INTERPRETING FOR RADIATION ONCOLOGY ENCOUNTERS

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WHAT IS RADIATION ONCOLOGY

- The clinical and scientific discipline that uses ionizing radiation to treat patients with cancer and other diseases.
- The aim of Radiation therapy is to deliver a precisely measured dose of radiation to a defined tumor volume with minimal damage to the surrounding healthy tissue. (1)
- Goals:
  - Palliative
  - Curative

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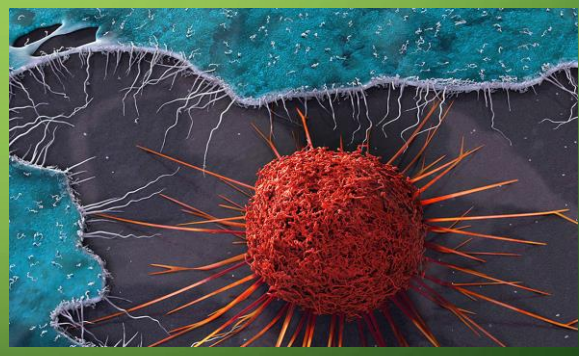
WHAT TYPES OF DISEASES ARE TREATED WITH RADIATION?

- Cancer
- Some non-cancerous tumors
- Other diseases like:
  - Arterio Venous Malformations
  - Trigeminal Neuralgia
  - Keloids
  - Dupuytren's Contracture
  - Heterotopic Ossification Prophylaxis
  - Some neurological conditions
  - Hemophilic Arthropathy



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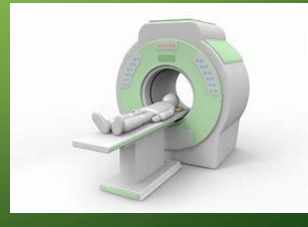
GENERAL PROCESS FOR RADIATION TREATMENT

- Diagnosis
- Tumor board meeting or other multidisciplinary meeting (provides recommendations)
- Consultation with Medical Oncology, Surgical Oncologists
- **Consultation with Radiation Oncologist**
- If proceeding with Radiation:
  - Other imaging Studies as necessary (PET, MRI)
  - Informed Consent
  - CT simulation (CT SIM)
  - Treatment planning
  - Treatment (everyday!)



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MULTIDISCIPLINARY CANCER APPROACH

- Doctors:
  - Radiation Oncologists
  - Medical Oncologists
  - Surgeons
  - Palliative care
  - Residents and Fellows from each specialty
- Advanced practice providers:
  - NPs
  - PAs
- Nurses: Provider RNs, Procedure RNs, Triage RNs, Machine RNs

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MULTIDISCIPLINARY TEAM APPROACH

- Radiation Therapists
- Dosimetrists
- Medical Physicists and residents
- Social Worker
- Dietitians
- Medical Office Assistants
- Certified Medical Interpreters
- CSA's, Schedulers
- Clinical Research Coordinators

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RADIATION ONCOLOGY SPECIALTIES

- Gastrointestinal
- Genitourinary
- Breast
- Gynecologic
- Lung
- Head and Neck
- CNS
- Pediatrics
- Lymphoma
- Sarcoma

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TYPE OF PATIENT VISITS AND ESTIMATED TIMES

- **FU** Follow-Up/global/post global (usually quick visit; 30 minutes)
  - Patient has finished radiation treatment but still has follow-up visits (can be weeks or months after finishing treatment)
- **EDU** Education Visit (up to 1hr)
- **CON** Consult or **NTC** New to clinic (at least an hour)
  - Usually the first patient visit with the radiation oncologist
  - Consents are usually signed during this visit
- **NPFU** New Patient Follow-Up Visit (at least an hour)
  - Patient has previously met with radiation oncologist but has not started treatment
  - Consents are usually signed during this visit
- **OTV** On Treatment Visit (quick visit; 10-15 minutes)
  - Weekly visit with radiation oncologist
- **CT Sim** CT Simulation (45 min up to an hour)

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A LITTLE MORE ABOUT SIMULATIONS

- Medical team creates a customized plan to pinpoint the target area where radiation beams will be focused

–CT and MRI scanning that may sometimes involve contrast dye

–Some cases may require therapists to make a custom mold to help the patient stay in a certain position (Bean bags, frame, masks, bite blocks, plates etc)

–Marks, permanent dots or "tattoos", and photographs are also part of the simulation process

–**ABC (Active Breathing Coordinator)** machine is used for immobilization of anatomies affected by respiratory motion, such as the breast and lung

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TREATMENT PROCESS

Treatment:

– Interpreters usually requested for the first treatment visit

– Radiation therapists take X-ray images of the area on the body to be treated, which makes the first treatment visit the longest treatment session

– Radiation therapist gives patient treatment calendar and explains treatment procedures on the first treatment visit

Weekly Physician/Nurse Visits (OTV)

–Patient sees nurse and radiation oncologist in order to evaluate progress, evaluate side effects and ask any questions about treatment

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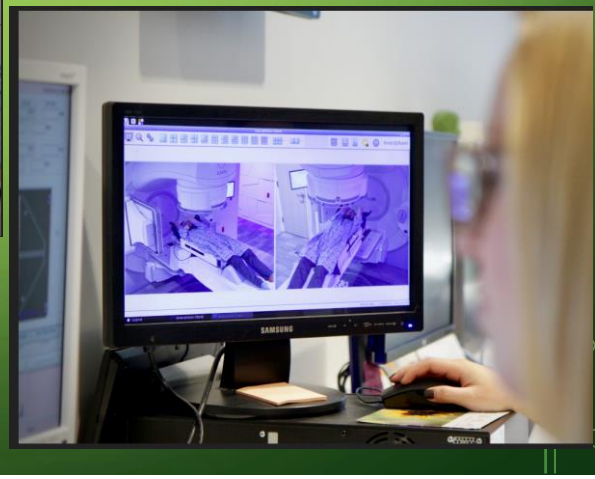

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RADIATION MACHINES

- LINAC : Versa, True Beams, Vital Beams
- Cyber knife
- Gamma knife
- Xstrahl
- Gamma POD
- AIRO CT (*)
- CT scanner (*)

(*) Not radiation machines but are used for treatment plans and follow up.

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CT SCANNER

AIRO SCANNER

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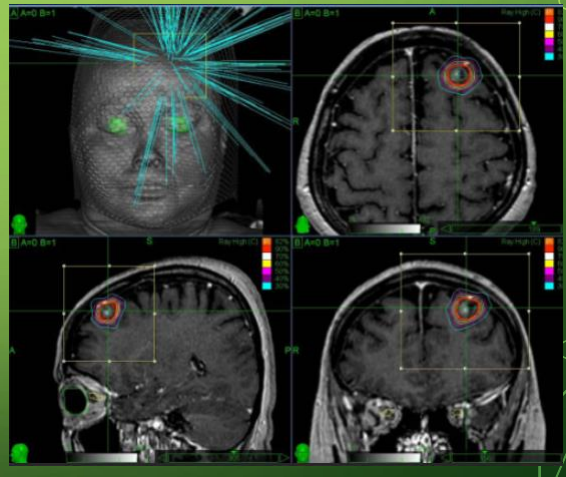
TYPES OF RADIATION USED

- **EBRT :** External Beam radiation Therapy
  - **IMRT:** Intensity modulated radiation Therapy
  - **SBRT :** Stereotactic Body Radiation Therapy
  - **3D conformal RT**
- **Brachytherapy**
- **IORT:** Intra Operative Radiation Therapy



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COMMON TERMINOLOGY

- **Breast:**
  - Medications: Aquaphor, Aloe vera, Domeboro (aluminum acetate), Silvadene, Aloe vera
  - Hormonal therapy: Tamoxifen, Anastrozole (Arimidex)
  - Diagnosis: DCIS, LCIS, Paget's disease, ILC, Breast cancer
  - Procedures: Lumpectomy, Radical Mastectomy, axillary dissection, whole breast irradiation, partial breast irradiation
  - BRCA1, BRCA2
- **Gyn:**
  - Diagnosis: Squamous cell carcinoma of cervix (80%), Adenocarcinomas (10%), CIS, Small cell carcinoma of the cervix., Vaginal cancer, Vulvar cancer, urethral cancer.
  - Procedures: HDR
  - Tumor markers: CA-125

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COMMON TERMINOLOGY (CONT…)

- **G/U:**
  - Materials: SpaceOAR, Radioactive seeds,
  - Procedures: brachytherapy, MRI with rectal coil, TURP, spaceOAR placement
  - Therapies: Hormone therapy, Immunotherapy, Flomax (tamsulosin), Terazosin, Finasteride, Bicalutamide (Casodex)
  - Diagnosis: Renal Cell tumors, Clear cell tumor, ADC, Carcinoma in situ of the bladder, Prostate Cancer, Seminomas, NSGCT's (teratoma, yolk sac tumor, choriocarcinoma)
  - Gleason Score (risk), PSA & testosterone

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COMMON TERMINOLOGY (CONT…)

- **GI:**
  - Procedures: enemas, Rectoscopy, anuscopy
  - Diagnosis: Colorectal Ca (ADC mostly), Rectal Ca, Anal Ca (Squamous cell), carcinoma of the esophagus, ADC of the stomach
  - Tumor markers: CEA, CA19-9
  - Medications: Simethicone (beano, GasX), Loperamide (Imodium), Prochloperazine (Phenergan), Zofran, Reglan, Proctofoam

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COMMON TERMINOLOGY (CONT…)

- **Head and neck:**
  - **Procedures:** scope of nasopharynx and larynx.
  - **Medications:** salt and Baking soda rinses, magic mouth wash, scopolamine patches
  - **Diagnosis:** HPV related tumors(P-16+), Squamous cell carcinoma of the base of the tongue and tonsils, vocal cord tumors, Medullary and papillary carcinomas of the thyroid, residual thyroid cancer, buccal mucosa/mandible tumors

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MEDICAL TERMINOLOGY (CONT…)

- **CNS:**
  - Diagnosis: GBM, Anaplastic astrocytomas, gliomas, meningiomas, brain mets, ependymomas, pilocytic astrocytoma, oligodendroglioma.
  - Neurologic terms: Gait, dysmetria, ataxia, aphasia, Lhermitte's syndrome (Rad induced spinal transection)
  - Procedures: fundoscopy
- **Lymph:**
  - Diagnosis: ALL, CLL, Cutaneous T Cell lymphoma (Mycosis fungoides and Sézary syndrome), Marginal zone lymphoma (most common in stomach), Hodgkin's and non Hodgkin's lymphoma,
  - Medications: CHOP regimen (cyclophosphamide, doxorubicin, vincristine, and prednisone), plus the monoclonal antibody rituximab

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MEDICAL TERMINOLOGY (CONT…)

- **Lung:**
  - Diagnosis: Small cell carcinoma, non small cell carcinoma, squamous cell carcinoma
  - Procedures: Thoracocenthesis, pleurodesis, ABC machine, abdominal plate
- **Sarcomas:**
  - Diagnosis: Bone tumors like: Osteosarcoma, Ewing's sarcoma, Muscle tumors like: rhabdomyosarcomas
  - Good knowledge about muscles and bone structures

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MORE TERMS…!

- Radiation threshold
- Tumor bed
- Tumor cavity
- Boost
- Fractions
- Beams
- Treatment field
- Brachial plexopathy
- Grade
- Stage
- TNM Classification
- Bony Mets
- Relapse
- Recurrence
- MDR
- BMA
- BMT
- Gantry

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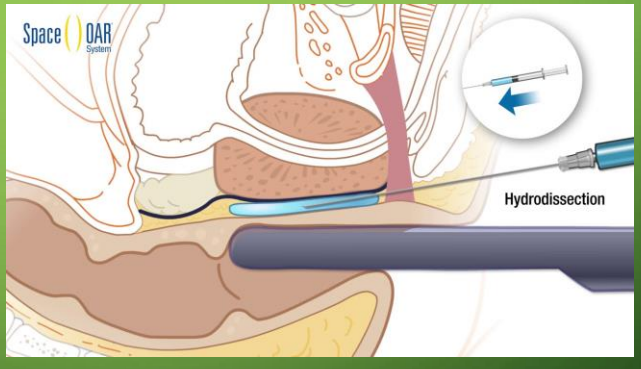
MEDICAL TERMINOLOGY MATERIALS AND PROCEDURES

- SpaceOAR
- Radioactive Seeds.



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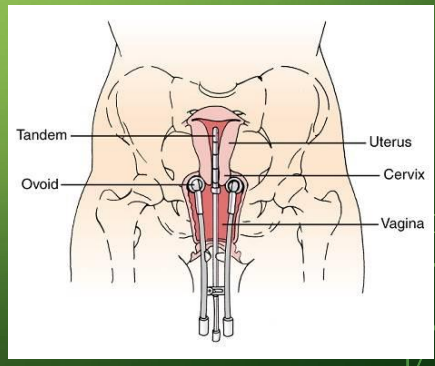
HIGH-DOSE RATE BRACHYTHERAPY (HDR)

- High-Dose Rate Brachytherapy: delivers radiation directly to the tumor using either needles or probes (Tandem and Ovoid). Radiation sources are then directly connected to the tumor.
- HDR Procedure (usually for cervical cancer):
  - IV start
  - Foley Cather insertion
  - Probe (Tandem and Ovoid) is placed into cervix and uterus
  - Patient is scanned on CT simulator
  - Treatment plan generated (make take a couple of hours)
  - Actual Treatment



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QUESTIONS???

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