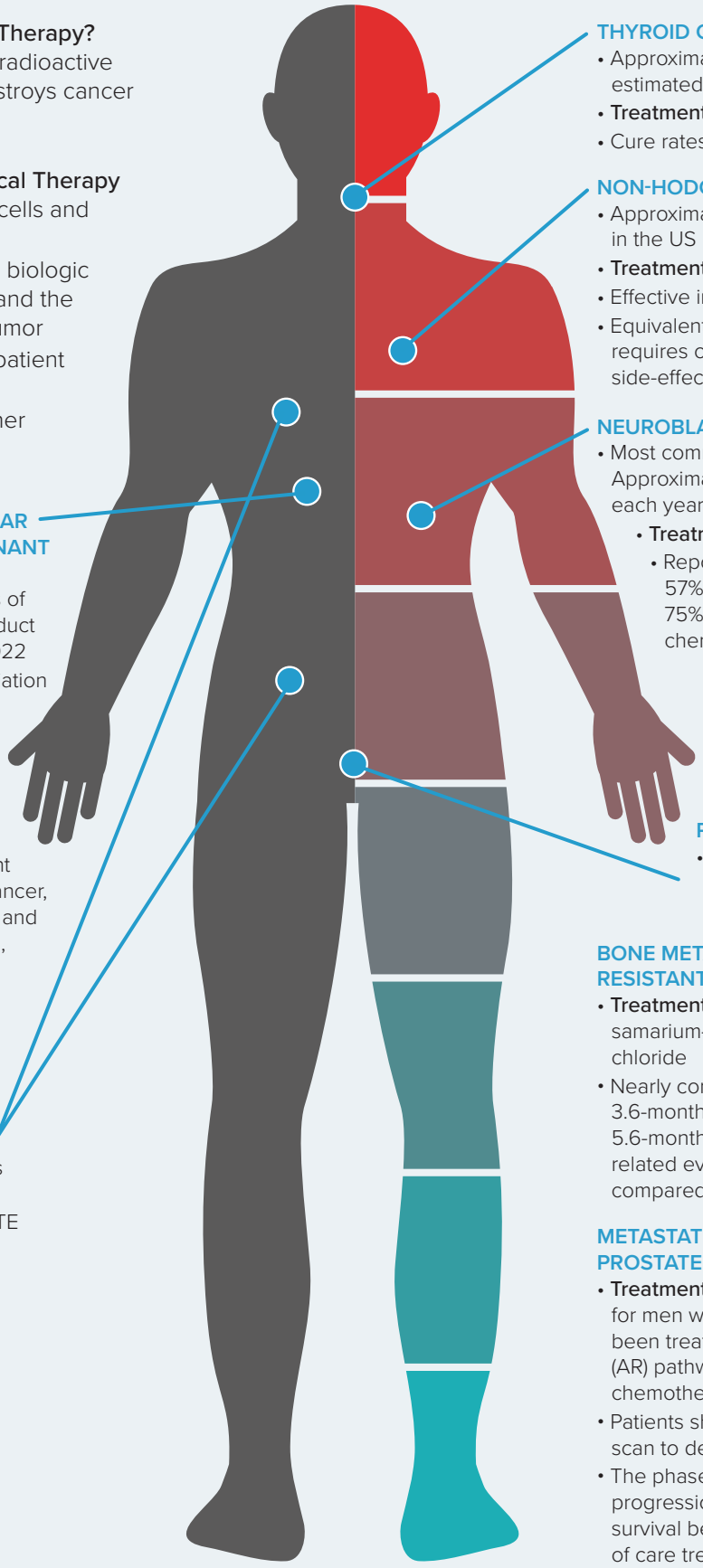
TARGETED CANCER TREATMENT WITH RADIOPHARMACEUTICAL THERAPY

What is Radiopharmaceutical Therapy?
Precision treatment in which a radioactive drug compound seeks and destroys cancer cells.

Benefits of Radiopharmaceutical Therapy
- Highly selective—kills cancercells and spares healthy cells
- Can be tailored to the unique biologic characteristics of the patient and the molecular properties of the tumor
- Virtually all performed as outpatient procedures
- Side effect rates less than other treatments



LIVER CANCER (HEPATOCELLULAR CARCINOMA) AND LIVER DOMINANT METASTATIC DISEASE
- Approximately 41,260 new cases of liver cancer and intraheptic bile duct cancer estimated in the US in 2022
- **Treatment**: selective internal radiation therapy (SIRT) with yttrium-90 microspheres
- Median survival rate for liver cancer patients of 20.5 months vs. 17.4 months with SIRT as compared to chemoembolism, with less toxicity. In liver-dominant metastatic disease from colon cancer, partial response, stable disease, and progressive disease seen in 10.2, 60, and 30 percent of patients, respectively

NEUROENDOCRINE TUMORS
- Approximately 12,000 new cases per year
- **Treatment**: lutetium-177 DOTATATE
- Median progression-free survival rate is 29 months

PARAGANGLIOMA AND PHEOCHROMOCYTOMA
- Approximately 1,000 new cases estimated each year
- **Treatment**: iodine-131 MIBG
- Median overall survival of 36.7 months, with sustained blood pressure control

THYROID CANCER
- Approximately 43,800 new cases estimated in the US in 2022
- **Treatment**: iodine-131
- Cure rates in excess of 90%

NON-HODGKIN'S LYMPHOMA
- Approximately 80,000 new cases estimated in the US in 2022
- **Treatment**: yttrium-90 ibritumomab tiuxetan
- Effective in 75% of patients
- Equivalent efficacy to chemotherapy, but requires only one cycle, and with fewer side-effects

NEUROBLASTOMA
- Most common cancer in infants; Approximately 800 new cases diagnosed each year in the US
  - **Treatment**: iodine-131 MIBG
  - Reported response rates of up to 57% when used alone and up to 75% when used in combination with chemotherapy

PROSTATE CANCER
- Approximately 268,490 new cases of prostate cancer estimated in the US in 2022

BONE METASTASES FROM CASTRATION-RESISTANT PROSTATE CANCER
- **Treatments**: radium-223 dichloride, samarium-153 lexidronam, and strontium-89 chloride
- Nearly comparable adverse events and 3.6-month overall survival benefit and 5.6-month benefit in time to first skeletal-related event with radium-223 dichloride compared to placebo

METASTATIC CASTRATION RESISTANT PROSTATE CANCER
- **Treatments**: 177Lu-PSMA-617 is Indicated for men with prostate cancer who have been treated with androgen receptor (AR) pathway inhibitors and taxane-based chemotherapy.
- Patients should first undergo PSMA PET scan to determine eligibility
- The phase III VISION trial demonstrated progression free survival and overall survival benefit when compared to standard of care treatments.