Use $^{18}$F NaF for your PET/CT Bone Scans

The National Oncologic PET Registry (NOPR) officially opened the data registry for $^{18}$F NaF PET/CT Bone Imaging on February 7, 2011.

A February 10, 2010 National Coverage Determination by the Centers for Medicare and Medicaid services (CMS) to cover Positron Emission Tomography with F-18 sodium fluoride (NaF-PET) to identify bone metastasis under the CMS Coverage with Evidence Development (CED) program. In response, NOPR has developed a NaF-PET program that meets those requirements. CMS will include the registry within its Medicare Approved Facilities/Trials/Registries section.

As a result, $^{18}$F NaF PET/CT Bone imaging is now a covered procedure under Medicare.

For more information, please contact:

Dave Wilson, VP PET Operations
314.709.0085
Comparison: $^{18}$F NaF PET/CT versus Tc-99m MDP SPECT

Bone metastases can be lytic, blastic or a combination of both. Lytic metastases are associated with lung, thyroid, renal and breast cancers. While Tc-99m MDP has been shown to have a low sensitivity in detecting osteolytic lesions, $^{18}$F NaF does not have this limitation; it has shown sensitivity in both lytic and blastic lesions. PET/CT, in particular, provides greater accuracy. Because of the superior image quality of PET, more lesions will be seen, thus possibly increasing the risk of false positives (visualization of a benign or degenerative bone condition than metastasis). PET/CT reduces the false positive risk by allowing the direct and immediate correlation with CT.

- PET affords improved ability to determine the presence and extent of bone metastases.
- PET provides superior spatial resolution, tomographic images, and anatomic detail.
- PET visualizes both osteolytic and osteoblastic lesions, while MDP is limited to osteolytic lesions.
- PET allows direct and immediate correlation with CT.

**Advantages of Using $^{18}$F NaF**

- Increased sensitivity over Tc-99m scans1
- Increased specificity over Tc-99m scans1
- Increased spatial and contrast resolution1
- Fusion with anatomic information – CT or MR
- 3-axis and whole body viewing similar to FDG
- Readily available for use

**Beneﬁts of PET Bone Imaging Using $^{18}$F NaF**

- Bone uptake is two times higher and blood clearance is faster than Tc99m methylenephosphonates (MDP).
- Superior bone to background ratios.
- High contrast images as early as 60 minutes after injection.
- Little residual retention in soft tissues and the renal parenchyma2.
- Bone metastases are seen indirectly, uptake depends on skeletal reaction to tumor4.
- Deposition favors sites of high bone turnover and remodeling5.

The distribution of $^{18}$F NaF in the body is also superior to MDP. Blood clearance is much faster than with MDP and the bone uptake is higher, allowing for superior bone to background ratios and the ability to obtain high-contrast images as early as 60 minutes after injection. $^{18}$F NaF is not taken up directly by the tumor; instead it shows the bone’s reaction to the tumor.

**Sources:**