

Patient Specific Calculations - Hyperthyroid

Patient Name: _____ Admin. Date: _____

Admin. Activity: _____ mCi Thyroid Uptake data: N Y _____ %

You are encouraged to use the following automated patient release calculation form that takes into consideration both the type of care (i.e. Normal, Limited or Extended) and the number of contact hours this patient will require: <http://www.mpcphysics.com/documents/MPCI-131PatientReleaseCalculationsRev4.706-24-09.xls> Print a copy for your records.

The calculations noted below are derived from the NRC in NUREG-1556, Vol. 9 Rev. 2. They are acceptable but simplistic in their assumptions that may or may not fit your individual patient.

The calculations noted below are based on the following patient specific assumptions with regards to effective half-life and justification of an Occupancy Factor of 0.25.

- ASSUMPTIONS:
- Patient can maintain prudent distance from others for at least the first two (2) days.
 - Patient can sleep alone in a room for at least first night.
 - Patient will not travel by mass transit or airplane for first day.
 - Patient will not travel for prolonged car trip for two (2) days.
 - Patient will have sole use of bathroom for two (2) days.
 - Patient will drink plenty of fluids for two (2) days.

- If thyroid uptake is measured, i.e. thyroid uptake = 45% then use 0.45:

$$D(\infty) \text{ mrem} = \{ (9.026)(\text{Thyroid Uptake}) + 1.622 \} (\text{_____ mCi})$$

$$= \text{_____ mrem}$$

(Annual Limit for Patient Release = 500 mrem)

- If the NRC assumed thyroid uptake of 80% (0.8) is used:

$$D(\infty) \text{ mrem} = (8.837)(\text{_____ mCi}) \quad (\text{Ref. NUREG-1556 Vol.9, Rev. 2, Appendix U})$$

$$= \text{_____ mrem}$$

(Annual Limit for Patient Release = 500 mrem)