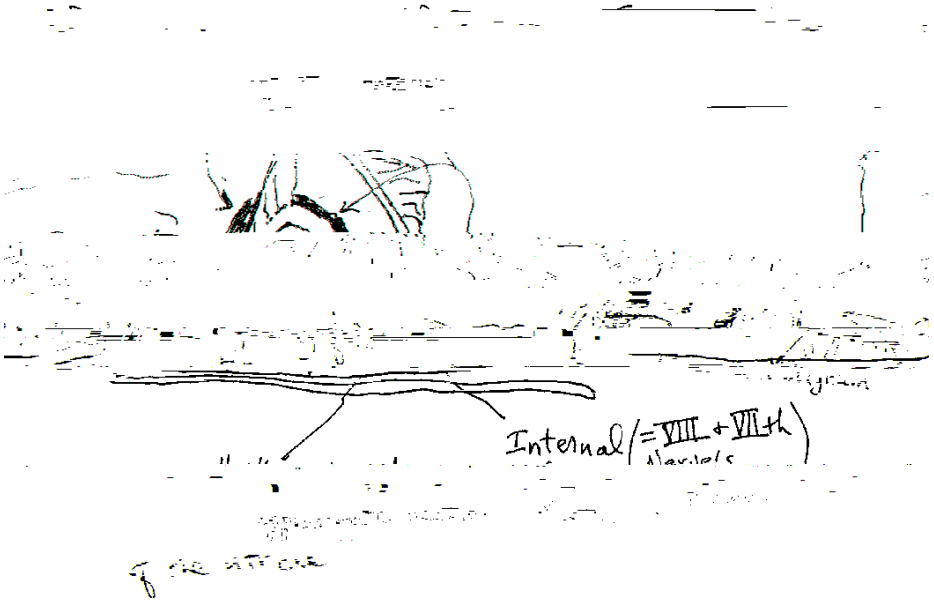
1. Kill the mouse by placing it in the isoflurane-filled chamber after covering the chamber bottom with paper towels. This allows the mouse to die with the least amount of trauma because it will slowly become anesthetized, go unconscious, and then will die.

2. Once the mouse has stopped breathing, check for the absence of eye-blink reflexes

7. Next, taking special care so as to not put undue stress on the brain, bisect the head with two sets of cuts. The first set of cuts should begin at the foramen magnum and go straight down the middle of the top of the skull, ending at the nose. Use multiple cuts and movements of the scissors so as to avoid squishing the tissue. The second set of cuts should again start from the foramen magnum and go straight down the middle of the roof of the mouth and into the nose.



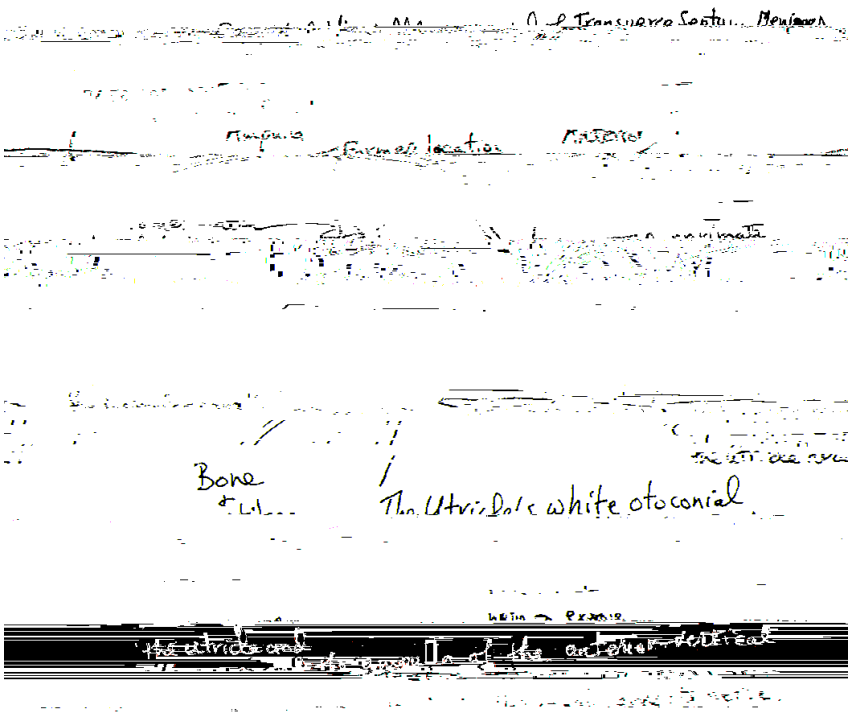
8. From each skull half, scoop out the brain and locate the “ear box.” Some people like to dissect out just the “ear box” at this point; others don’t. Whichever way feels comfortable to you is fine.



9. Place each “ear box” or cleaned braincase together with the rest in a new 60 mm dish sitting in crushed ice. The dish should be filled with ice-cold DMEM/F12 without phenol red.

10. Repeat Steps 7-9 until all the remaining “ear boxes” or braincases are dissected and placed in the storage dish sitting on crushed ice.

11. When all the “ear boxes” or braincases are out of all the pups, dissect the utricles from each. At this point it is important to remove the meninges that may still be adhering to the inner surface of the bone or cartilage. The meninges are thin membranes that line the braincase. Strong connective tissues in those membranes can interfere with getting clean breaks in the skeletal structure that surrounds the delicate inner ear tissue. It is easiest to begin to remove them by grasping and removing the tentorium cerebelli.

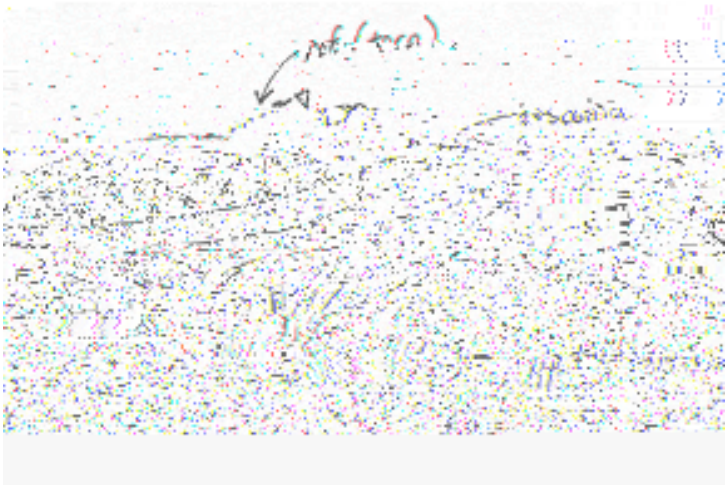


12. The easiest way to remove the utricle is to use specially sharpened #5

Protocol: Mouse Utricle Dissection
Created by: Corwin Lab
Modified for the BIE Course

To clear otoconia from the utricle sensory epithelium, use your finest #5 forceps.

Picture of Utricle



18. To do this, use the same two forcep method described above to remove about half of the utricle's roof. Grab the utricle by either the remaining portion of the roof or by the remnants of the nerve, and using a dull pair of #5 forceps, begin to gently scrape away the otoconia from the apical surface of the utricle. Take great care in this step because it is very easy to puncture the underlying sensory epithelium! **Hint:** If you've cleaned most of the otoconia off, but a few spots remain, it is often helpful to grab a clump of the