

# PET Bytes

News from *The Positron Imaging Facility* at UT Southwestern Medical Center at Dallas

August 2006

## National Oncology PET Registry (NOPR)

The long awaited registry for patients with Medicare coverage has finally opened and the UTSWMC PET Facility is actively enrolling patients. This registry allows scans to be performed and paid for by Medicare for oncology indications that were not previously included. However, in order to obtain a scan, a simple pre and post PET form must be completed. These forms can be faxed to you from us or downloaded from the NOPR website ([www.petreg@acr.org](http://www.petreg@acr.org)). This registry tremendously expands the potential for obtaining PET scans on your patients, aiding in diagnosis, staging and following therapy.

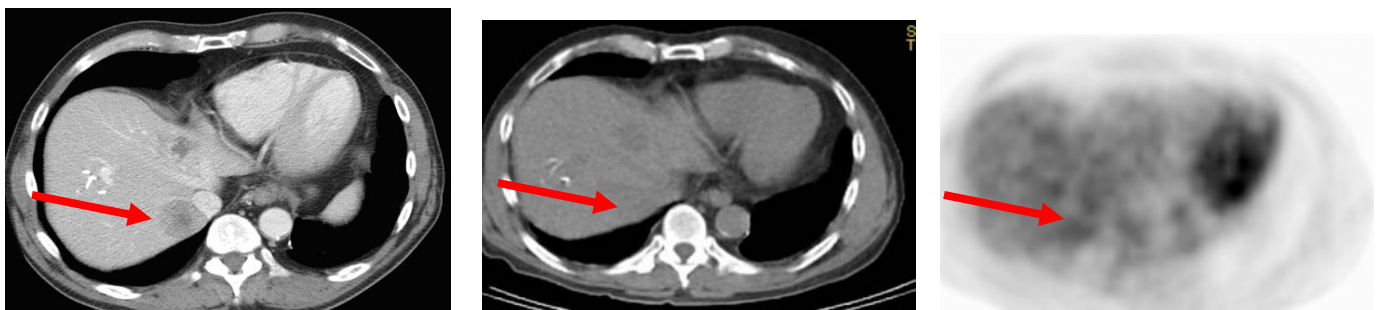
## Why are FDG PET scans not indicated for all oncology diagnoses?

PET imaging with Fluorine 18 deoxyglucose (FDG) is useful in tumor types that have high levels of glucose metabolism and /or over-express glucose transporters on their cell

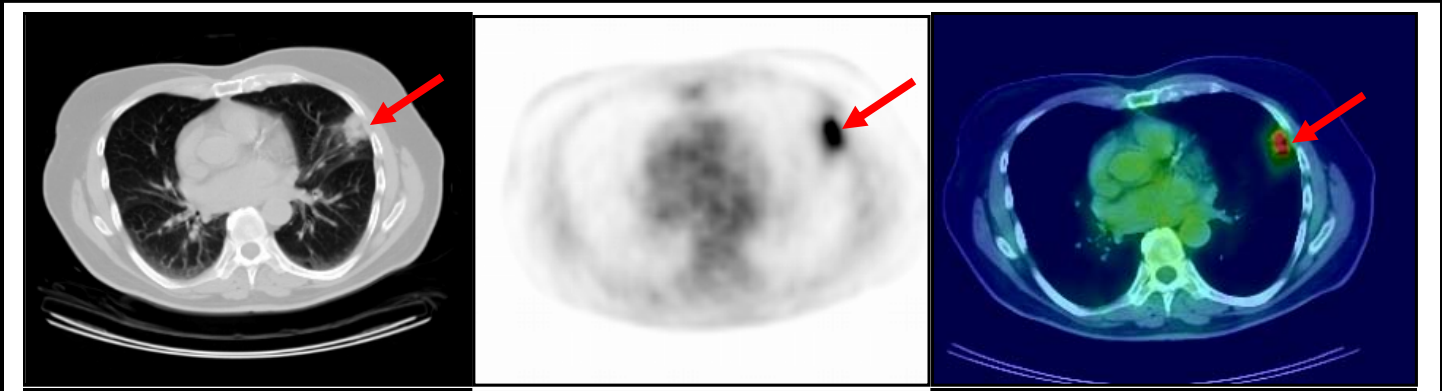
surfaces. In general, tumors of epithelial origin, including the majority of squamous and adenocarcinomas, are well imaged. However, certain well differentiated or low metabolic level tumors are not well seen, for example prostate cancer, thyroid cancer and some neuroendocrine tumors. In addition, adenocarcinomas that have high mucin content are often difficult to image with FDG PET. Table 1 gives a listing of tumors that usually have low or variable FDG uptake.

**Table 1**

**Prostate Cancer**  
**Hepatocellular Carcinoma**  
**Renal Cell Carcinoma**  
**Neuroendocrine Tumors**  
**Mucinous Adenocarcinomas**  
**(GI and Ovary)**  
**Bronchoalveolar Carcinoma**  
**Well Differentiated Thyroid Cancer**



**Figure 1.** On the left is a contrasted CT showing a recurrent hepatocellular carcinoma lateral to the IVC. The noncontrast CT portion of the PET/CT exam does not show this lesion well and there is no abnormal FDG uptake on the PET portion. The surgical clips mark the site of a previous ablation.



**Figure 2**

Three axial images, CT, PET and Fused show elevated uptake in a lung mass which was biopsy proven histoplasmosis.

**Why do some non-malignant lesions show FDG uptake?**

Unfortunately, FDG is taken up by other processes than cancer and at times distinction between malignant and non malignant lesions can be difficult. Infections, including abscesses, granulomatous diseases, sites of trauma and inflammation can all result in elevated FDG uptake. Sometimes the intensity of FDG accumulation is less in these disorders than malignancy but there is considerable overlap.



Figures 2 and 3 demonstrate FDG uptake in non-malignant lesions.

**Figure 3**

There is intense FDG uptake in hilar lymph nodes consistent with sarcoidosis

**Positron Imaging Facility  
1311 Record Crossing  
Dallas, TX 75235  
214-267-1513**

**Faculty:**

**Dana Mathews, PhD, MD  
...Medical Director  
William Erdman, MD  
Orhan K Oz, MD, PhD  
Irfan Farukhi, MD**



**Please visit our website to view past editions of PET Bytes. We can be found at:**

[www.utsouthwestern.edu/utsw/home/hp/pet/](http://www.utsouthwestern.edu/utsw/home/hp/pet/)

The **Positron Imaging Facility** will be moving to the North Campus some time in late 2006. We will be located in the **Clements Advanced Imaging and Research Center**. Look for updates in the next issue of **PET Bytes**.