

MANAGING FUNCTION AND QUALITY OF LIFE IN HEAD AND NECK CANCER SURVIVORS

Michael D. Stubblefield, M.D.

Medical Director for Cancer Rehabilitation – Kessler Institute for Rehabilitation
National Medical Director for ReVital Cancer Rehabilitation – Select Medical
Clinical Professor, Department of PM&R – Rutgers New Jersey Medical School
American Board of Physical Medicine & Rehabilitation
American Board of Electrodiagnostic Medicine
American Board of Internal Medicine



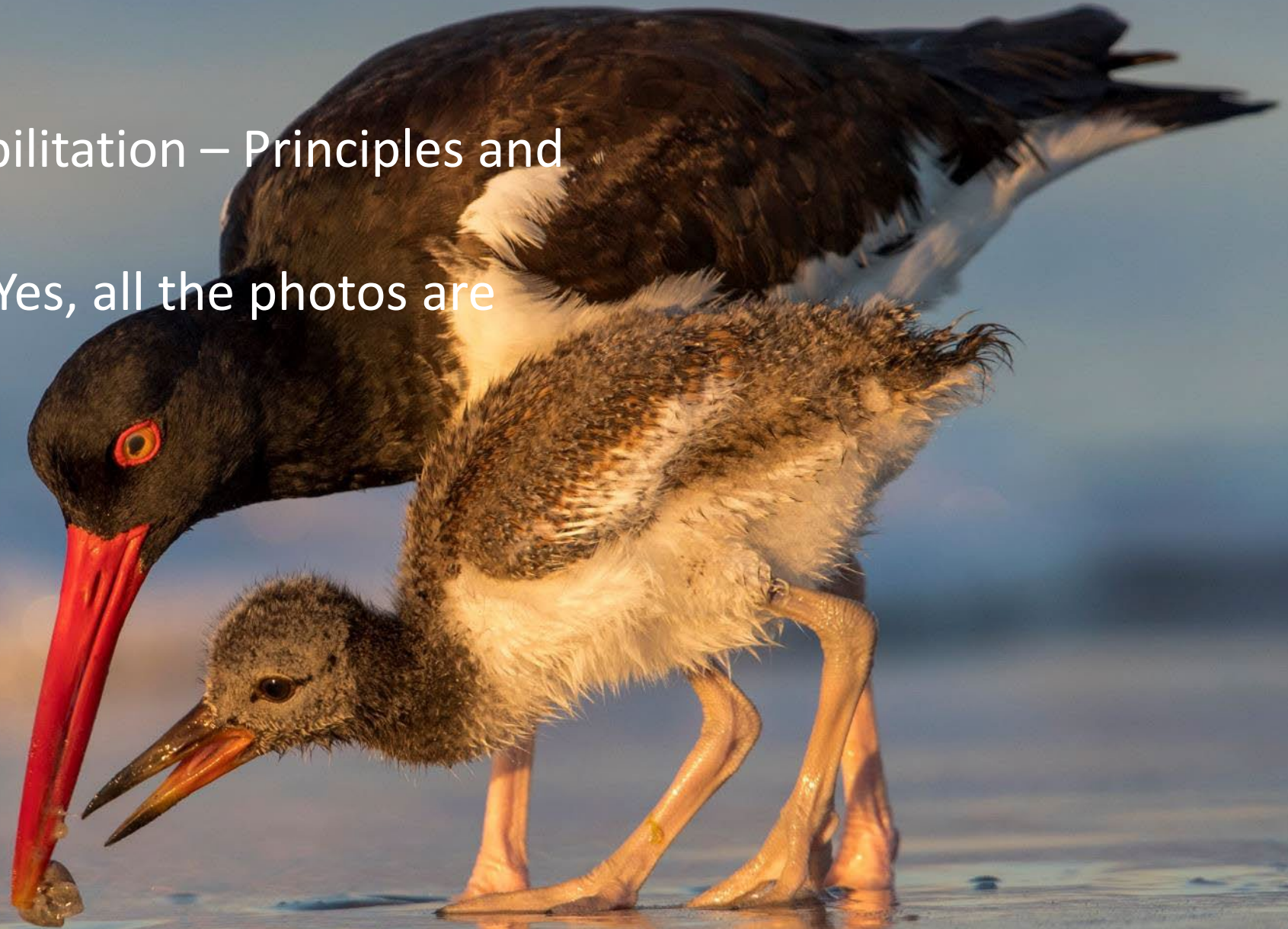
ReVital[™]
Cancer Rehabilitation

Kessler[®]
INSTITUTE FOR REHABILITATION

Living well beyond cancer[™]

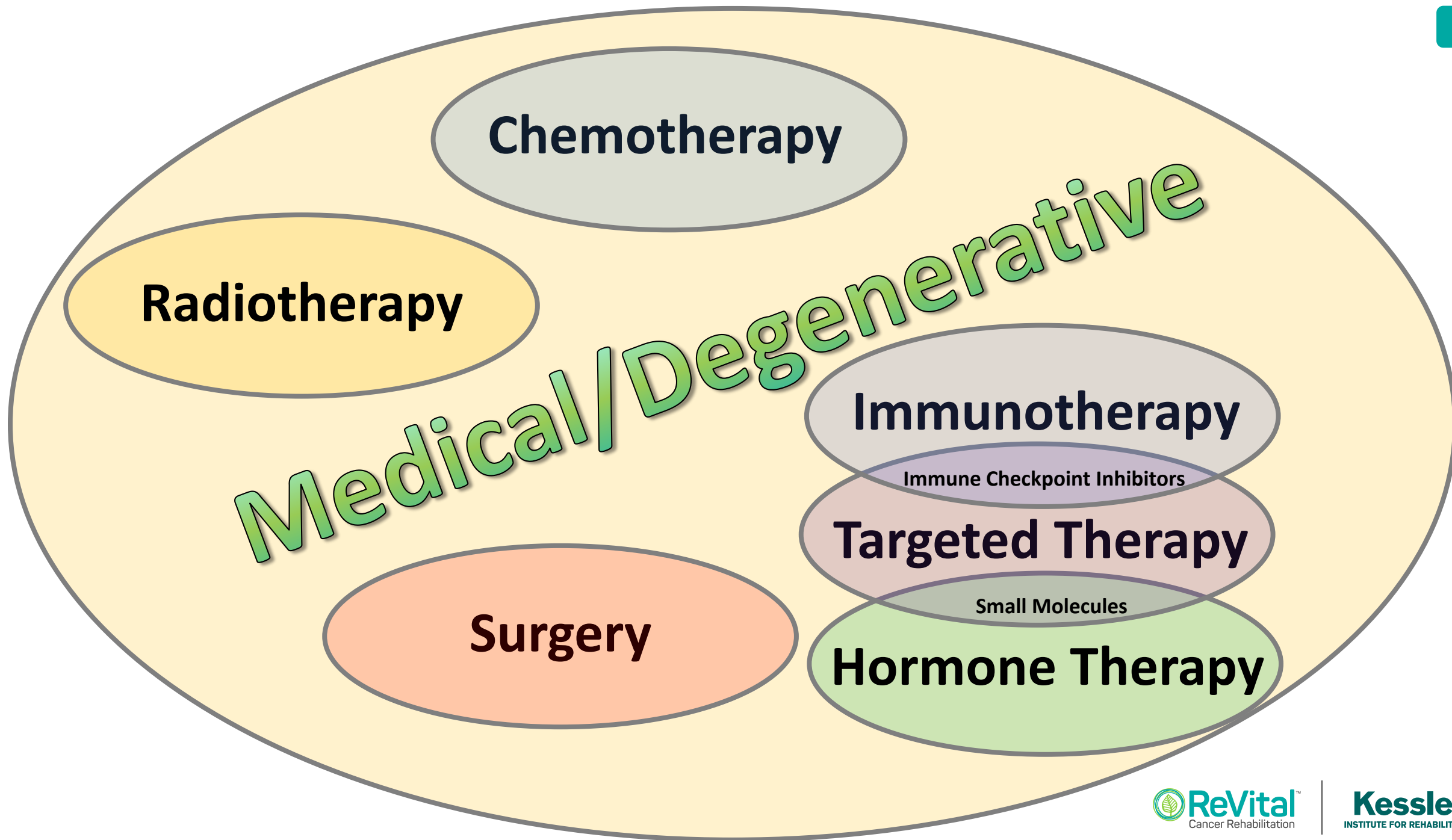
DISCLOSURES

- Editor: Cancer Rehabilitation – Principles and Practice
- Avid photographer (Yes, all the photos are mine!)

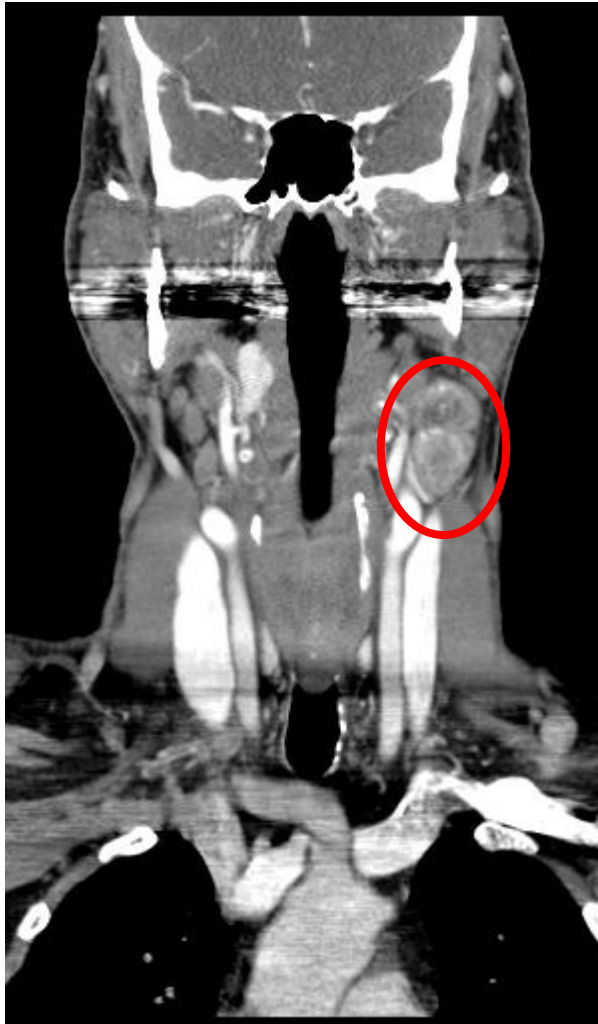


OBJECTIVES

- Describe the issues that compromise function and quality of life in HNC survivors.
- Understand how these issues can affect you and your loved ones.
- Empower you to obtain a proper diagnosis.
- Develop a plan to comprehensively manage the issues you may face.

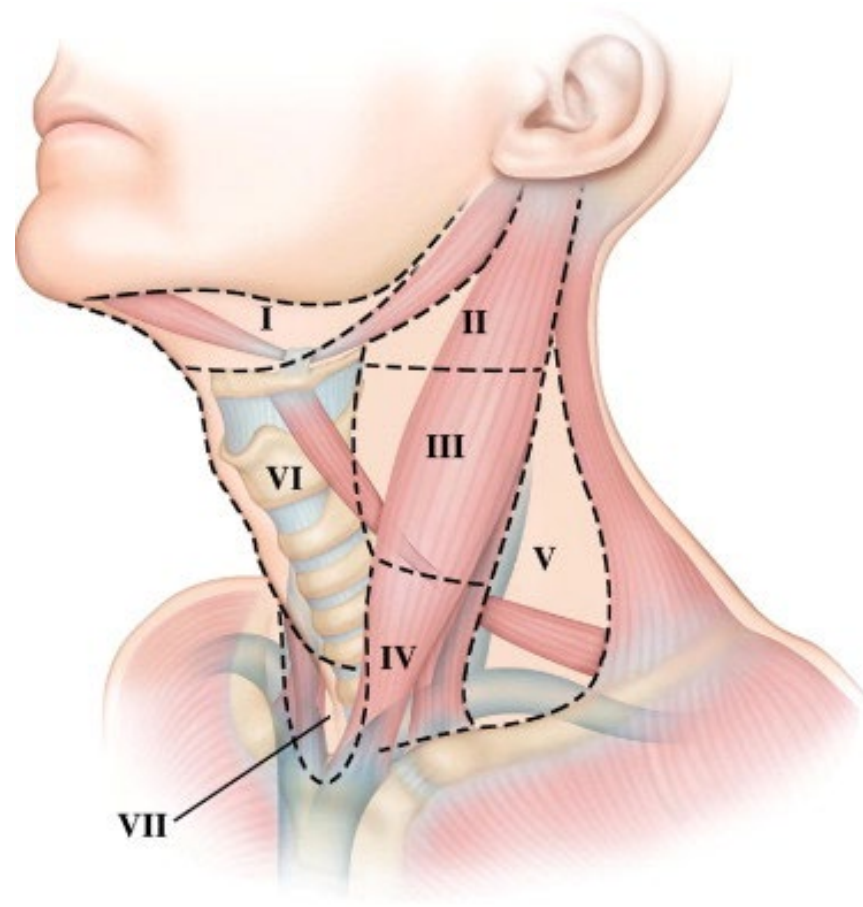


TREATMENT OF HEAD AND NECK CANCER



- Surgery
- Systemic Therapy
- Radiation Therapy

TYPES OF NECK DISSECTION

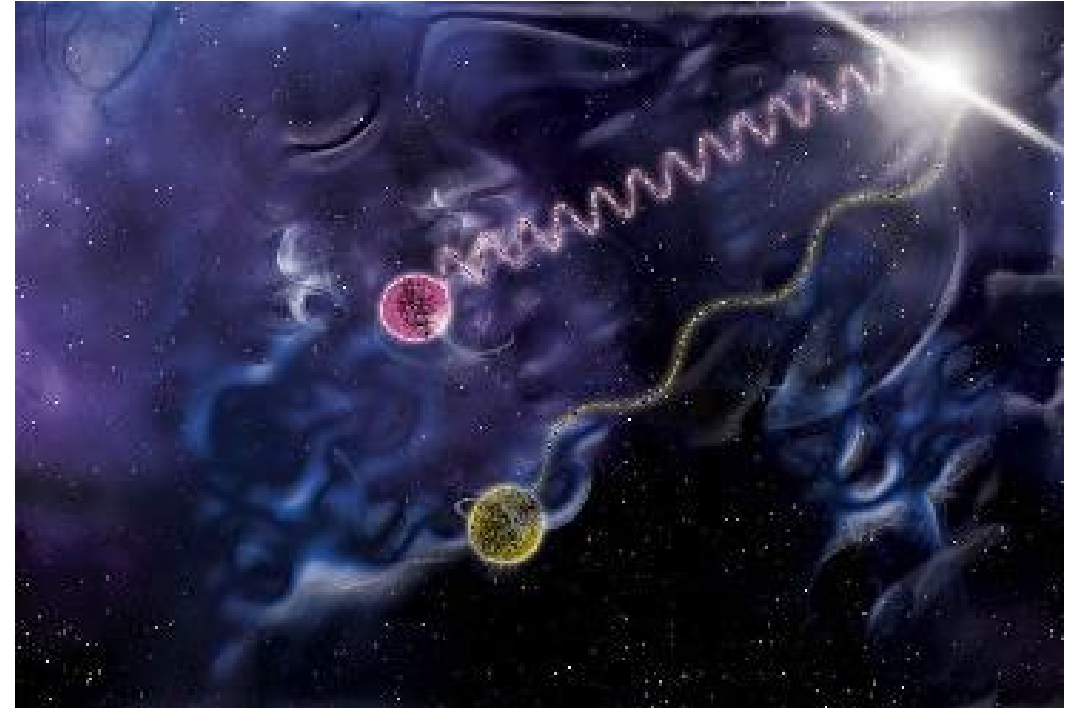


PRINCIPLES OF RADIATION THERAPY

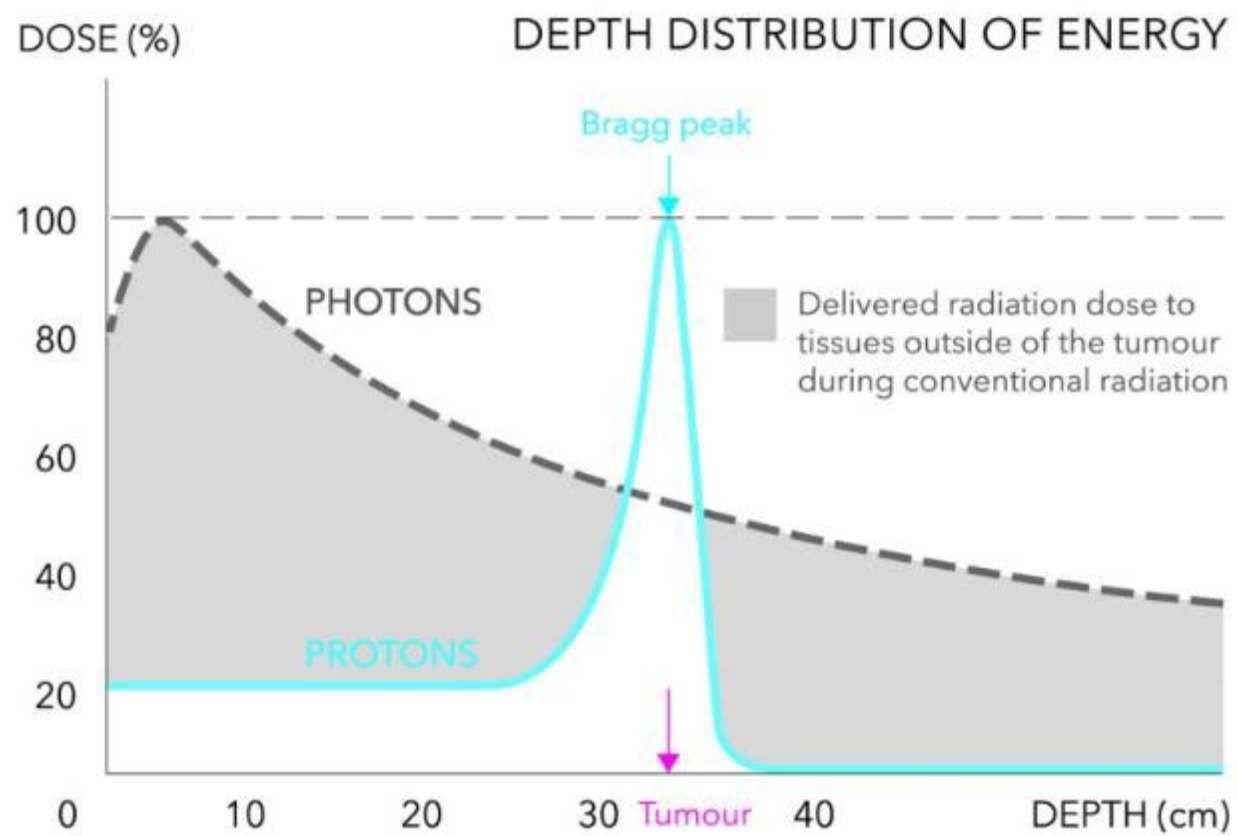


PRINCIPLES OF RADIATION THERAPY

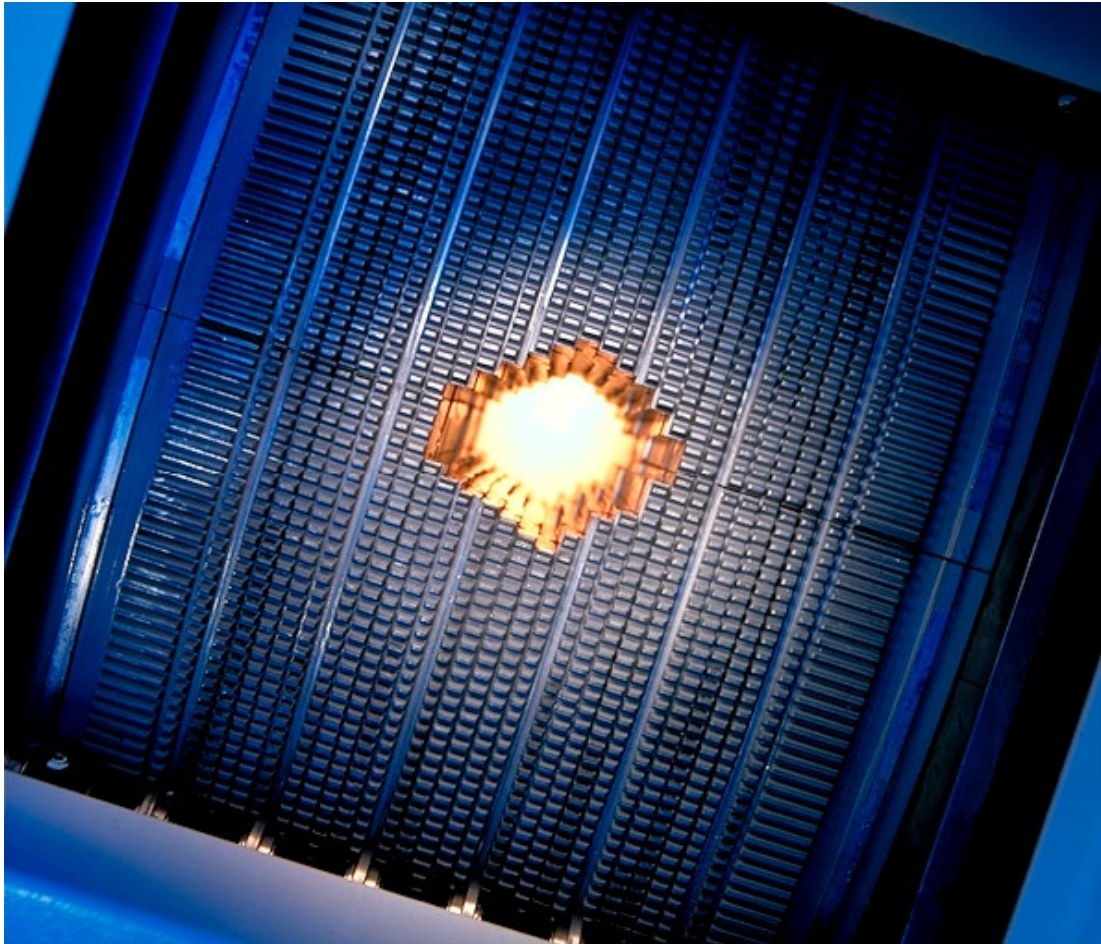
- Uses energy to cause DNA damage
 - Photons or Protons
- Alone or combined with chemotherapy and/or surgery
- Side effects
 - Short term (days – weeks)
 - Long term (months – years)



PHOTONS vs. PROTONS

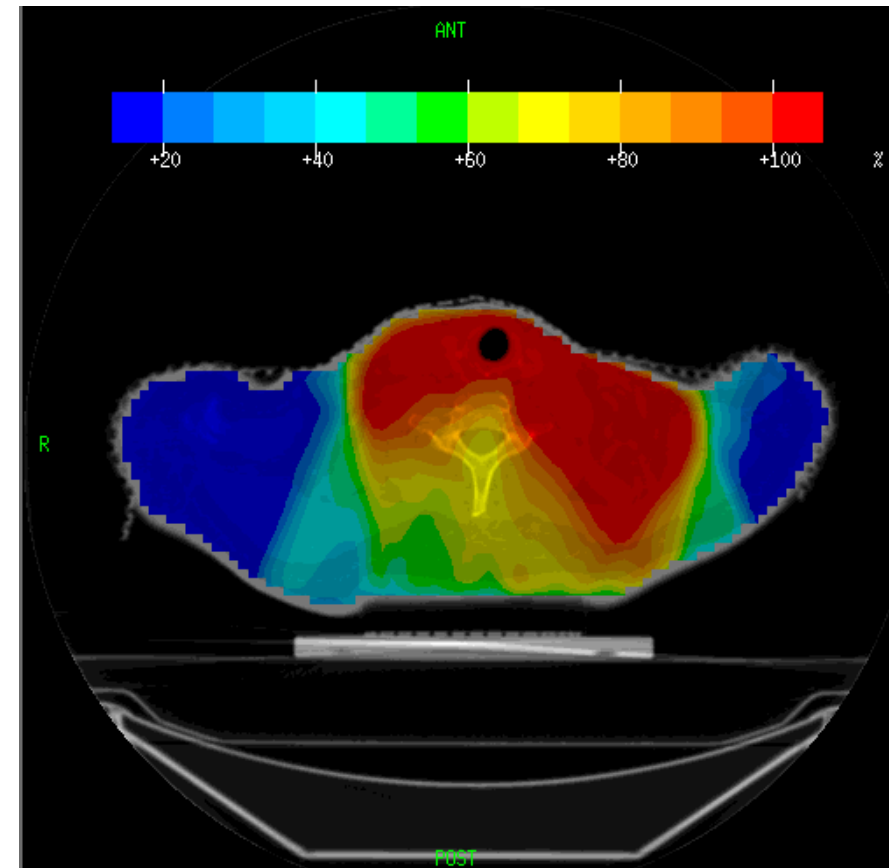
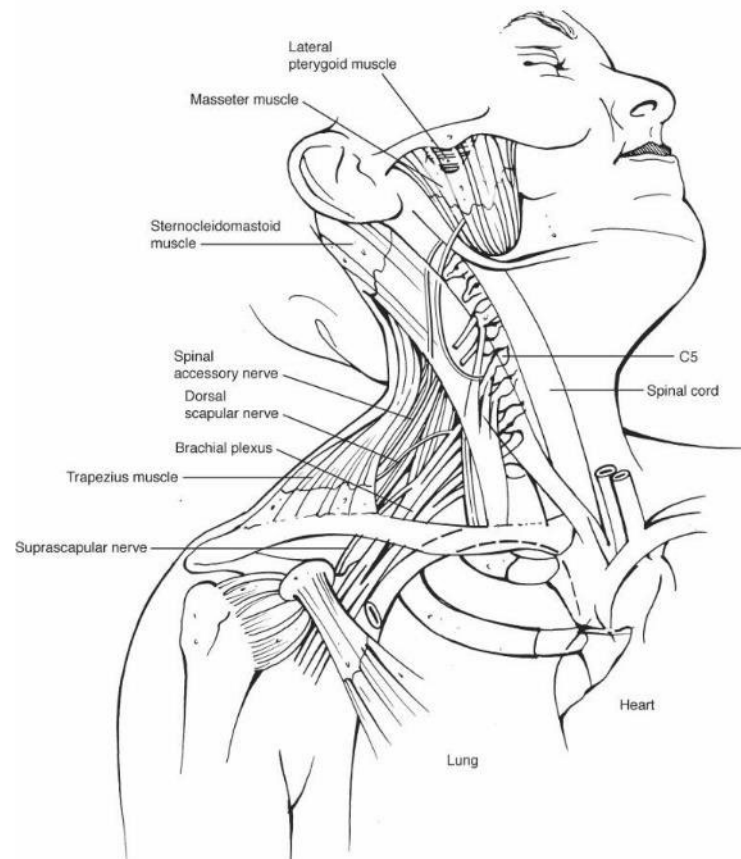


INTENSITY MODULATED RADIATION THERAPY (IMRT)

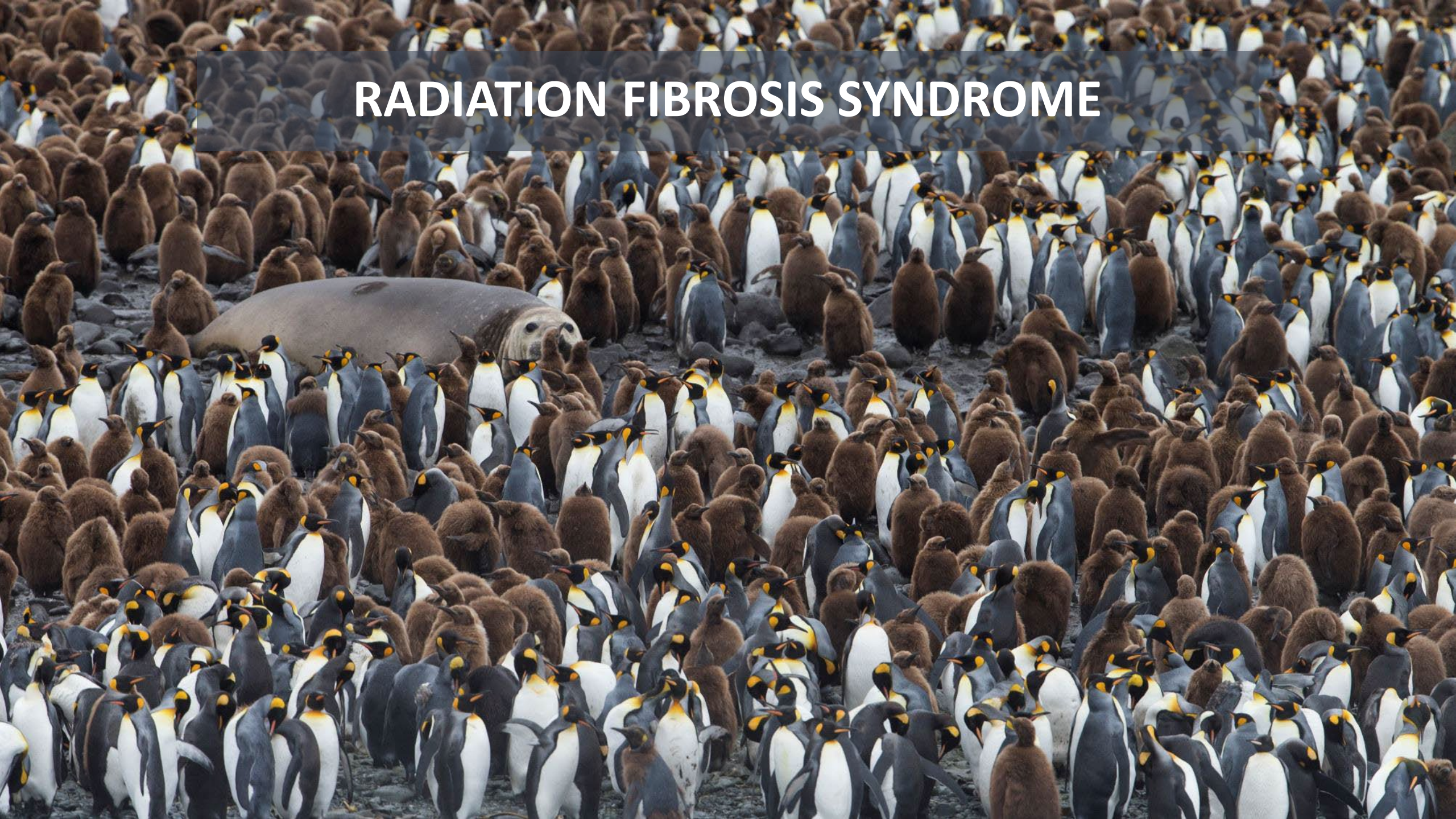


The intensity of radiation beams is modulated with a system of movable leaves called a multi-leaf collimator which conforms to the shape of the tumor and block out unwanted radiation.

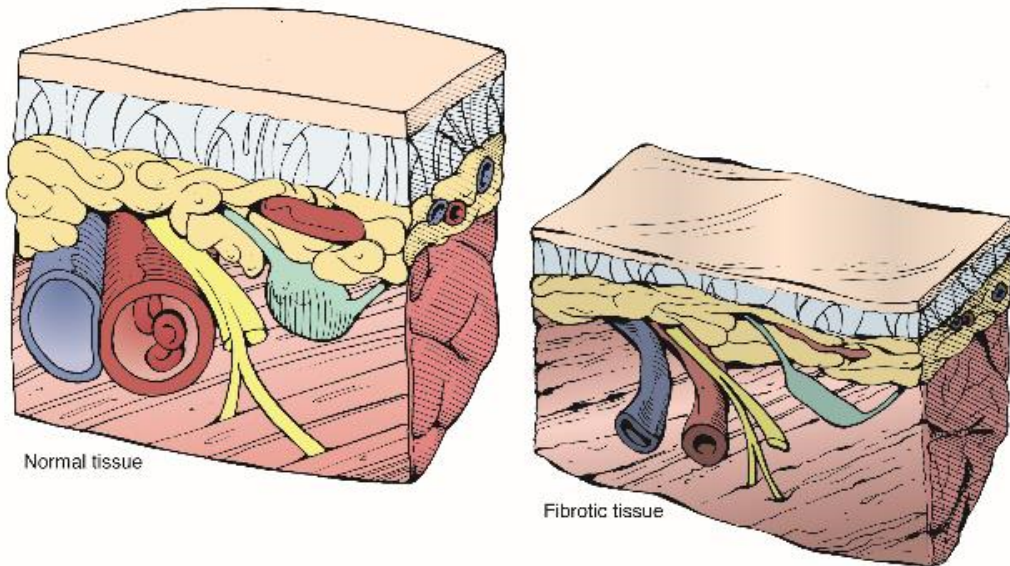
IMRT ISODOSE CURVES



RADIATION FIBROSIS SYNDROME



RADIATION FIBROSIS / RADIATION FIBROSIS SYNDROME



“**Radiation fibrosis (RF)** describes the insidious pathologic fibrotic tissue sclerosis that often occurs in response to radiation exposure.”

“The term **Radiation Fibrosis Syndrome (RFS)** describes the myriad clinical manifestations of progressive fibrotic tissue sclerosis that result from radiation treatment.”

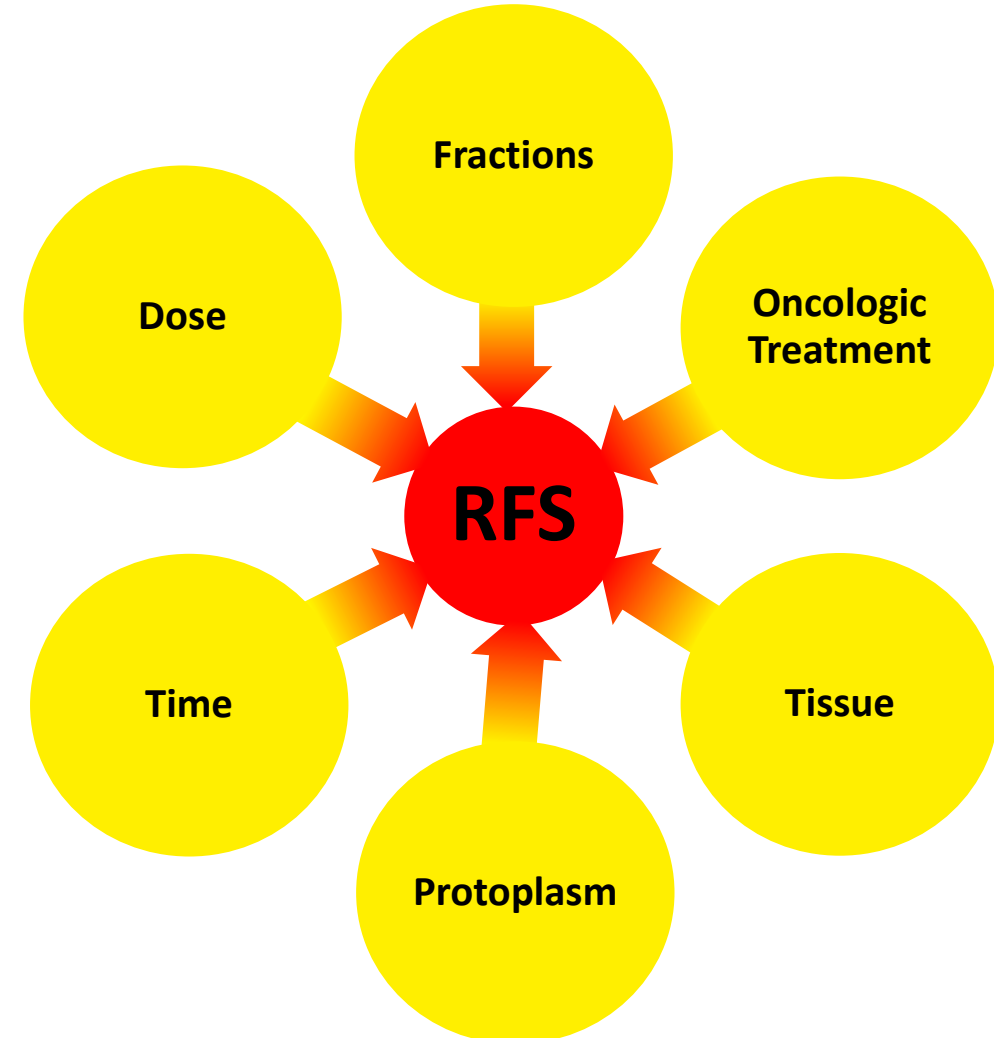
RADIATION FIBROSIS RISK FACTORS

- **Treatment-related Factors**

- Radiotherapy
 - Total dose
 - Dose per fraction
 - Volume of radiation
 - Time from radiation
 - Tissue type
 - Prior radiation
 - Local surgery
 - Neurotoxic chemotherapy

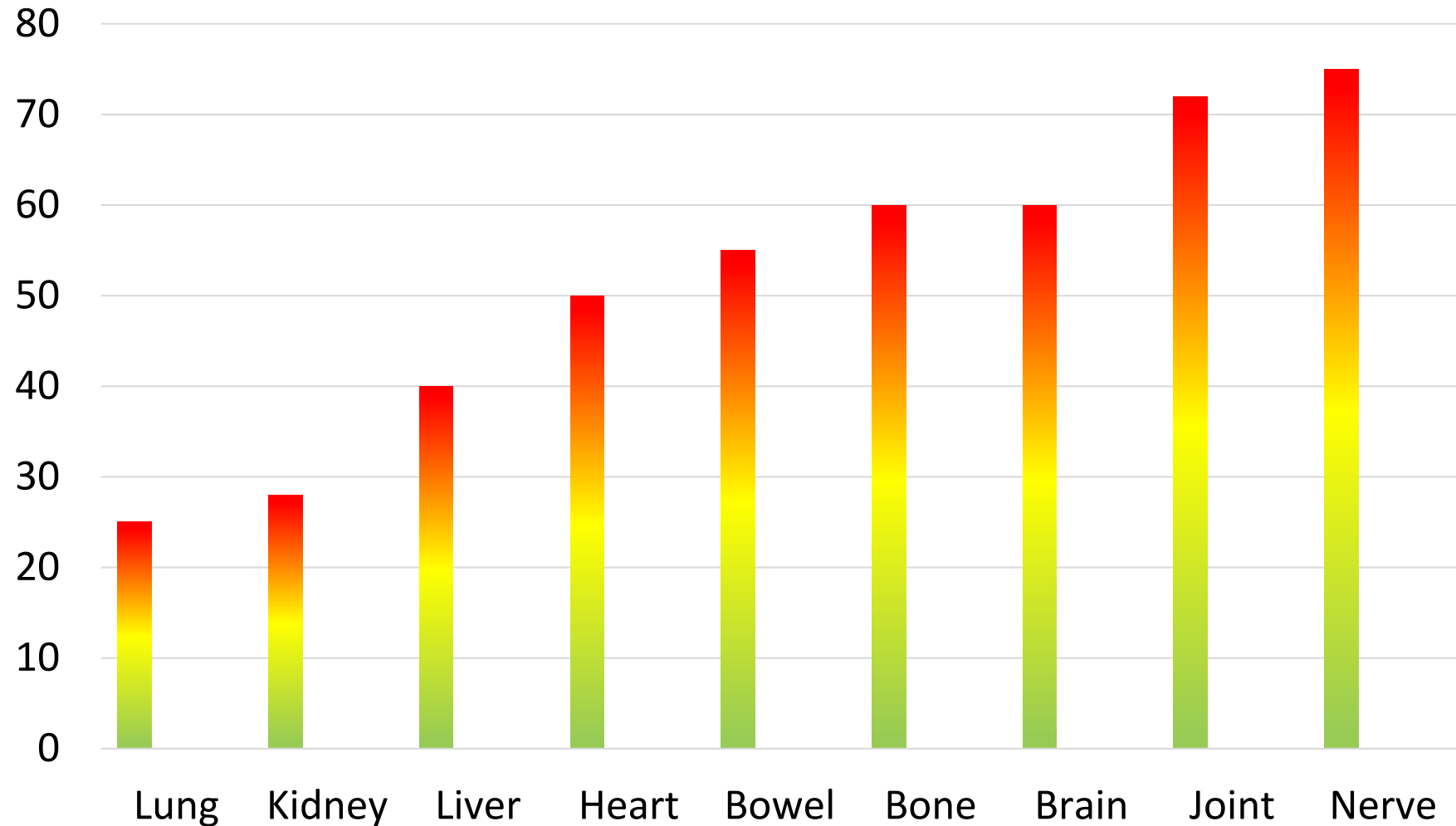
- **Patient-related Factors (“protoplasm”)**

- Physiological status
- Comorbidities
 - Cardiovascular disease
 - Collagen vascular disease
 - Degenerative disease
- Pre-existing PNS dysfunction



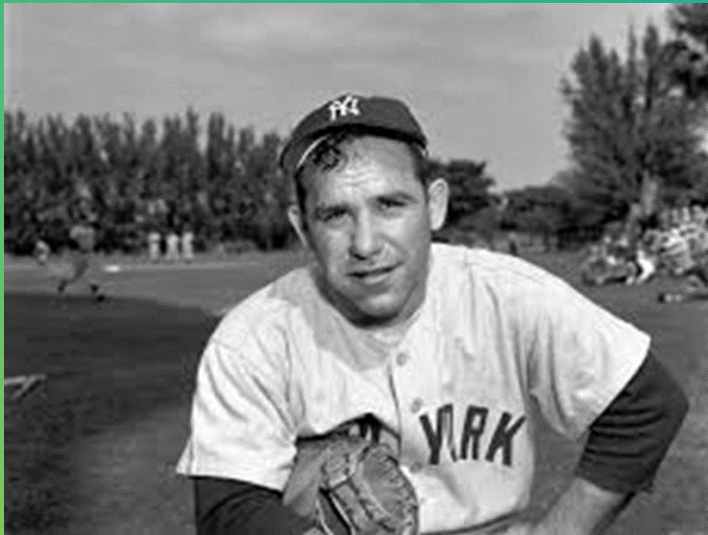
TISSUE SENSITIVITY TO RADIATION

Total Dose (Gy)
to cause 50%
complication
risk at 5 years

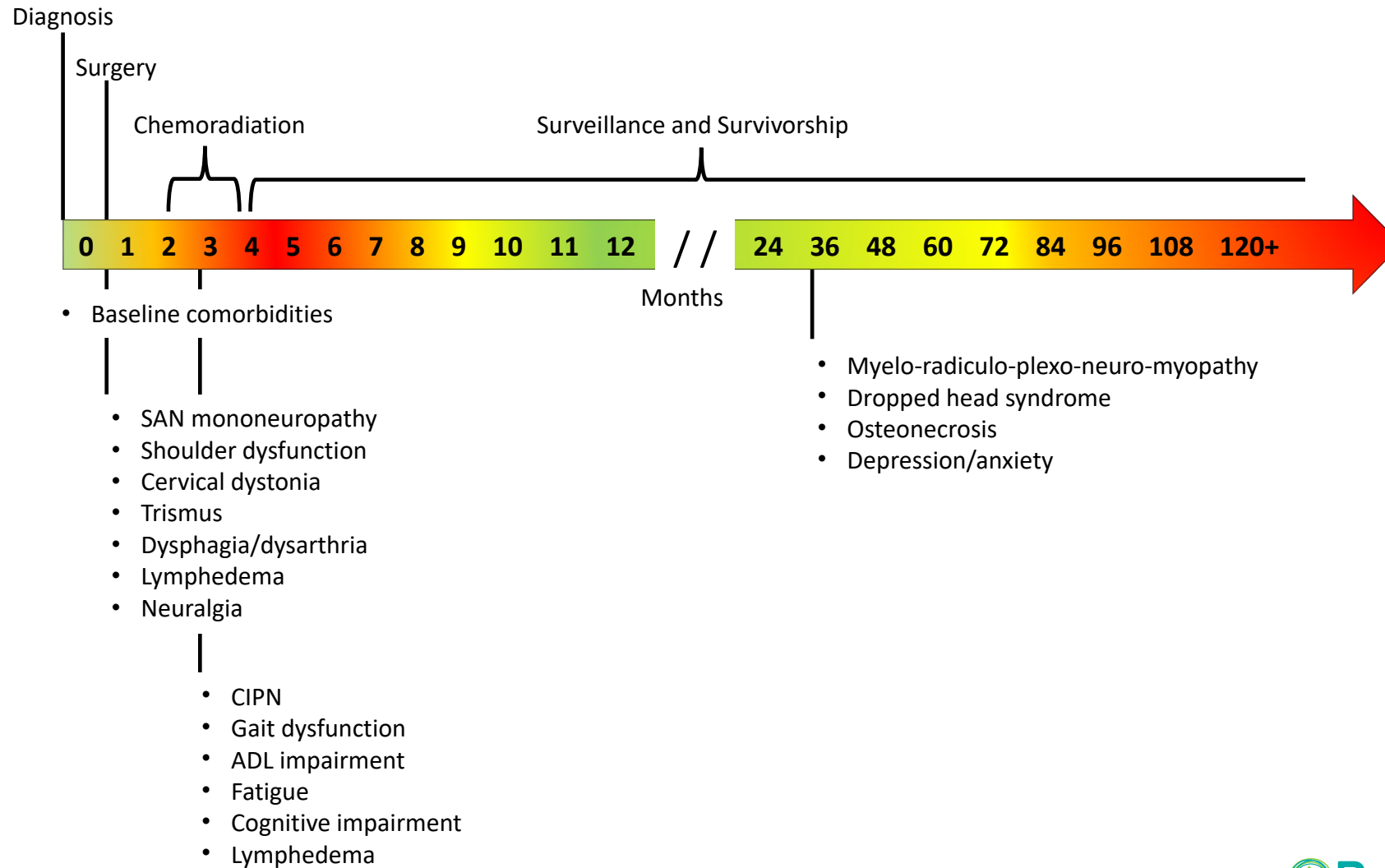


**“It’s tough to make predictions,
especially about the future.”**

Yogi Berra

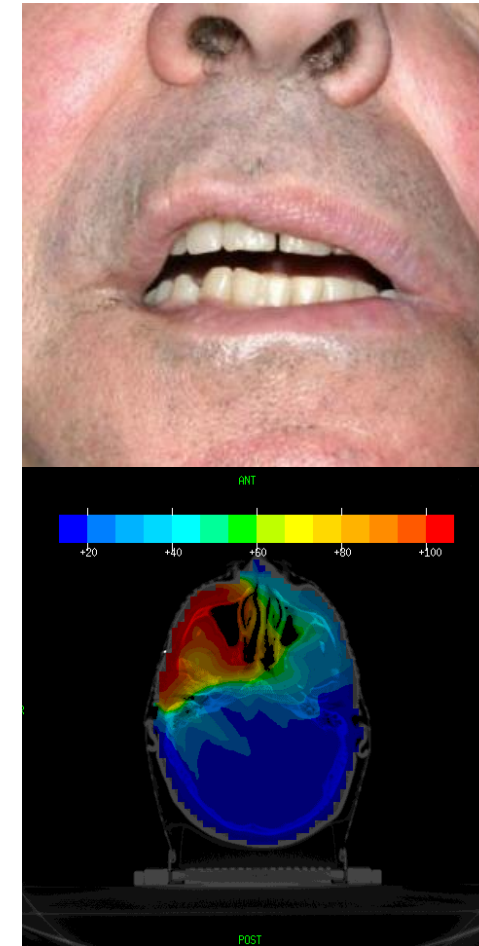


PROSPECTIVE REHABILITATION (PROhab®) IN HNC



TRISMUS

- Trismus is defined as the inability to fully open the mouth
- $\leq 35\text{mm}$ cut-off point for defining trismus has a sensitivity of 0.71 and a specificity of 0.98¹
- Patients with trismus may have difficulty with eating, speaking, maintaining oral hygiene, being surveyed for cancer recurrence, engaging in oral intimacy, or a variety of other important aspects of daily life
- The incidence of trismus may be as high as 28% in HNC patients 1 year after treatment²



¹Dijkstra PU, Huisman PM, Roodenburg JL. Criteria for trismus in head and neck oncology. Int J Oral Maxillofac Surg 2006;35:337-42.

²Pauli N, Johnson J, Finizia C, Andrell P. The incidence of trismus and long-term impact on health-related quality of life in patients with head and neck cancer. Acta Oncol 2013;52:1137-45.

Stubblefield MD. Radiation Fibrosis Syndrome. In: Stubblefield MD and O'Dell MW, editors. Cancer Rehabilitation: Principles and Practice. New York, NY: Demos Medical Publishing; 2009, 723-45.

CERVICAL DYSTONIA



BOTULINUM TOXIN INJECTION

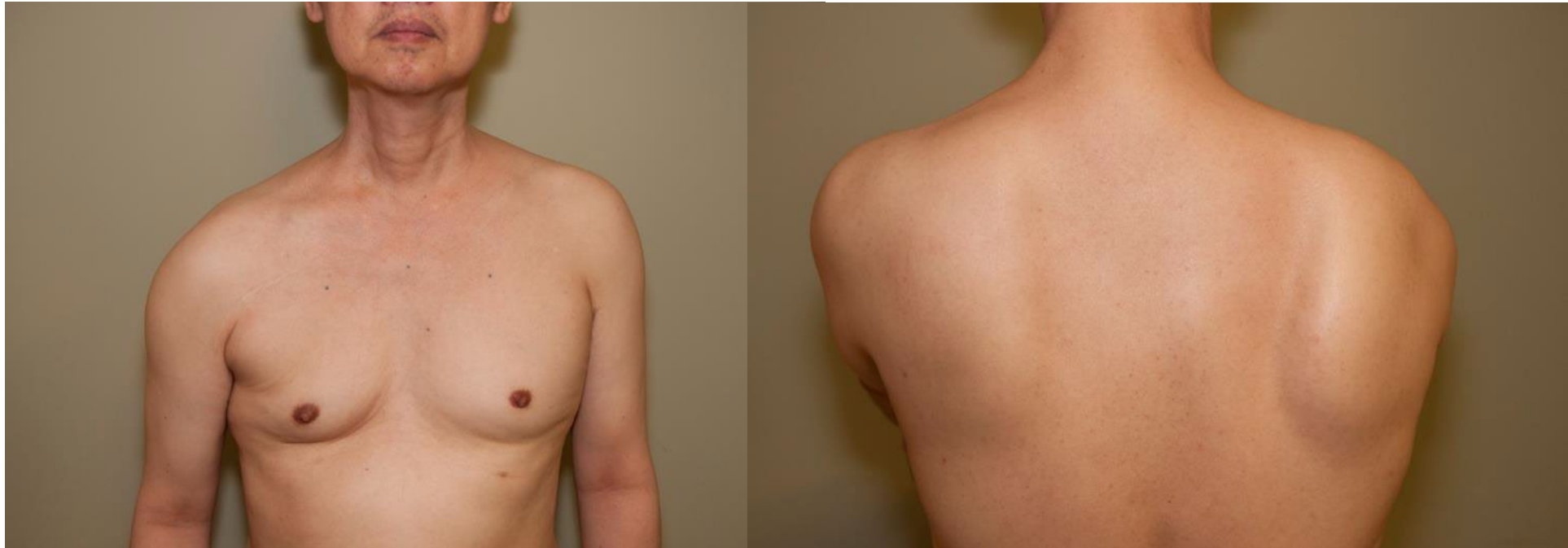


Stubblefield, M. D., Levine, A., Custodio, C. M., & Fitzpatrick, T. (2008). The role of botulinum toxin type A in the radiation fibrosis syndrome: a preliminary report. *Archives of physical medicine and rehabilitation*, 89(3), 417-421.

DROPPED HEAD SYNDROME



SHOULDER DYSFUNCTION



A 57 year old man with largely right sided nasopharyngeal carcinoma diagnosed in 2002 and treated with 5-Fu and IMRT 7020 cGy to the primary disease and neck now with right sided cervical dystonia and mild to moderate upper trunk brachial plexopathy.

LYMPHEDEMA

- Often underdiagnosed and neglected
- Can be external (face, neck, chest) or internally (larynx, pharynx, oral cavity)
- Has adverse cosmetic and psychosocial consequences (infections, breathing or swallowing difficulties, etc.)
- Diagnosed on clinical grounds (external) or by endoscopic evaluation (internal)
- 75.3% of HNC patients have secondary lymphedema
 - 9.8% isolated internal lymphedema
 - 39.4% isolated external lymphedema
 - 50.8% combined internal and external lymphedema



Deng J, Ridner SH, Murphy BA. Lymphedema in patients with head and neck cancer. *Oncol Nurs Forum* 2011;38:E1-E10.

Deng J, Ridner SH, Dietrich MS, et al. Prevalence of secondary lymphedema in patients with head and neck cancer. *J Pain Symptom Manage* 2012;43:244-52.





JENNIFER MAXIMOS HRDINA, OT, MSOTR/L

THE ROLE OF OCCUPATIONAL THERAPY

OCCUPATIONAL THERAPY

- What is Occupational Therapy (OT)?
 - As defined by the American Occupational Therapy Association
 - The practice of occupational therapy means the therapeutic use of everyday life occupations with persons, groups, or populations (clients) to support occupational performance and participation.
 - Occupations are dressing, bathing, gardening, yardwork, golfing, birdwatching and photography

HOW CAN OT HELP WITH RECOVERY?

- Lymphedema Treatment
- Manual Therapy
- Range of Motion
- Strength
- Coordination
- Posture
- Improve overall Quality of Life

LYMPHEDEMA TREATMENT

- 4 components of effective Complete Decongestive Therapy
 - Exercise
 - Skin Care
 - Manual Therapy
 - Compression
- When to seek Lymphedema Treatment

EFFECTIVE EVALUATION AND TREATMENT

- Manual Therapy
 - Soft Tissue
 - Myofascial
- Range of Motion
 - Upper Extremity Range of Motion
 - Neck
 - Shoulder blades
- Strength
 - Shoulder
 - Grip Strength

EFFECTIVE EVALUATION AND TREATMENT

- Coordination
- Posture
- Assessment of daily activities and quality of life



BRITTANY BOYNTON, M.S.,CCC-SLP
THE ROLE OF SPEECH LANGUAGE PATHOLOGY

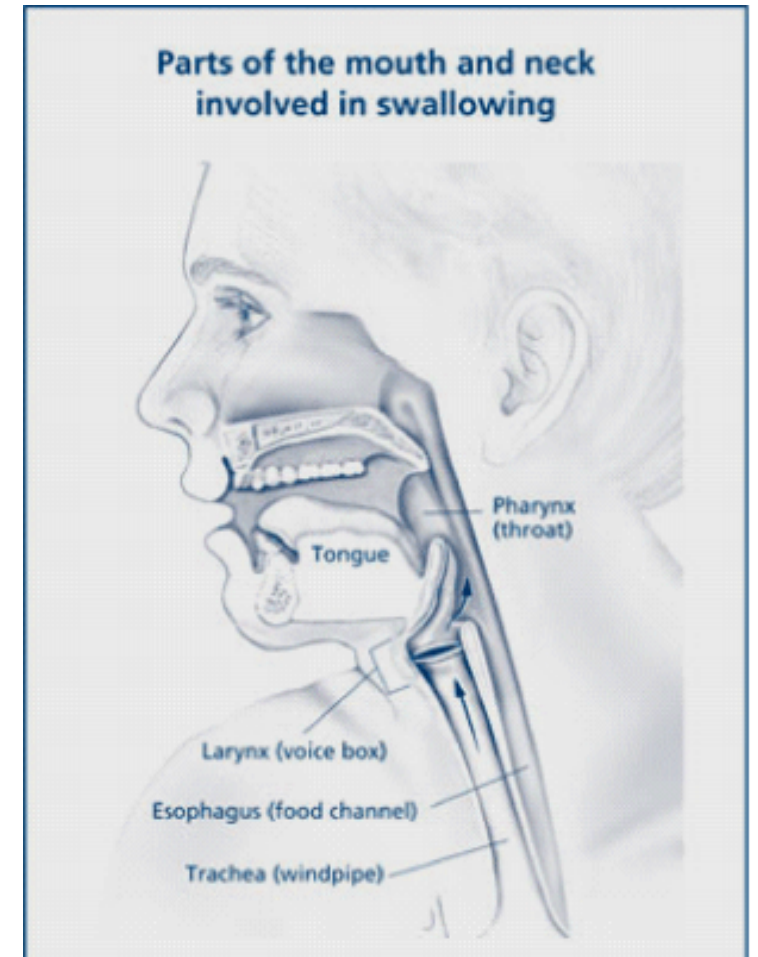
REHABILITATION

Role of the Speech-Language Pathologist

- Assess swallowing function – clinical swallow evaluation, instrumental swallow assessment (e.g. MBSS, FEES)
- Swallowing therapy
- Oral-motor exercises
- Compensatory strategy training for speech and swallowing deficits
- Myofascial Release for radiation fibrosis/scarring
- Use of speech generating devices
- Education regarding aspiration risks and how to manage risk

SWALLOWING IMPAIRMENT, OR “DYSPHAGIA”

- Difficulty swallowing due to damaged structures resulting in weakness and reduced range of motion
- Aspiration
- Poor swallowing efficiency
- Dry mouth
- Pain during chewing/swallowing
- Malnutrition/dehydration



DYSPHAGIA MANAGEMENT

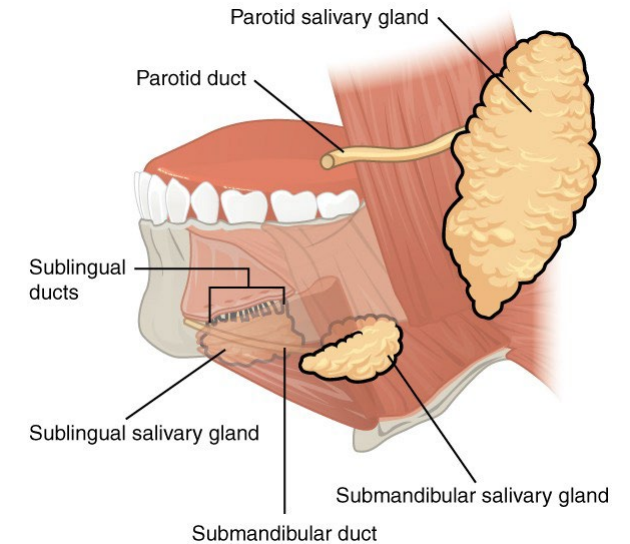
- Oral Phase:
 - Oral motor exercises
 - Modify textures
- Pharyngeal Phase:
 - Swallowing exercises
 - Modify diet level
 - Use compensatory strategies or maneuvers

HOW TO OPTIMIZE FUNCTION

- Follow up with SLP regularly
- Get a yearly swallow test
- Do home exercises regularly
- Comply with the recommended diet consistency and use trained strategies
- Use good oral hygiene
- Use safe swallowing strategies/precautions
- Monitor for sign/symptoms of aspiration and report to SLP/physician

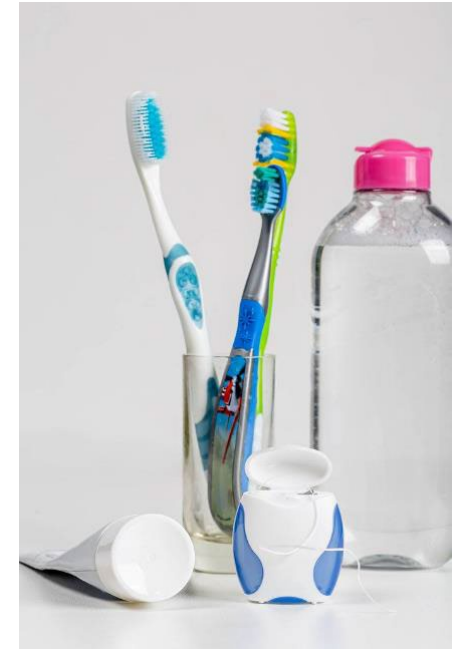
DRY MOUTH, OR “XEROSTOMIA”

- One of the most common complications during/after RT
- Irreparable damage to salivary glands, which are included in the radiation field
- Difficulty eating dry or hard foods
- Mastication and manipulation of food may be uncomfortable
- Taste changes
- Difficulty with speech
- Increased risk of infection and dental compromise



MANAGEMENT OF DRY MOUTH

- Prevention:
 - Cytoprotectants: can protect normal tissue against the toxic effect of radiotherapy and/or chemotherapy
 - Salivary gland-sparing RT
 - Salivary gland transfer
- Treatment:
 - Stringent oral hygiene
 - Use of fluoride agents and antimicrobial
 - Saliva substitutes
 - agents to stimulate saliva production



HOW TO OPTIMIZE FUNCTION

- Ask your radiation oncologist if you are a candidate for preventative techniques
- Work with SLP or dental oncologist
- Trial and error: try out different dry mouth products to determine which one works best for you
- Keep water with you
- Use saliva substitutes/stimulants
- Keep saliva substitutes handy
- Good oral hygiene
- Modify food textures

SPEECH/VOICE IMPAIRMENTS

Dysarthria: speech disorder caused by muscle weakness

- Difficulty moving tongue, lips or jaw
- “Slurred” or “mumbled” speech
- Speaking too slow/too fast
- Nasality

Dysphonia: voice disorder caused by vocal cord dysfunction with multiple underlying causes

- Changes in vocal quality
- Difficulty controlling pitch
- Difficulty controlling volume



MANAGEMENT OF SPEECH/VOICE IMPAIRMENTS

SPEECH:

- Oral-motor exercises
- Compensatory strategy training with SLP

VOICE:

- Voice exercises to improve vocal cord function
- Work on breath support
- Education on vocal hygiene

AUGMENTATIVE/ALTERNATIVE COMMUNICATION



HOW TO OPTIMIZE FUNCTION

EXERCISE:

- Tongue, lip and voice exercises

COMPENSATE:

- Use speech strategies
- Use speech generating devices or apps

Tobii-Dynavox



CONCLUSION

- Recognize that radiation is “the gift that keeps on giving.”
- Stay in front of expected issues.
- Remember that radiation can contribute to medical issues in unexpected ways.
- Cultivate your team– MD, PT, OT, SLP, others.
- The goal is not cure, but optimization – **advocate to live your best life!**



Michael D. Stubblefield, M.D.



(201) 396-7651



mstubblefield@selectmedical.com



Kessler Institute for Rehabilitation
1199 Pleasant Valley Way
West Orange, NY 07052



www.revitalcancerrehab.com