The earliest documented use of Nuclear Medicine was 1946 when radioactive iodine, via an “atomic cocktail,” was first used to treat thyroid cancer.

Radioactive Iodine Therapy: Effect On Functioning Metastases of Adenocarcinoma of the Thyroid
Seidlin, Marinelli, Oshry.
JAMA 1946
Bone Metastases from Thyroid Cancer

$^{131}$I-SPECT/CT
Metastatic Follicular Thyroid Cancer

FDG PET/CT 1/09
Before Therapy

Radioiodine scan 2/09

FDG PET/CT 12/09
After Three Radiiodine Therapies

Time course of tumor marker (Thyroglobuline)
Prostate Cancer: Imaging Metastatic Disease

Frontiers of Diagnosis

- $^{99}$Tc – Bone Scan
- $^{18}$FDG PET/CT
- $^{18}$FDHT PET/CT

- Glycolysis
- Androgen Receptor
Theranostics: $^{18}$F-FDHT PET/CT: Predictive and Targeted Response Biomarker in patients with metastatic prostate cancer considered for therapy with an androgen receptor antagonist (e.g. MDV3100)