

# DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2012/11/05
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Correction Number	CP-1210
Log Summary: Add SUV Ideal Body Weight	
Name of Standard	PS 3.3, 3.16 2011
<p>Rationale for Correction:</p> <p>A means of specifying an SUV type of Ideal Body Weight. Is required</p> <p>In the original/classic/legacy single frame PET IOD, the type of SUV calculation is defined by SUV Type; in the Enhanced PET IOD, the Real World Value Mapping functional group is used with CID 84.</p> <p>Also, add notes with reference to article containing the accepted formulas, and a copy of the formulas.</p>	
Correction Wording:	

*Amend PS 3.3:*

### C.8.9.1 PET Series Module

Table C.8-60 contains IOD Attributes that describe a PET Series.

**Table C.8-60 - PET SERIES MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...	...	...	...
SUV Type	(0054,1006)	3	<p>Type of Standardized Uptake Value (SUV). Enumerated Values:</p> <p>BSA – body surface area            BW – body weight            LBM – lean body mass  <b>IBW – ideal body weight</b></p> <p>If absent, and the Units (0054,1001) are GML, then the type of SUV shall be assumed to be BW.</p> <p>Note: The type of SUV cannot reliably be deduced from the units alone, i.e. SUVbw, <b>SUVibw</b> and SUVlbm <b>both all</b> have units of GML.</p>
...	...	...	...

**Note:** The formulas for the determination of SUVbw, SUVbsa, SUVlbm and SUVibm are defined in Sugawara et al. *Reevaluation of the Standardized Uptake Value for FDG: Variations with Body Weight and Methods for Correction*. Radiology, 1999 at <http://radiology.rsna.org/content/213/2/521>. See also CID 84 in PS 3.16.

## CID 84 PET Units for Real World Value Mapping

Context ID 84

## PET Units for Real World Value Mapping

Type: Extensible Version: 20080123 yyymmdd

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
UCUM	{counts}	Counts
UCUM	{counts}/s	Counts per second
UCUM	{SUVbw}g/ml	Standardized Uptake Value body weight
UCUM	{SUVlbm}g/ml	Standardized Uptake Value lean body mass
UCUM	{SUVbsa}cm <sup>2</sup> /ml	Standardized Uptake Value body surface area
<b><u>UCUM</u></b>	<b><u>{SUVibw}g/ml</u></b>	<b><u>Standardized Uptake Value ideal body weight</u></b>
UCUM	{propcounts}	Proportional to counts
UCUM	{propcounts}/s	Proportional to counts per second
UCUM	cm <sup>2</sup>	Centimeter**2
UCUM	%	Percent
UCUM	Bq/ml	Becquerels/milliliter
UCUM	mg/min/ml	Milligrams/minute/milliliter
UCUM	umol/min/ml	Micromole/minute/milliliter
UCUM	ml/min/g	Milliliter/minute/gram
UCUM	ml/g	Milliliter/gram
UCUM	/cm	/Centimeter
UCUM	umol/ml	Micromole/milliliter

**Note:** The formulas for the determination of SUVbw, SUVbsa, SUVlbm and SUVibm are defined in Sugawara et al. *Reevaluation of the Standardized Uptake Value for FDG: Variations with Body Weight and Methods for Correction*. Radiology, 1999 at <http://radiology.rsna.org/content/213/2/521>. The patient size correction factors are summarized here, where weight is in kg and height is in cm:

<b>SUVbw:</b>	<b>males &amp; females:</b>	<b>weight</b>
<b>SUVlbm:</b>	<b>males:</b>	<b>1.10 * weight – 120 * (weight/height)<sup>2</sup></b>
	<b>females:</b>	<b>1.07 * weight – 148 * (weight/height)<sup>2</sup></b>
<b>SUVbsa:</b>	<b>males &amp; females:</b>	<b>weight<sup>0.425</sup> * height<sup>0.725</sup> * 0.007184</b>
<b>SUVibw:</b>	<b>males:</b>	<b>48.0 + 1.06 * (height - 152)</b>
	<b>females:</b>	<b>45.5 + 0.91 * (height - 152)</b>