

Radiotherapy Guideline for Nasopharyngeal Cancer

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本版與上一版的差異：

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檢閱後無異動	

RT indication

- Definitive treatment: T1-4, N0-3b, M0
 - Radiotherapy alone: T1N0M0
 - CCRT ± adjuvant chemotherapy: T2-T4, N1-3b
- Palliative treatment : M1 status for relief of symptoms

Simulation and immobilization

- CT-based simulation (preferring 1.5-3 mm slice thickness with contrast) is required.
- Patients may be simulated with a supine position
- Immobilization devices
 - Thermoplastic mask with headrest

Field design and treatment volume

- **3D-CRT/IMRT/VMAT/Tomotherapy/Radixact treatment planning; IGRT is preferred**
 - Gross tumor volume (GTV, PTV-H): nasopharyngeal tumor and enlarged lymph nodes
 - Clinical target volume one (CTV-1, PTV-M): depend on the tumor invasion; whole nasopharyngeal cavity, lower third of sphenoid sinus, post. fourth of maxillary sinus, bilateral parapharyngeal space, bilateral upper neck lymph nodes, and/or involved nodal areas
 - Clinical target volume two (CTV-2, PTV-L): bilateral lower neck region and bilateral supraclavicular region

Dose prescriptions

- GTV (PTV-H): 70 to 76 Gy in 2.0 to 2.2 Gy per fraction
- CTV-1 (PTV-M): 55 to 63 Gy in 1.8 to 2.0 Gy per fraction

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- CTV-2 (PTV-L): 48 to 52 Gy in 1.8 to 2.0 Gy per fraction

Constraints for organ at risk

- Spinal cord: $D_{\max} < 50$ Gy
- Chiasm/optic nerves: $D_{\max} < 50$ Gy
- Brainstem: $D_{\max} < 60$ Gy
- Eyes (globe): $D_{\text{mean}} < 35$ Gy, $D_{\max} < 54$ Gy
- Lens: $D_{\max} < 7$ Gy
- Inner ear/cochlea: $D_{\max} < 45$ Gy
- Parotid gland(s): $D_{\text{mean}} < 30$ Gy
- Larynx: $D_{\text{mean}} < 44$ Gy
- TMJ: $D_{\max} < 70$ Gy

Reference

- NCCN Practice Guidelines in Oncology, 2025
- Perez and Brady's : Principles and Practice of Radiation Oncology, 7th ed, 2018
- Eric K. Hansen, Handbook of Evidence-Based Radiation Oncology