# GE Healthcare

MotionFree
Addressing the biggest clinical challenge in PET/CT

**Quantitative Accuracy: Monitor with Confidence**

Confidently monitoring treatment response starts with an accurate SUV of the lesion. 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 static 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 SUV quantification.

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 a significant difference in SUV* and potentially provide more accurate monitoring of treatment response.

Conventional PET/CT SUV 3.3
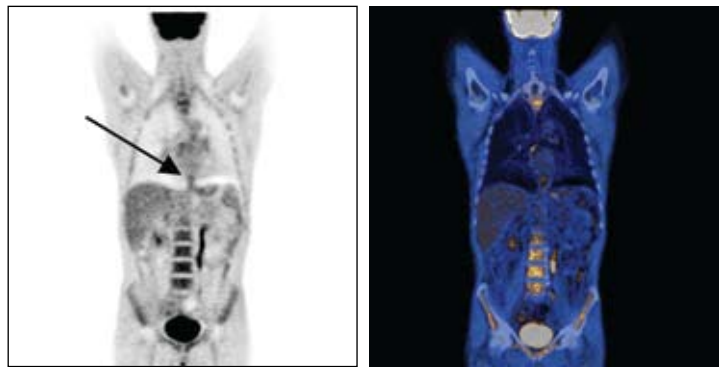
MotionFree PET/CT SUV 5.2
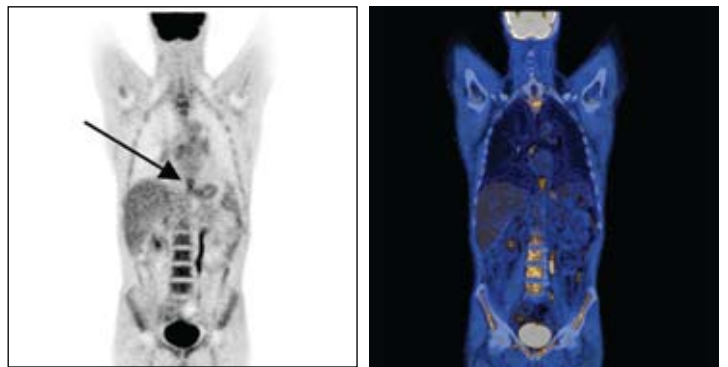
*Over 60% SUV increase when motion was corrected with Average CT technique.

Clinical and Patient Advantages

A tumor nearby a photon panic region was observed on the PET scan. By using the Average CT technique, the SUV was increased from 3.3 to 5.2 (60% change in quantitation). This helped provide an accurate diagnosis and a confident quantitative baseline for treatment monitoring.

Institution: MD Anderson Cancer Center
Doctor Name: Tinsu Pan PhD.
Title: Associate Professor
Location: Houston, TX

Patient Details

Height:
69.3 in (176cm)

Weight:
148 lbs (67 kg)

Age:
59 years

Gender:
Male

Previous History of Cancer:
Esophageal cancer

Equipment

PET Scanner:
Discovery PET/CT 8-Slice

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

Methods

Injected Dose:
14.2 mCi

Diagnostic CT Protocol?:
Yes

PET/CT Protocol:
Scanned 1 hr 21 minutes
after injection

2D/3D Acquisition:
2D

Minutes /Bed:
3 min

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imagination at work

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