

DEXXUM T

The innovative Axial DEXA

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OsteoSys

Design concept



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Technical specifications

System

<i>X-Ray system</i>	<i>DEXA (Dual Energy X-ray Absorptiometry)</i>
<i>Scanning method</i>	<i>Pencil beam</i>

Performance

<i>Scan site</i>	<i>AP Spine, femur (dual femur)</i>
<i>Scan type</i>	<i>Non-stop scan (AP Spine, dual femur)</i>
<i>Scan time</i>	<i>(Fast) AP Spine: 1 min. 25 sec. Femur: 1 min. 5 sec. (Normal) AP Spine: 3 min. 07 sec. Femur: 2 min.</i>
<i>Precision/Accuracy</i>	<i><1.0 %</i>
<i>Measured parameters</i>	<i>BMD, BMC, area, tissue thickness</i>
<i>Calibration system</i>	<i>Automatic calibration, daily QC phantom</i>
<i>Patient positioning</i>	<i>Laser aid positioning (plus shape type)</i>
<i>Image transmission</i>	<i>DICOM system</i>

Required computer workstation

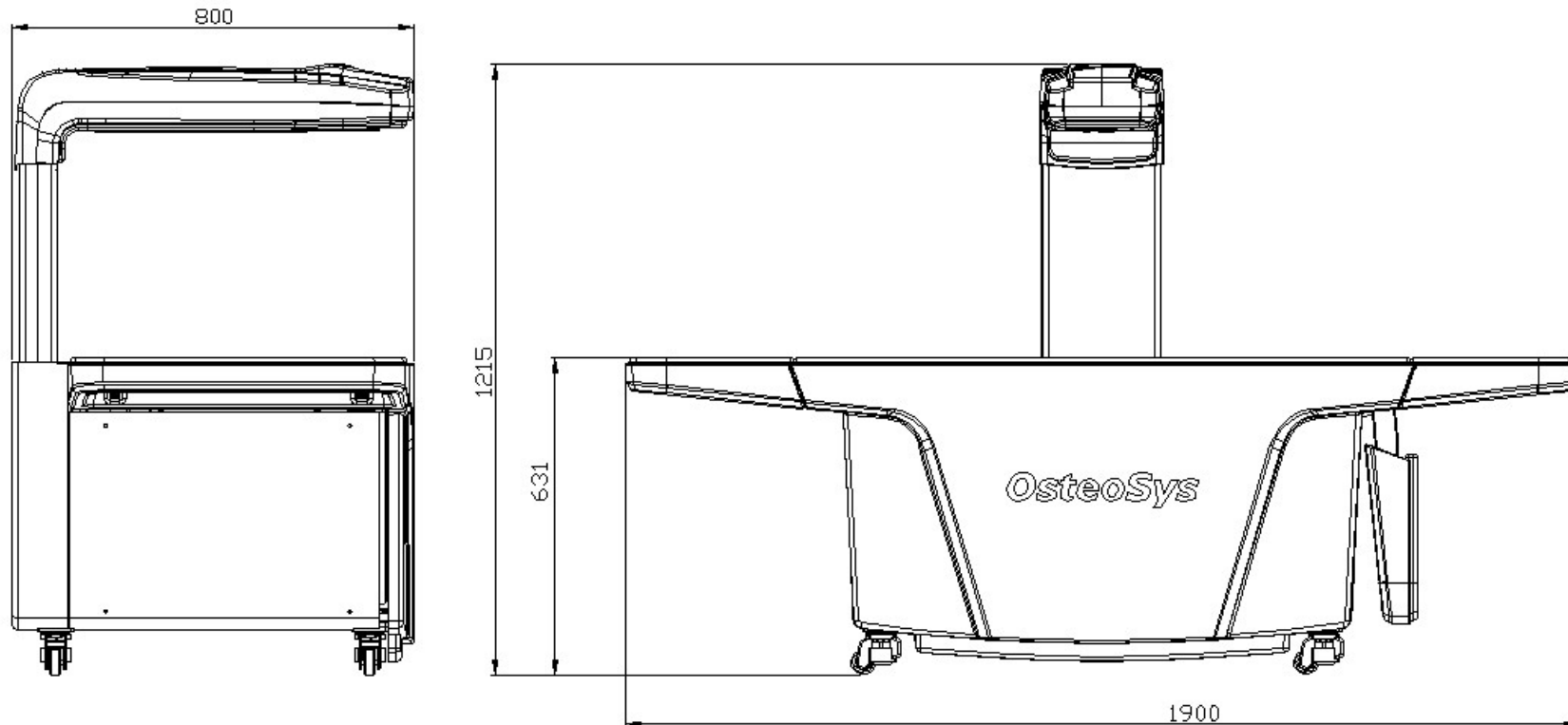
<i>Operationg system</i>	<i>Windows XP, Windows Vista</i>
<i>Monitor</i>	<i>LCD monitor (1280 X 1024 pixel)</i>
<i>Printer</i>	<i>Color ink jet with 300*300 dpi resolution</i>

Dimensions and Weight

<i>Dimensions</i>	<i>Full size: 2000*800*1221 (mm) Medium size: 1900*800*1221 (mm) Compact size: 1850*800*1221 (mm)</i>
<i>Weights</i>	<i>130.5 kg</i>

Dimensions

1. *Full size : 2000 * 800 * 1221 (mm)*
2. *Medium size : 1900 * 800 * 1221 (mm)*
3. *Compact size : 1850 * 800 * 1221 (mm)*



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Color options

DEXXUM^T

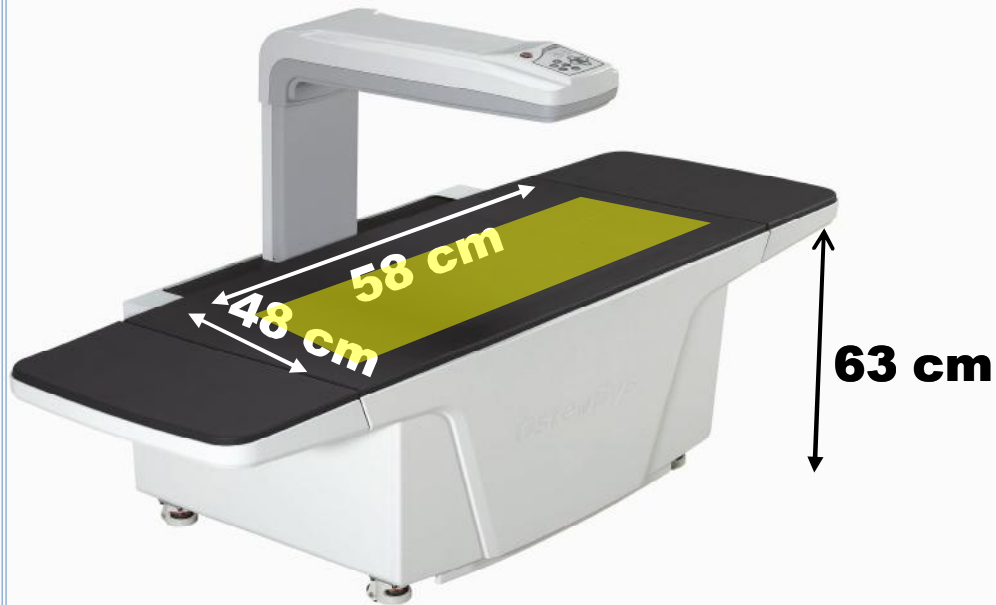
The Evolution of X-ray Absorptiometry



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Scan windows

DEXXUM T



ROI scanning sites

Scan windows: 58 cm * 48 cm

Bed high : 63 cm

GE LUNAR DPX - BRAVO



Scan windows : 55cm * 41cm

Bed high: 70 cm

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Scan windows

**MEDI LINK
OSTEOCORE**



Scan windows: 15cm * 20cm
Bed high : 78cm

**MEDI LINK
OSTEOCORE 2**



Scan windows: 40cm * 53cm
Bed high : 78cm

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Scan time

Manufacturer	OSTEOSYS	GE LUNAR	MEDI LINK
Model	<i>DEXXUM T</i>	DPX-BRAVO	OSTEOCORE
Scan time	AP Spine: 85 sec. Femur: 65 sec.	AP Spine: 90 sec. Femur: 90 sec.	AP Spine: 360 sec. Femur: 360 sec.

DEXXUM is the fastest central DEXA in pencil beam.



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Innovative functions

- ***Excellent reproducibility (Precision & Accuracy less than 1%)***
the systems scan area precision and reproducibility with cross point laser site marking produce accurate and repeatable data measurement
- ***Fast Scan Time*** *for improved patient experience and more available scanning time reduce costs*
AP Spine: 1 min. 25 sec.
Femur: 1 min. 05 sec.
- ***Comprehensive report: Dexam T*** *provides detailed test information*
Patient results are compared with young normal (T-Score) and age-matched (Z-Score) reference populations in a clear graphical report

Innovative functions

- *Real Non-stop scan*
up to 3 areas for a single scan (AP spine & dual femur)
- *Auto ROI (Region Of Interest)*
Automatic ROI division after each measurement
- *Auto tube current setting is optimized for patients size*
Calculated from their height and weight
- *Point edit*
Delete/add functions to divide the Bone and Tissue area to reduce BMD calculation error (as a result of fracture, implant or surgery parts, etc.)
- *Automatic Data Base Back-up system every fridays*
- *Multiple database print functionally by date of measurement, analysis date and average thickness information*

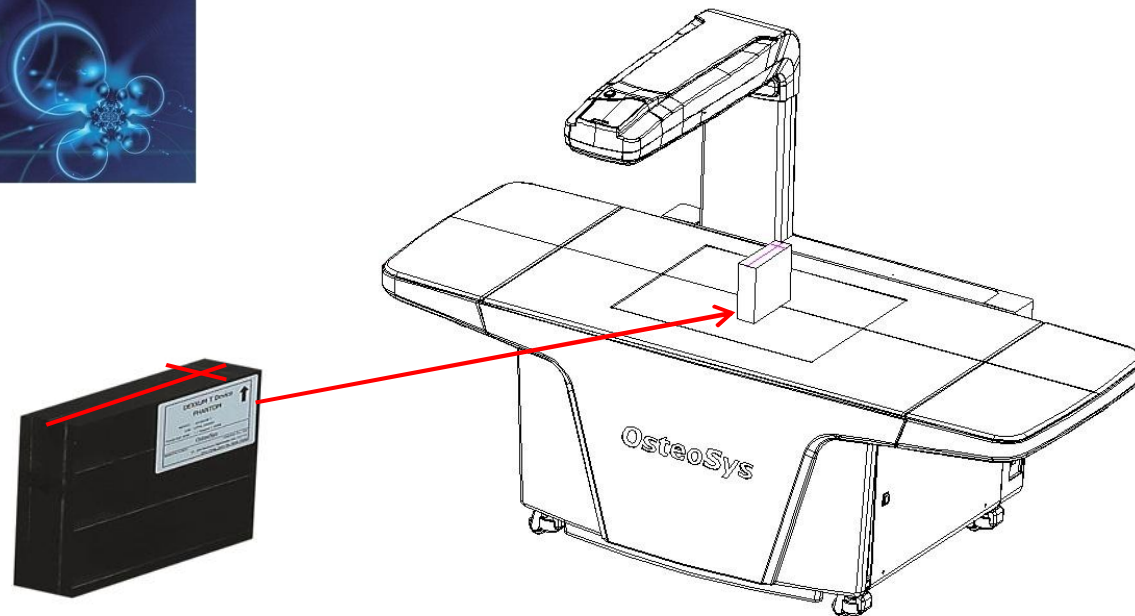
Innovative functions

- *Daily test ensures device stability for routine operation*
- *Easy data entry and management to register and edit the patient details and BMD measurements*
- *Color image support*
- *Specify for each ROI area the representative value*
- *Minimize site errors using cross laser point for site measurement and identification*
- *Multiple language support*
- *Automatic division of soft tissue*
- *Comparing data system for multi scan reviews*
- *DICOM system support (for image transmission)*
- *Personalize reports with options to integrate Hospital/ Logo*

Daily calibration

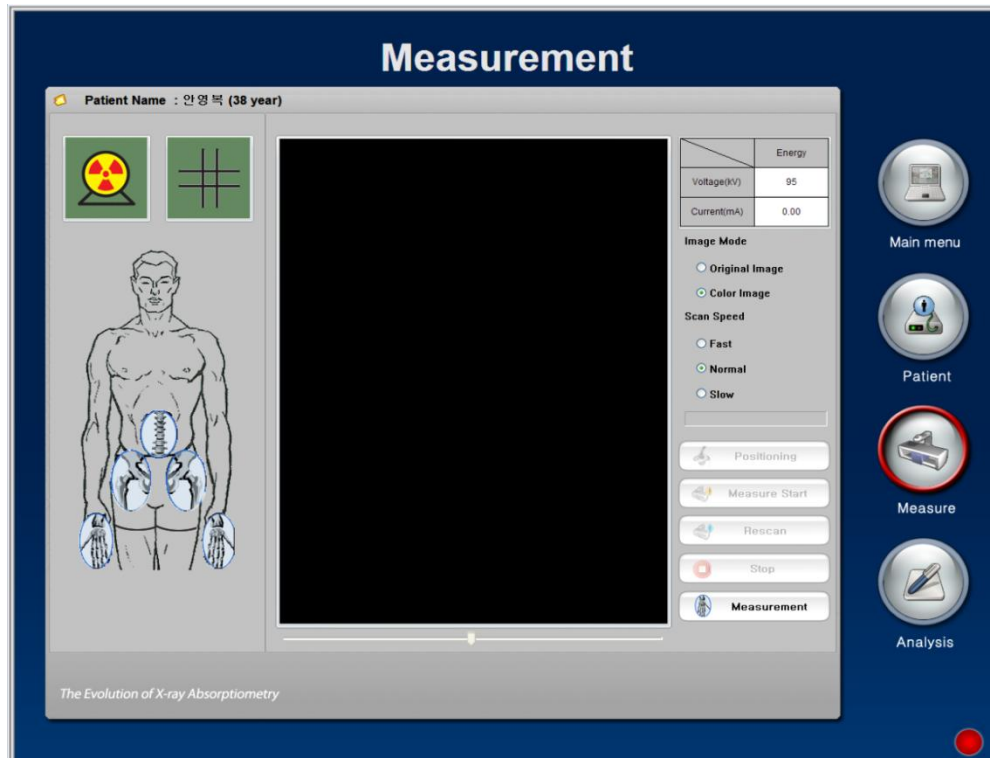


1. Click calibration



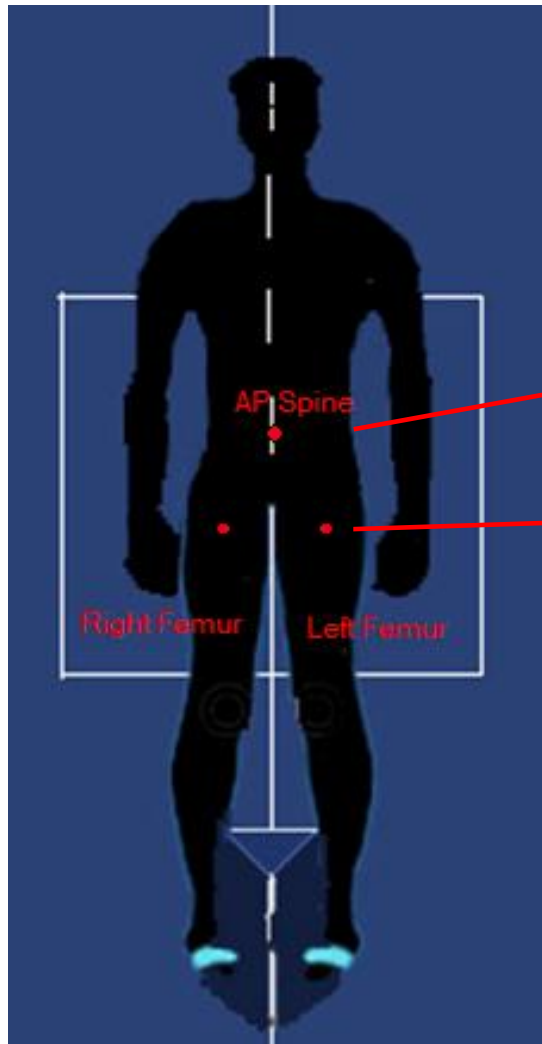
*** Daily test will take approx. 15 minutes.**

Measurement



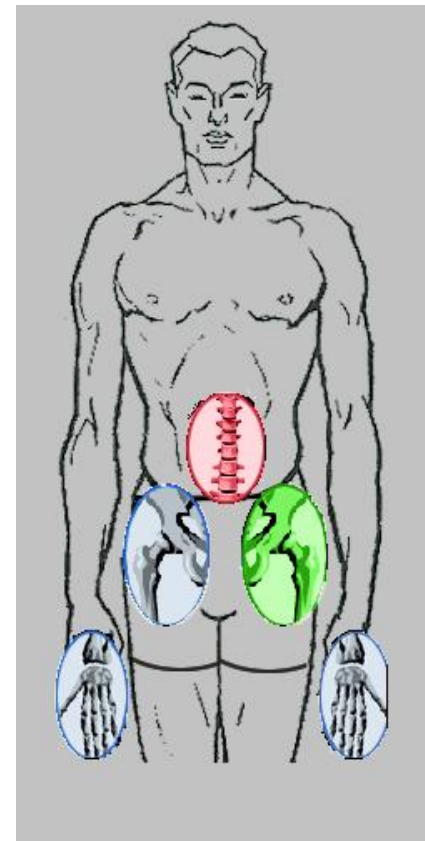
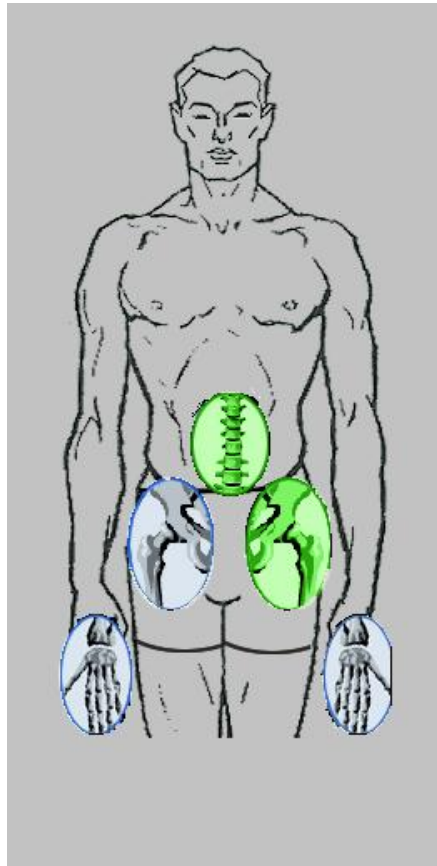
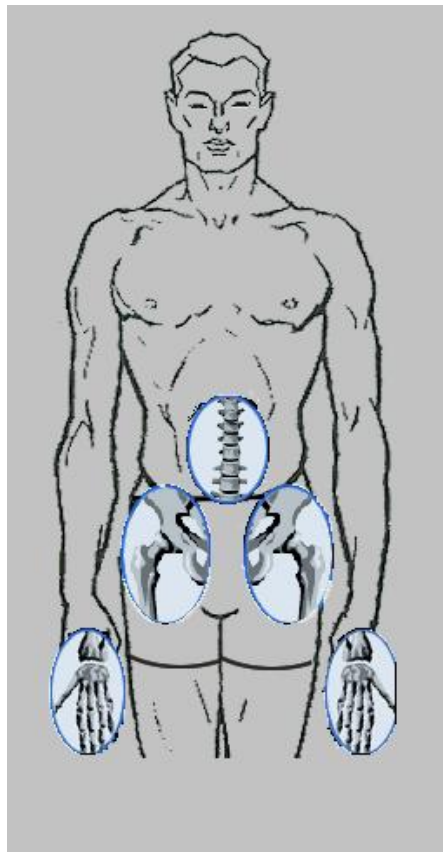
- Completed register a new patient or found a patient to measure.
- Patient lie on the table, operate PC
- Click “Positioning” and “Measure Start”
- Selection;
Image Mode
Scan Speed

Patient positioning



Umbilicus for Spine

Femur: Middle of femur and below 15~20cm from trochanter



- Image on the PC monitor will be changed to green color by selecting switch panel.
- Red color is completed measuring or under measuring.
- **Right images show is selected Left Femur & Spine.**

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Analysis monitor

- Measurement completed, click menu in the left.
- Red circle is to see “Left Femur”.
- Green circle is to see “Sine”.

Analysis

Patient Name : Jane Doe (39 year)

Date	BMD	T-Sc...
2008-03-03	1.045	-0.6

Sine

Date	BMD	T-Sc...
2008-03-03	0.837	-0.5

Left Femur

Date	BMD	T-Sc...
2008-03-03	0.837	-0.5

Right Femur

Date	BMD	T-Sc...
------	-----	---------

Left Forearm

Date	BMD	T-Sc...
------	-----	---------

Right Forearm

Date	BMD	T-Sc...
------	-----	---------

Original Image Color Image

Study Comment Patient Comment

Information Spine Left Femur Right Femur Left Forearm Right Forearm

Trend Send PACS Print

BMD (g/cm²) Reference : Neck T-Score

Region	BMD	T-Score	Z-Score
Neck	0.837	-0.5	-0.2
Wards	0.703	-1.4	-0.9
Troch	0.689	-0.6	-0.8
Shaft	1.097	-	-
Total	0.892	-0.3	-0.3

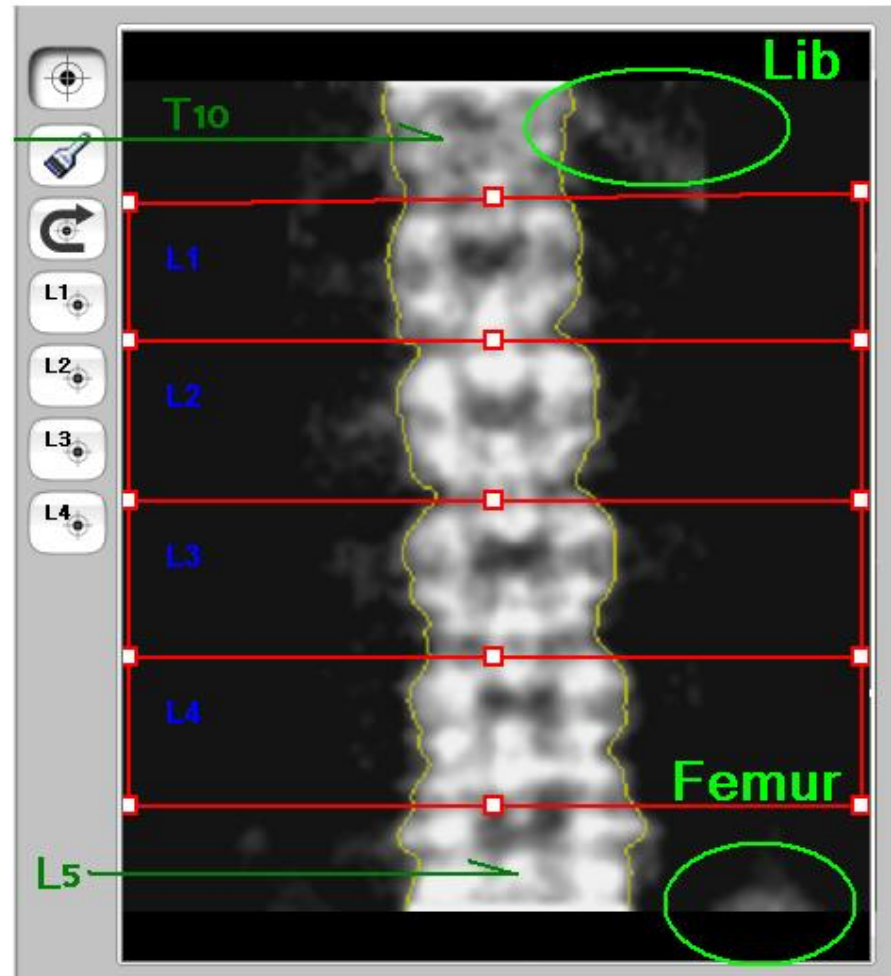
Information

Tissue Thickness	14.64 cm
Mode	Thin

Main menu Patient Measure Analysis

Find ROI (Spine)

- Set ROI is automatic function.
- Not all the automatic ROI is correct, fully enough.
- User can change ROI set by moving position & adjusting inclination.



Edit selection keys

Delete image

ROI Set

Brush

ROI Reset

**L1 L2 L3 L4:
remove any area**

Add Study Command

Representative T-score: Average T-score between L1~L4

Edit selection keys

ROI edit
Bar Up/down

Adjust
inclination

Choose image
color

Analysis

Patient Name : 안영복 (38 year)

Spine

Date	BMD	T-Sc...
2008-04-01	1.007	-1.5

Left Femur

Date	BMD	T-Sc...
2008-04-01	1.114	1.3

Right Femur

Date	BMD	T-Sc...
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Left Forearm

Date	BMD	T-Sc...
2008-04-14	0.653	1.1

Right Forearm

Date	BMD	T-Sc...
2007-01-01	0.942	5.9

ROI edit Bar Up/down

Adjust inclination

Choose image color

Original Image Color Image

Study Comment Patient Comment

Information Spine Left Femur Right Femur Left Forearm Right Forearm

Trend Send PACS Print

BMD(g/cm²) Reference : L1-L4 T-score

Region	BMD	T-Score	Z-Score
L1	0.928	-1.6	-2.7
L2	1.031	-1.4	-2.6
L3	0.961	-2.0	-3.2
L4	1.096	-0.9	-2.2
L1-L2	0.983	-1.4	-2.6
L1-L3	0.976	-1.5	-2.7
L1-L4	1.007	-1.5	-2.7
L2-L3	0.996	-1.6	-2.9
L2-L4	1.029	-1.4	-2.6
L3-L4	1.029	-1.5	-2.6

Information

Tissue thickness 19.80 cm

Fat 0.00 %

Main menu

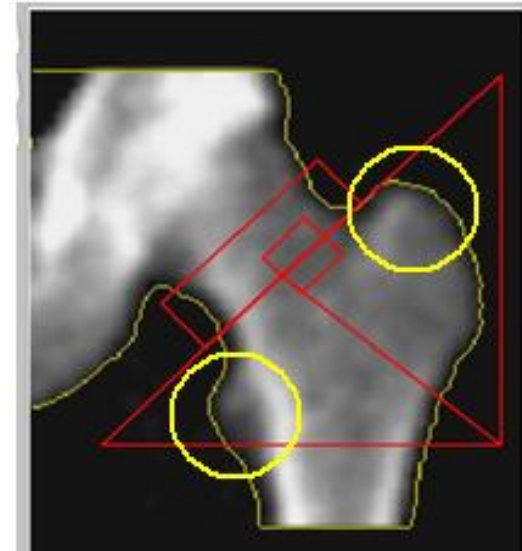
Patient

Measure

Analysis

Find ROI (Femur)

- Set ROI is automatic function.
- Not all the automatic ROI is correct, fully enough. User can change ROI set by moving position & rotating angle.
- Yellow circle: Should include Trochanter & Shaft in the triangle.
- Ward is positioned in the center of femoral neck where dark colored.

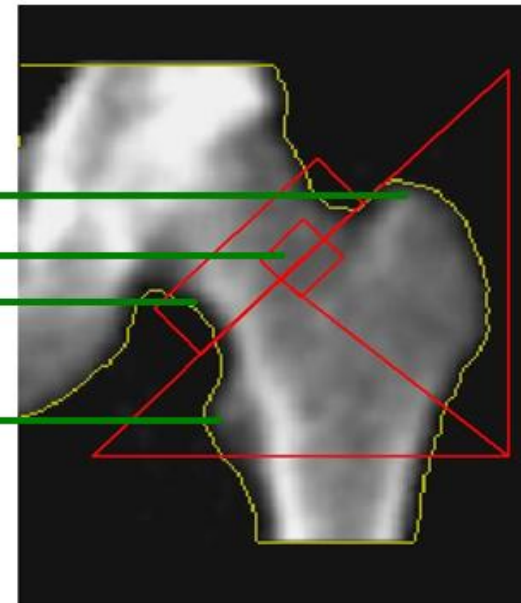


Trochanter

Ward

Neck

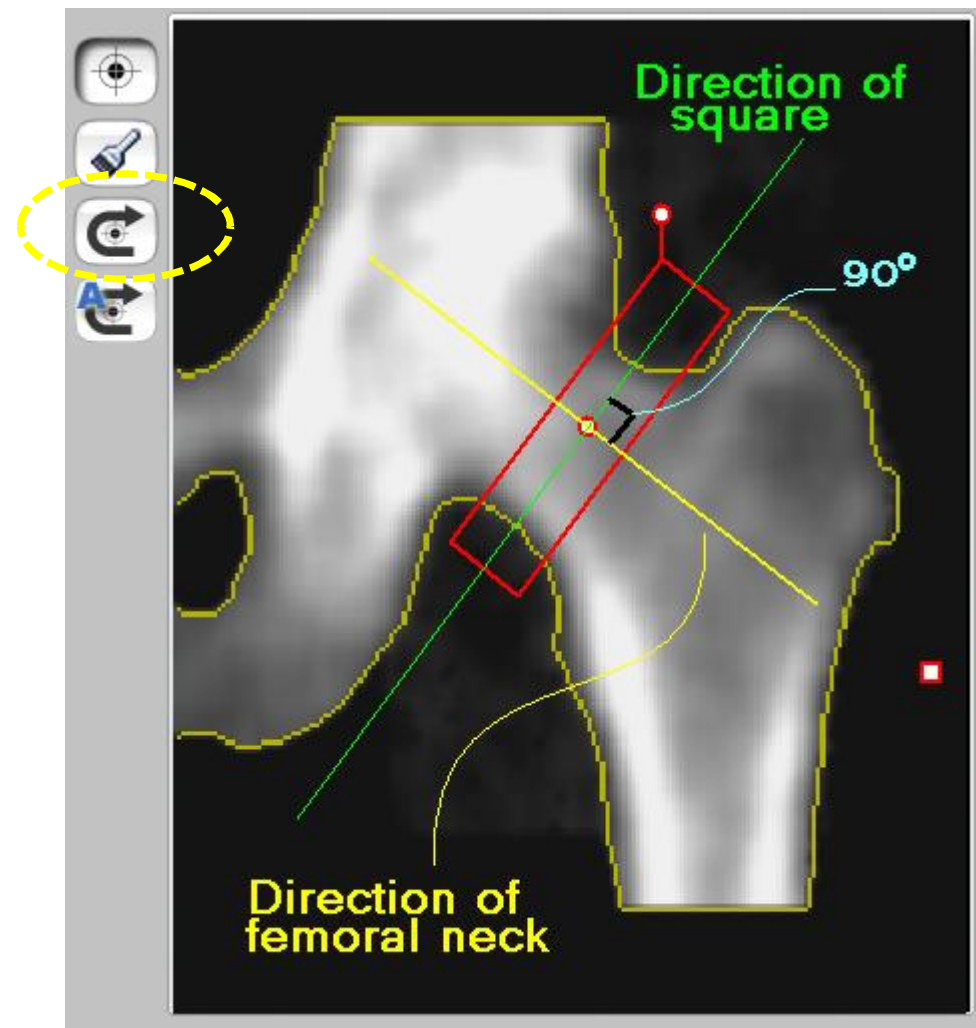
Shaft



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Set ROI

- To set ROI by manual, click the “ROI set” button(yellow circle)
- Adjust angle.
- Red square is the right angle with direction of femur. Also the center of the square is on the center of femoral neck where the dark area(Ward’s triangle).



Set ROI

Rotate angle

Move angle

Apex of triangle

Analysis

Patient Name : 안영복 (38 year)

Spine			
Date	BMD	T-Sc...	
2008-04-01	1.007	-1.5	

Left Femur			
Date	BMD	T-Sc...	
2008-04-01	1.114	1.3	

Right Femur			
Date	BMD	T-Sc...	

Left Forearm			
Date	BMD	T-Sc...	
2008-04-14	0.653	1.1	

Right Forearm			
Date	BMD	T-Sc...	
2007-01-01	0.942	5.9	

BMD(g/cm2) Reference: Neck T-score

BMD(g/cm2)	T-score
1.34	3
1.21	2
0.96	1
0.82	0
0.69	-1
0.56	-2
0.43	-3
0.30	-4
	-5

Information	
Tissue Thickness	16.92 cm
Fat	0.00 %

Region	BMD	T-Score	Z-Score
Neck	1.114	1.3	0.9
Wards	1.100	1.2	1.5
Troch	0.856	0.7	0.2
Shaft	1.171	-	-
Total	1.068	1.0	0.6

Original Image Color Image

Study Comment Patient Comment

Information Spine Left Femur Right Femur Left Forearm Right Forearm

Trend Send PACS Print

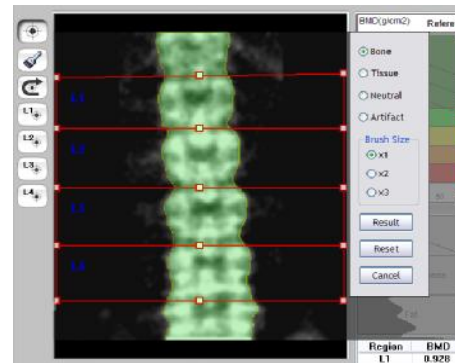
Main menu Patient Measure Analysis

Representative T-score: Neck value

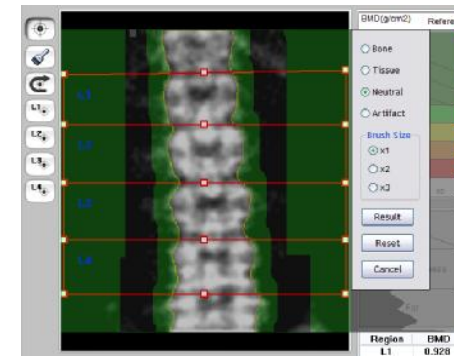
Brush function

- Bone: Showing Bone area only and can add up bone with brush where actual bone was not shown.
- Tissue, Neutral & Artifact are the same method with that of Bone.
- These functions are to compensate any area omitted, incorrect scan or remove any artificial materials in the ROI.

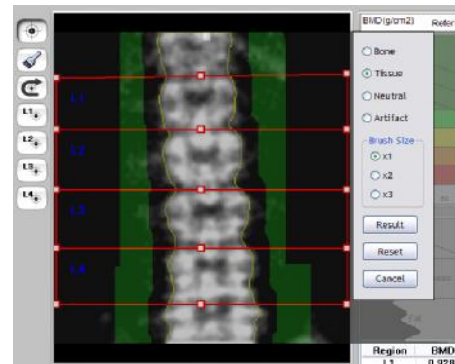
Bone only



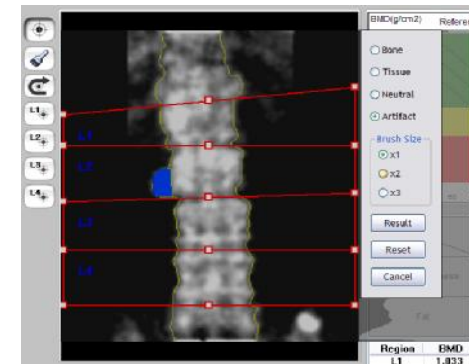
Tissue only



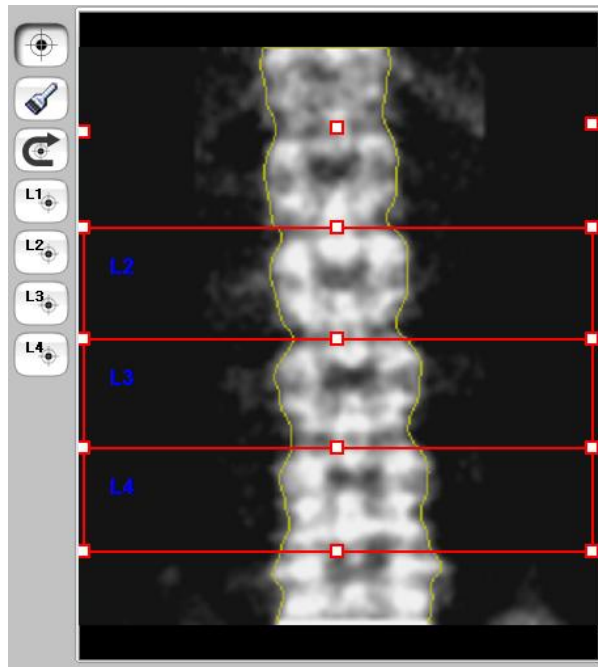
Neutral



Artifact



Edit Spine



Delete L1 : Choose User L1

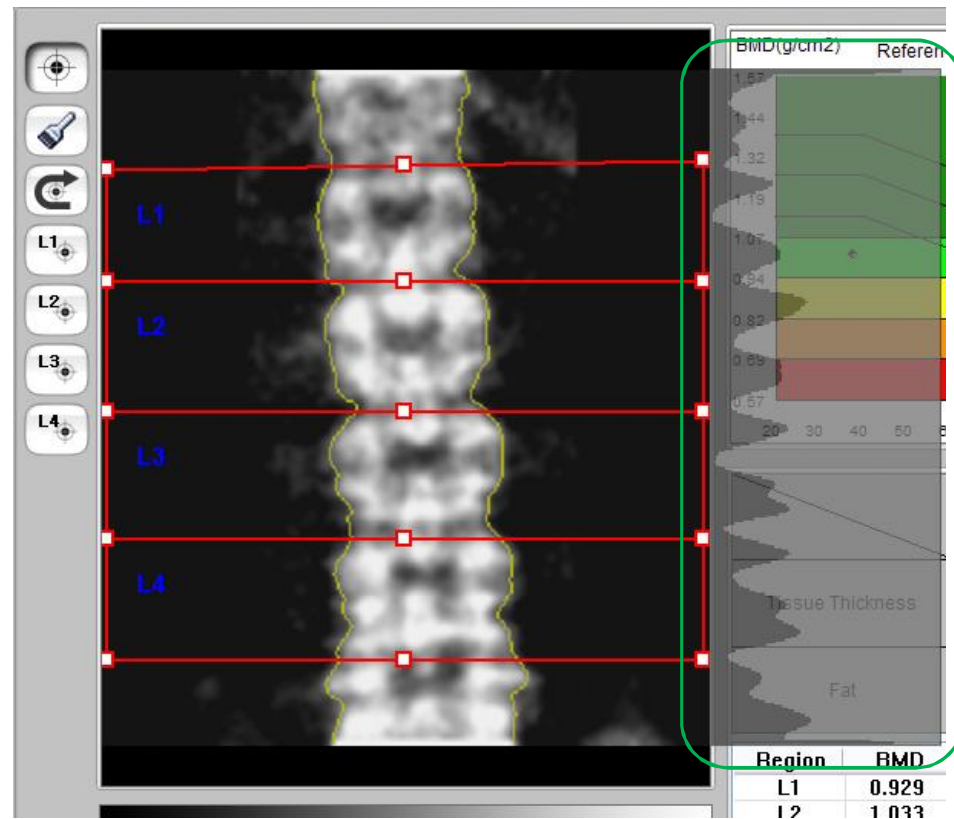
Region	BMD	T-Score	Z-Score
L1	-	-	-
L2	1.031	-1.4	-1.8
L3	0.961	-2.0	-2.4
L4	1.096	-0.9	-1.3
L1-L2	1.031	-1.0	-1.4
L1-L3	0.996	-1.4	-1.8
L1-L4	1.029	-1.3	-1.7
L2-L3	0.996	-1.6	-2.0
L2-L4	1.029	-1.4	-1.9
L3-L4	1.029	-1.5	-1.8

No result in L1

- User can remove any area where do not want to include in the result.
- The above is showing removed L1 and result was removed accordingly.

Histogram

- Histogram shows bone density.
- It is to find ROI easily, find area where bone was pressed.



Report print

Print out analyzed information:
 Spine, Femur .
 Tissue, measure date, Bone length,
 width also can print out

Report

Enter Hospital Name

Enter Hospital Address

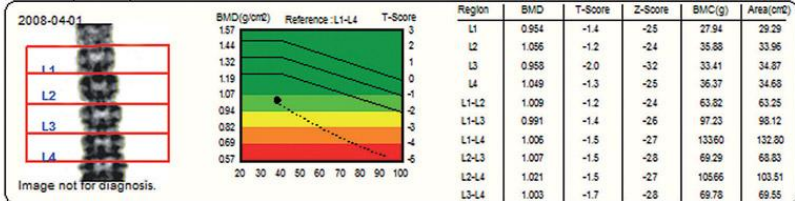
PrintDate : 2008-10-02

Telephone :

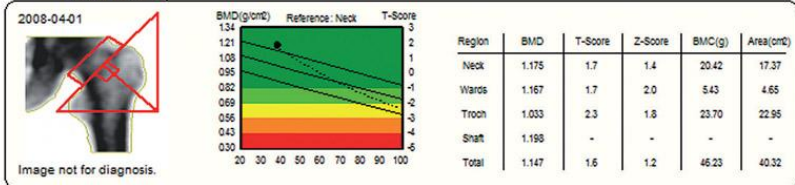
Patient Information

PatientID.....221
 Name.....한성복
 BirthDate.....1970-01-01 (38.7)
 Height.....174.0 cm
 Doctor.....New암비1_0425
 Ethnicity.....European
 Gender.....Male
 Weight.....68.0 Kg
 <Software Ver. 1.0.0.0>

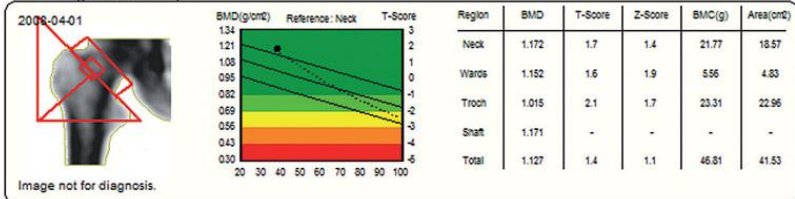
Spine



Left Femur



Right Femur



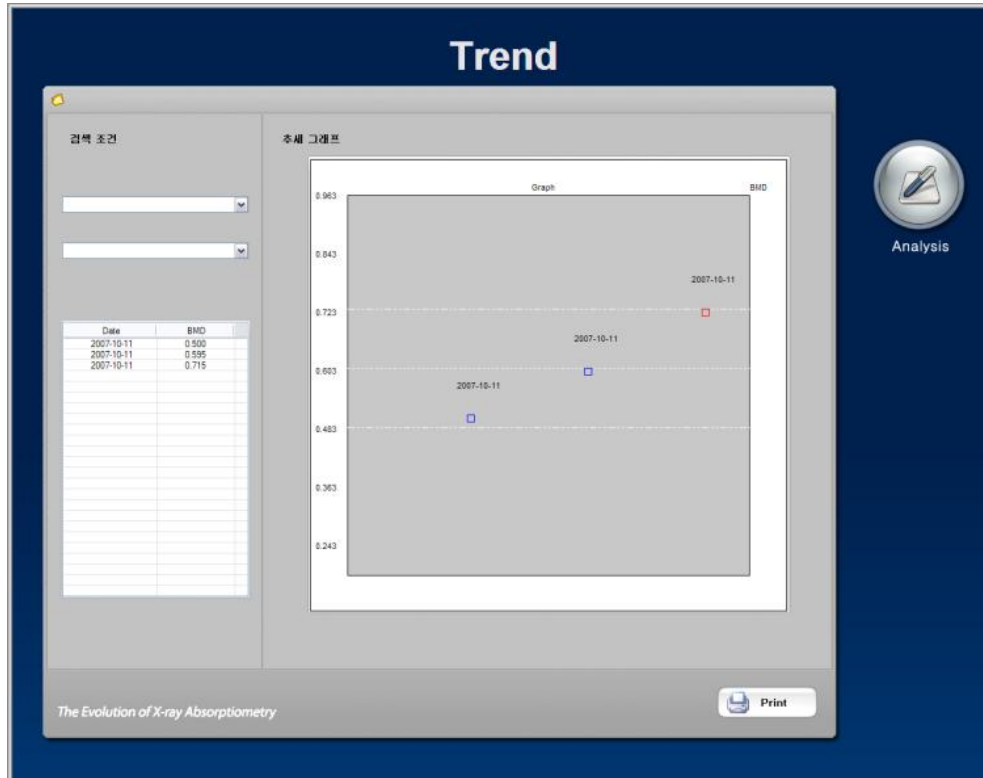
European Reference Population.
 According to the publication of the World Health Organization(WHO)
 - Normal : A BMD result not more than 1SD below the young adult mean(T>=0.1) is considered normal.
 - Osteopenia : A BMD result that lies between 1.0 and 2.5SD below the young adult mean(-1.0 > T > -2.5) indicates osteopenia.
 - Osteoporosis : A BMD result more than 2.5SD below the young adult mean(T < -2.5) is classified as osteoporosis.
 Normal: T > = 1.0
 Osteopenia: -1.0 > T > -2.5
 Osteoporosis: T < -2.5

DEXXUM-T

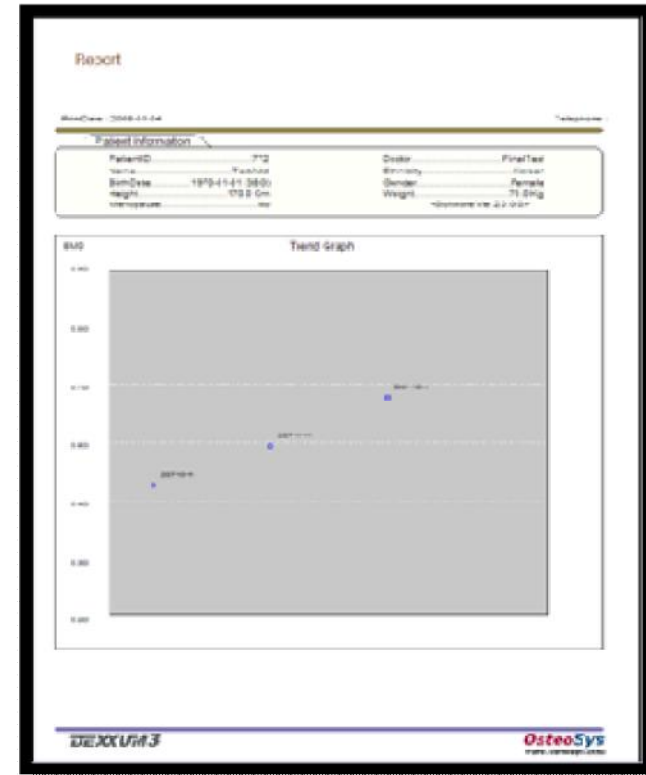
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Trend and print



Monitor image



Printed image

See the patient's Bone Density trend in each site



We look forward to hearing from you
soon.
Thank you!

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