

**LSU Health Sciences Center  
Gamma Knife  
Proc. 19.13.26.6**

**Annual/Full Gamma Knife  
Quality Assurance Guidelines**

**Policy:**

Gamma Knife Services will operate under Louisiana written guidelines regarding Physics calibration and Quality Assurance. The Medical Physicist will perform on-going QA and calibrations on the Gamma Knife Unit with supporting documentation of results. Physics QA requirements are performed for annual full calibration.

**Procedure:**

Annual calibration procedure for Elekta Leksell Gamma Knife Model C S# 4828 will be conducted by a licensed medical physicist.

- A. When full calibration is required
  - 1. Before initial use at time of install
  - 2. If output is 5% different from output at last full calibration
  - 3. Following each replacement or reinstallation of sources
  - 4. Any repair which includes the source assembly housing
- B. What full calibration consist of
  - 1. Output within 3%
  - 2. Relative helmet factors
  - 3. Isocenter coincidence
  - 4. Timer accuracy & linearity
  - 5. On-off error
  - 6. Trunnion centricity
  - 7. Proper table function
  - 8. Proper helmet micro switch
  - 9. Proper function of emergency timing circuits
  - 10. Proper function of head frame and trunnions
- C. M.D. Anderson Head Frame Phantom
- D. 5 year Calibration is performed by Elekta

