

Nasopharyngeal Cancer radiotherapy

PATIENT'S GUIDE

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Contents

- What is NPC and what are its risk factors?
- What are the goals and benefits of radiation therapy for NPC?
- What are the different types of radiation therapy for NPC, such as external beam radiation therapy (EBRT), intensity-modulated radiation therapy (IMRT), or brachytherapy?
- How is radiation therapy planned and delivered for NPC patients?
- What are the possible side effects and complications of radiation therapy for NPC, and how can they be prevented or managed?
- What are the follow-up and survivorship care for NPC patients after radiation therapy?

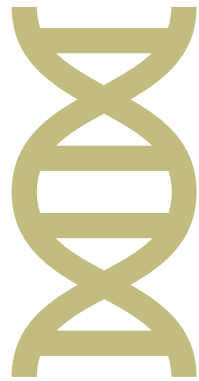
NPC epidemiology

Endemic in
Singapore

- peaks after
30 years old

- More males
> females

Risk factors



Genetics



Diet

Diagnosis



NP BIOPSY



EBV TESTING

Staging

Examination

MRI

Systemic staging

EBV DNA

T					
X	0	1	2	3	4
Not assessable	EBV-positive cervical lymph node, WITHOUT identified tumor.	Naso- or oropharynx or nasal cavity with sparing of parapharyngeal spaces	Parapharyngeal extension, adjacent soft tissue involvement (medial pterygoid, lateral pterygoid, prevertebral muscles)	Bony structures (skull base, cervical vertebra) and/or paranasal sinuses.	Intracranial extension, cranial nerve, hypopharynx, orbit, extensive soft tissue involvement (beyond the lateral surface of the lateral pterygoid muscle, parotid gland).
N					
X	0	1	2	3	
Not assessable.	No metastasis to lymph nodes	Unilateral cervical, unilateral or bilateral retropharyngeal lymph nodes, above the caudal border of cricoid cartilage; \leq than 6 cm	Bilateral metastasis in lymph node(s), 6 cm or less in greatest dimension, above the caudal border of the cricoid cartilage	>6 cm and/or below the caudal border of the cricoid cartilage (regardless of laterality).	
M					
0			1		
No distant metastasis			Distant metastasis		

Other tests



Dental clearance



Audiometry



Eye testing

Treatment

Stage 1: RT alone

Stage 2: RT +/- chemo

Stage 3: chemoRT, +/- induction chemo

Stage 4: chemo first, then local RT +/- mets SBRT

Chemo: weekly or 3 weekly

Proton or Xray therapy

TRADITIONALLY IMRT/VMAT

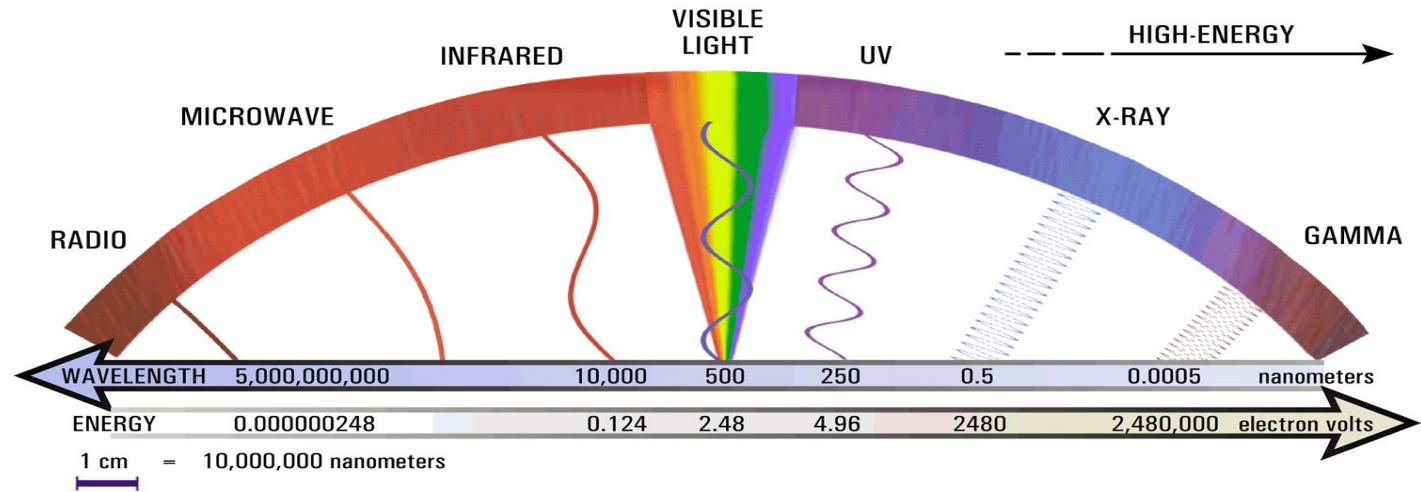
PROTONS = SAME CURE RATE

Protons maybe less mucositis, better long term salivary f(x) *

*Beddok et al 2019 Cancer Radio
AW Lee et al 2018 Radiother Onco

What is radiotherapy

High energy XR



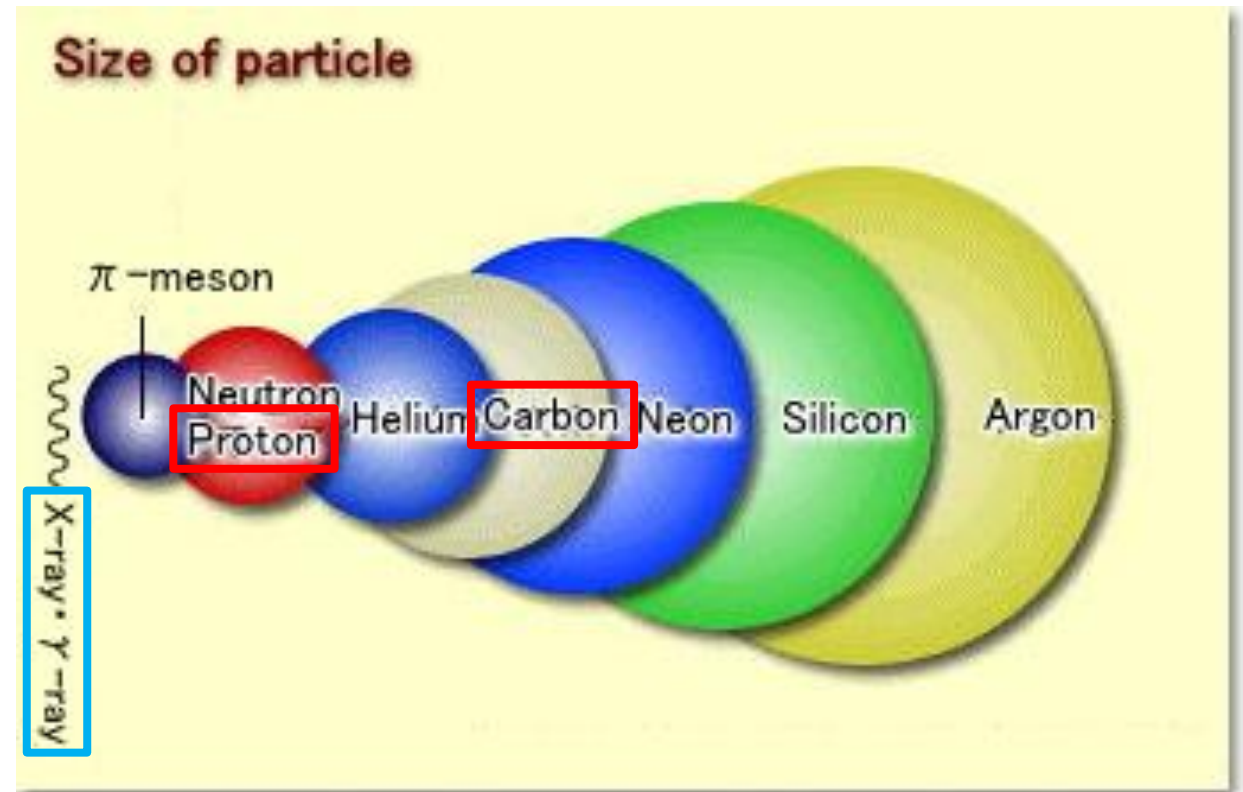
WHAT IS PARTICLE THERAPY?

Conventional radiotherapy

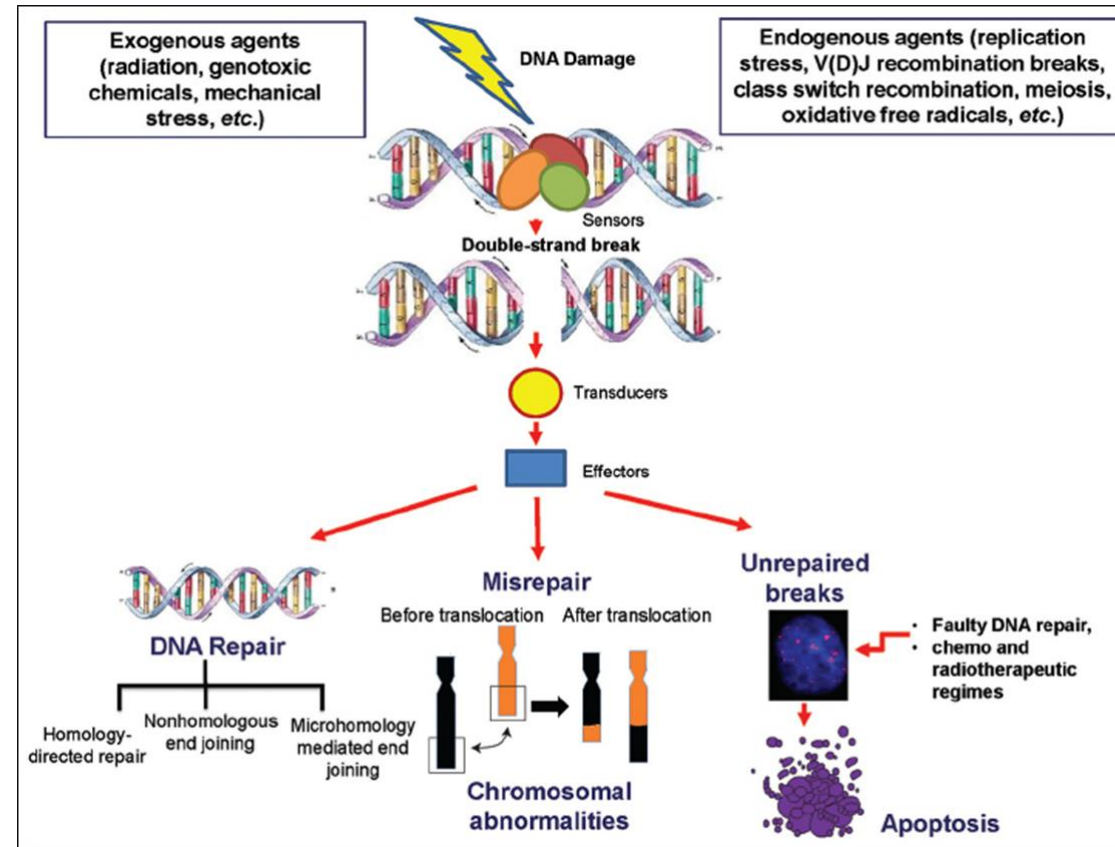
- X-rays, γ -rays
 - Waves of light
 - Electric charge (-)
 - Mass (-)

Particle therapy

- Protons, carbon ions
 - Particles of ion
 - Electric charge (+)
 - Mass (+)



How Radiotherapy Works



Radiotherapy process

Consultation, Child life therapy and orientation

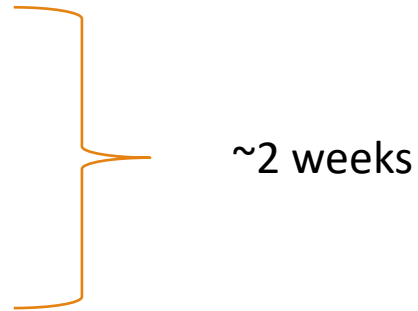
Sedation

Immobilization

Simulation

Planning

Delivery



RT doses

70Gy/33# for gross disease, 50-60Gy for microscopic disease over 6-7 weeks

~ stage 1: primary disease and upper neck nodes to be treated

~nodes involved: bilateral neck included

~if induction chemo done: reduce RT dose to 64 Gy after shrinkage

Schedule

1st week | 2nd week | 3rd week | 4th week | 5th week | 6th week | 7th week



5 times a week

Immobilization and simulation

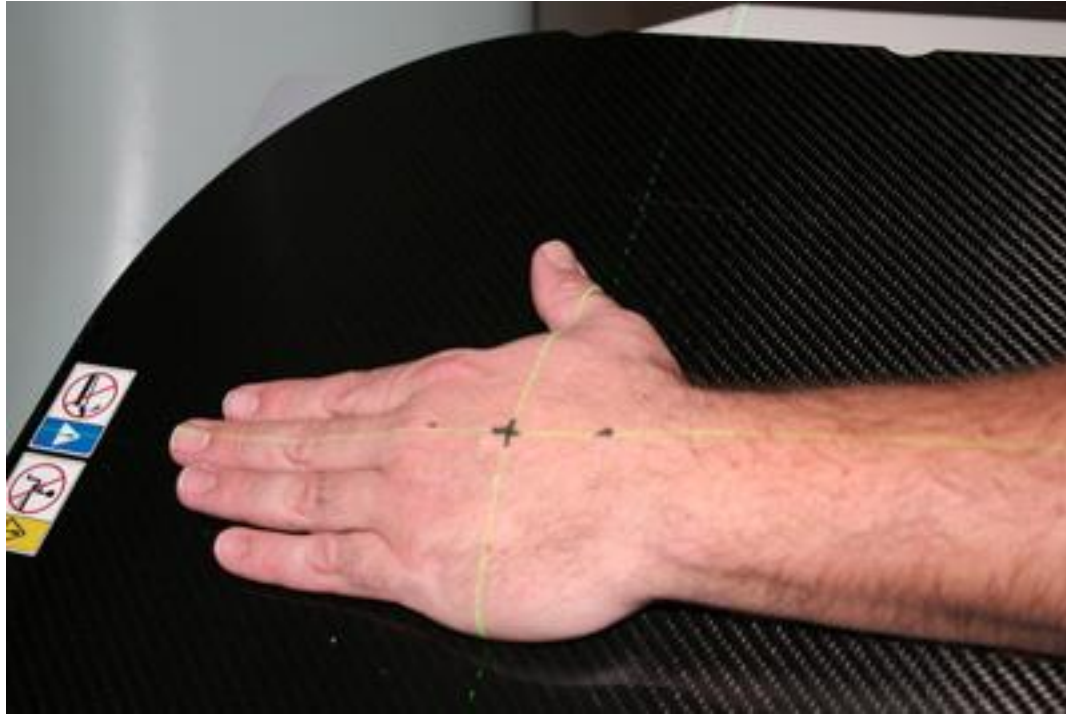


Source: www.qfix.com



www.civcort.com

Tattoo



www.oncolink.org



Community.macmillian.org.uk

Treatment room



Varian probeam

Acute side effects

Skin irritation

Dry mouth

Taste changes

Pain on swallowing

Thrush

How to cope with acute side effects

- mouth wash
- pain killers
- dietary supplements
- skin protection creams/spray

Diet

Avoid spicy food

Eat softer foods with soup/gravy

Eat high calorie foods to maintain weight

Everything else in healthy moderation

After radiotherapy side effects



- Taste will slowly resume



- Skin and ulcers will heal



- Salivary function will slowly return

Long term side effects

Dental

Jawbone

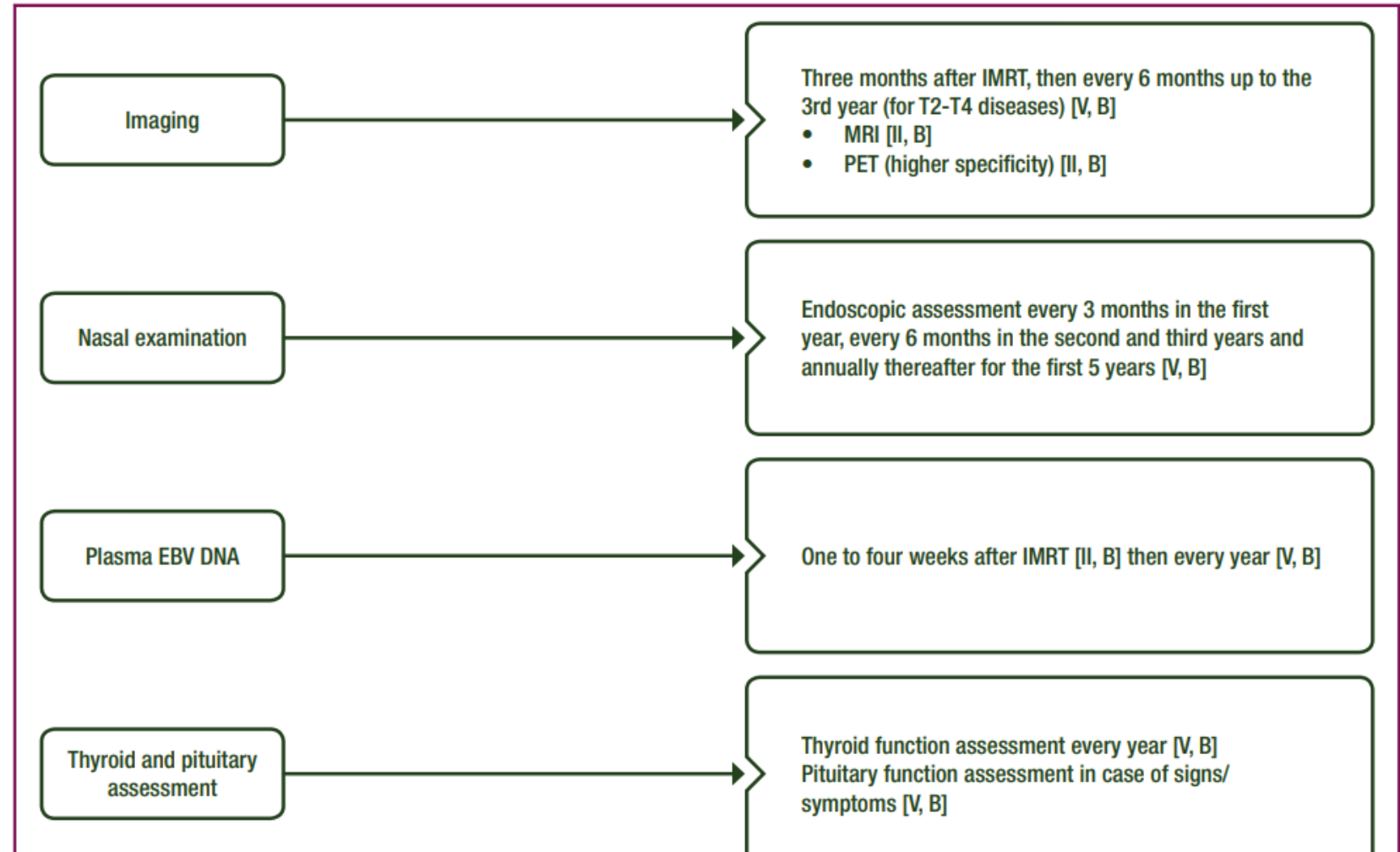
Skin

Muscles

Thyroid
function

Secondary
malignancies

Follow up



Reference: ESMO NPC guidelines 2020 Annals of Onco



Questions

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www.ro-se.org

www.advancedmedicine.sg