

# MotionFree

Addressing the biggest clinical challenge in PET/CT

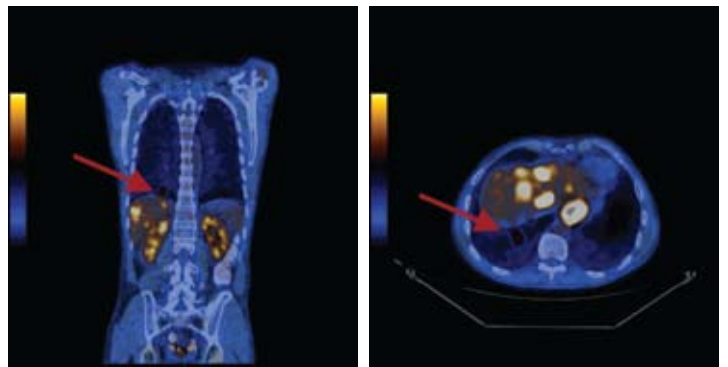
## Lesion Localization: Diagnose and Stage with Accuracy

Understanding the location of lesions is a vital part in accurately staging your patients.

In a conventional PET/CT exam, the patient is continuously breathing and a static PET scan is acquired by averaging the PET image over multiple respiratory cycles. The attenuation of the PET scan is corrected with a quick low dose helical CT. Respiratory motion in the diaphragm region can cause a mismatch between the PET and CTAC resulting in an artifact, compromising lesion localization.

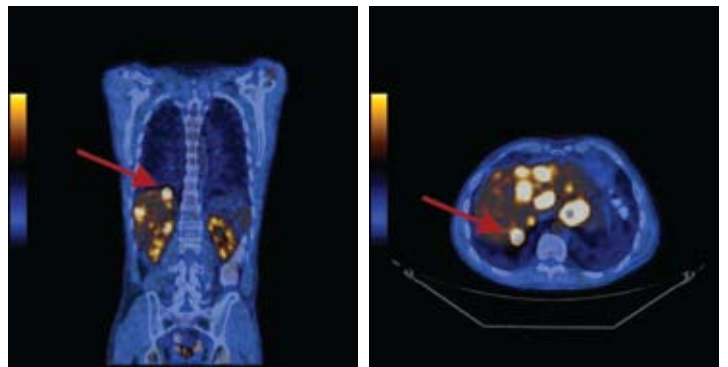
GE Healthcare's MotionFree PET/CT minimizes the impact of PET and CTAC mismatches using advanced motion correction techniques. This capability allows the user to acquire multiple Cine CT's in a specified region and automatically average them together with the helical CT. The resulting average CTAC reduces the impact of respiratory motion and provides a more accurate correction of the PET image. Removing artifacts caused by respiratory motion may result in greater confidence in tumor location and extent of disease.

## Conventional PET/CT



Unconfirmed location of tumor due to motion artifact

## MotionFree PET/CT



Confirmed location of tumor and extent of disease



## Clinical and Patient Advantages

There was a suspicion of a tumor outside the original diagnosis of metastasis disease after an artifact was observed in the PET scan. However, there was no nodule observed on the CT scan. After the motion artifact was corrected with the average CT technique, the location of tumor and extent of disease was confirmed. Correctly localizing the metastasis directly benefited the patient with a more accurate diagnosis and stage.

**Institution:** MD Anderson Cancer Center

**Doctor Name:** Tinsu Pan PhD.

**Title:** Associate Professor

**Location:** Houston, TX

### Patient Details

**Height:**

61 in (175 cm)

**Weight:**

134lbs (61 kg)

**Age:**

46 years

**Gender:**

Male

**Previous History of Cancer:**

Esophageal cancer

### Equipment

**PET Scanner:**

Discovery PET/CT 16-Slice

**Software:**

Discovery Dimension Console, ACT  
(Average CT) developed in house

### Methods

**Injected Dose:**

15.0 mCi

**Diagnostic CT Protocol?:**

Yes

**PET/CT Protocol:**

Scanned 1 hr 5 minutes  
after injection

**2D/3D Acquisition:**

2D

**Minutes /Bed:**

3 min

GE Healthcare  
3000 North Grandview Blvd  
Waukesha, WI 53188  
U.S.A.  
[www.gehealthcare.com](http://www.gehealthcare.com)

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