**FIELD SIZE LIMITATION**

**Laboratory Experiment #6**

**Procedure:**

This lab must be done placing the cassettes on the *tabletop*. Center the lumbar spine of an abdomen phantom on the table in AP position. (You may need sponges and sandbags or clamps to hold it in place.) Select a technique of 10 mAs and 80 kVp using 400-speed screen cassettes. Number your films with lead markers.

Alternate Technique = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Film #1: Open the collimator field size to 17 x 17 inches and use a 14 x 17 inch cassette placed tabletop under the phantom.

Film #2: Place an extension cylinder or cone on the collimator. (If you do not have one, collimate to a 5 x 5 inch square.) Center over one of the lumbar vertebrae. This time use an 8 x 10 inch cassette on the tabletop under the phantom.

**Analysis:**

1. Select two different, homogeneous density areas on the phantom image. Measure these densities on a densitometer, record them, and calculate the indicated contrast levels by dividing the smaller number into the greater, and record.
2. Note the darker *density* for each radiograph. As field size is reduced, does radiographic density increase, decrease, or remain equal?
3. Based on the percentage change, in density, how much would you estimate the percentage change in mAs is required to restore the density for this much collimation?
4. Why would you not recommend an increase in kVp to compensate for field size limitation?
5. Compare the radiographic contrast measured in Film #1 with that in Film #2. As field size is reduced, does radiographic contrast increase, decrease, or remain equal? Explain why.
6. What purpose does a leaded rubber sheet placed on the table just behind the patient’s back serve on lateral L-spine radiographs?