# NMT Gadgetry

## Transmission Wedge for Anatomical Localization

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***An inexpensive transmission wedge constructed to accommodate a uniform flood source is used to perform transmission studies for anatomical localization. This procedure assures the technologist an accurate field of interest prior to the injection of a radiopharmaceutical in the performance of a dynamic time-function study.***

The dynamic time–function study is an important part of the imaging procedures performed in the nuclear medicine laboratory. Clinical information derived from these dynamic time–function studies is usually provided by either the first pass of the radiopharmaceutical through, or the accumulation of the radiopharmaceutical into, the region of interest.

It is therefore imperative that the regions of interest be included in the field of view prior to the dynamic time–function study. This is accomplished by performing a simple transmission study—a technique proven to be of special value in centering the heart, lung, and liver silhouettes *(1)*. Transmission images can be obtained of appropriate areas in all projections, using a scintillation camera positioned above and a uniform flood source positioned below the patient.

A transmission wedge, as we describe, facilitates patient positioning prior to performing dynamic time–function studies.

### Materials and Methods

The main body of the transmission wedge is constructed from two ¼-in. pieces of masonite, the top and bottom pieces measuring 110 cm × 60 cm. Two pieces of pine are inserted along the lateral edges and angled 2½° from the bottom edge. A pine support is also inserted between the top and bottom, 60 cm from the bottom edge. This support serves a dual role: it provides a sufficient enclosed area for the flood source and it serves as a support for the patient's weight (Fig. 1).

The transmission wedge is placed on the imaging table;

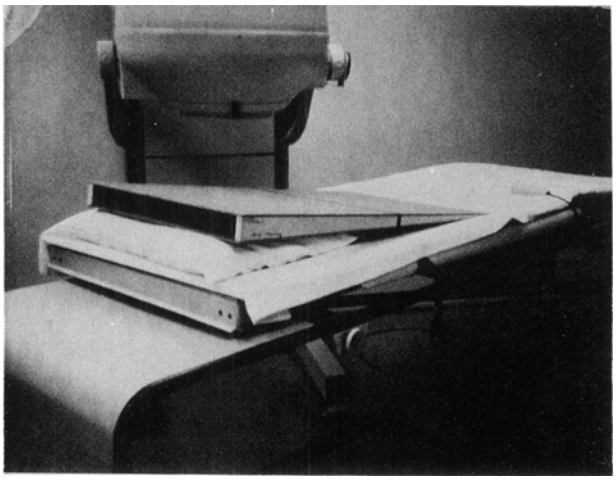

**FIG. 1.** Transmission wedge shows open end for the accommodation of flood source; support insert is shown by solid black line.

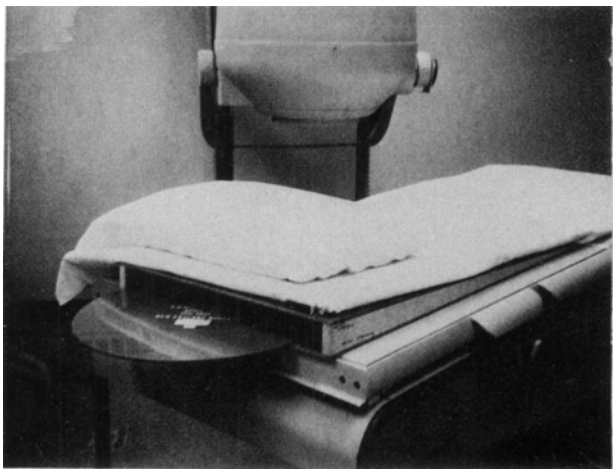

**FIG. 2.** Transmission wedge positioned for imaging with flood source in the open end.

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**FIG. 3.** Transmission image shows lung areas, cardiac silhouette, and subdiaphragmatic border.

then the patient is placed on the transmission wedge. A uniform flood source is positioned inside the open edge of the wedge (Fig. 2). Position the patient under the scintillation camera and accumulate counts until certain anatomical landmarks are evident, e.g., lung fields, cardiac silhouette, and subdiaphragmatic border (Fig. 3). When the areas of interest are included in the field of view, remove the flood source and proceed with the dynamic time–function study. The transmission wedge does not have to be removed.

## Conclusion

Using the transmission wedge to perform anatomical localization of the cardiac, pulmonary, and subdiaphragmatic regions prior to performing a dynamic time–function study has proven to be an effective tool. We find it completely eliminates the need for a repeat study because of improper patient positioning.

## References

*1.* Anger HO, McRae J: Transmission scintiphotography. *J Nucl Med* 9: 267–269, 1968