

Method of Determining Approximate Activity in Lungs During Aerosol Inhalation Procedure

Figure average time to accumulate usual count on posterior view of Perfusion Lung Scan, ie: 500k counts in 3 min (example).

$$\frac{500,000 \text{ counts}}{3 \text{ min.}} = 167,000 \text{ c/min}$$

Divide resulting c/min by mCi of MAA administered.

$$\frac{167,000 \text{ c/min}}{3 \text{ mCi}} = 55,500 \text{ c/min/mCi}$$

Therefore, inhale patient until reaching 55,000 c/min to place approximately 1 mCi in the patient's lungs.
(This would be 5,550 c/6sec. Or 925 c/sec.)

Note: The figures used are for example only. You must use your own time, count and activity.

Experiments in our laboratory using a Searle Pho/Gamma IV camera (small field) with a Div/Con Collimator resulted in approximately 113,000 c/min/mCi.

This is, at best, an approximation. It does not take into account size, depth or tissue attenuation. It does provide a quick and easy method to approximate lung activity deposition. However, since most Nuclear Medicine Departments lack the ability to calculate lung volume and attenuation, this method will provide, at least, an approximation of the delivered dose.