

## TIP SHEET: SMART IMAGING

- ◆ Use tidal breathing only. Deep breaths = velocity. Velocity = pharyngeal deposition.
- ◆ If you are doing upright planar images, start with the posterior. This is likely the highest count image and work down from there.
- ◆ Don't exceed the recommended dosing time too much as the extra activity can interfere with the perfusion images.
- ◆ The upright position provides greater deposition in the bases. The supine position provides greater deposition posteriorly. **Note:** Blood flow and air flow change slowly. Allow 4-5 minutes in the position you are going to use.
- ◆ Some camera detector heads have fans that bring in room air to cool the detectors. If a patient is nearby during venting it is possible for some aerosol to escape from the patient's mouth and contaminate the detectors. It is best to vent the patient in an adjoining room, if possible. If unavailable, at least 6-8 feet away from the camera is recommended.
- ◆ After aerosol administration, start imaging as soon as possible as the count rate can drop rapidly if the patient happens to be a smoker or has a pulmonary disease that causes rapid evacuation of the aerosol. In a normal patient the half-time clearance is usually 40-80 minutes. In a smoker it can decrease to as little as 10 minutes.
- ◆ Planar and SPECT imaging may be done with Medi/Nuclear's® radioaerosol delivery systems. DTPA or equivalent alternatives such as PYP, Sulphur Colloid, MIBI or MDP may be used.
- ◆ Patient breathing time is reduced by about half when a two tube radioaerosol delivery system is used. Additionally, because the medicated mist will refill the delivery tube at each breath, the resulting images will be slightly better. This is because the particles are not exposed to excessive humidity which would cause them to grow prior to inhalation.
- ◆ Remember, when using a Medi/Nuclear® aerosol device, the particles are extremely small and are usually deposited all the way to the alveoli. This being the case, the DTPA, or an equivalent alternative, will leave the alveoli via the blood stream and the kidney will be visualized.



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