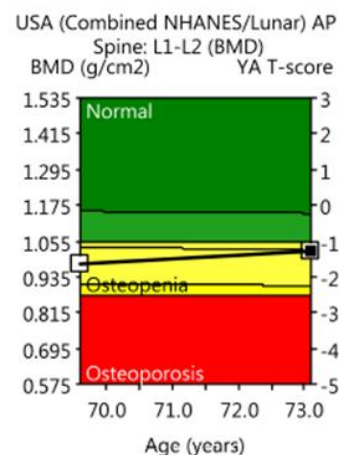
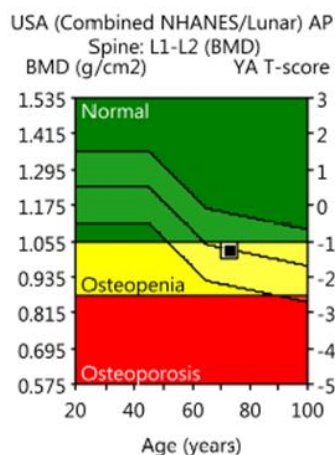
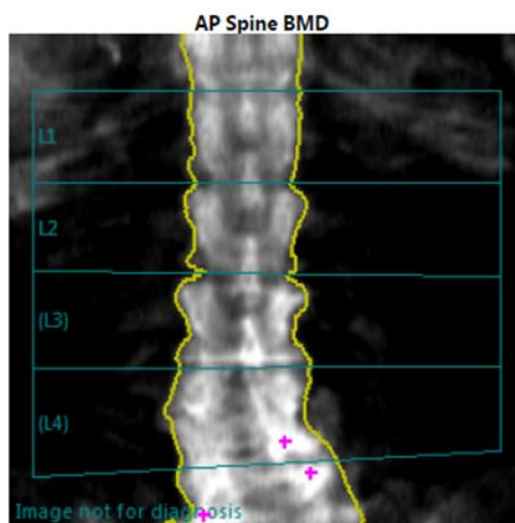


Supplementary Materials

(a)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes), Secondary Osteoporosis, History of Fracture (Adult)	Patient ID :	
Birth Date :	73.1 years			Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Treatment :	No	Measured :	2020/12/10 □ □ 11:35:40
Sex / Ethnic :	Female Asian	Fracture :	FFx1	M.P. Age :	50



COMMENTS: 51739(J)

BMD : USA (Combined NHANES/Lunar)		
Region	BMD (g/cm ²)	Young-Adult T-score
L1	1.017	-1.0
L2	1.024	-1.5
L3	1.175	-0.3
L4	1.428	1.6
L1-L2	1.020	-1.3

BMD Trend : L1-L2				
Measured Date	Birth Date □ years □	BMD (g/cm ²)	Change vs Baseline (%)	Change vs Baseline (%/yr)
2020/12/10	73.1	1.020	4.1 *	1.1 *
2017/5/24	69.6	0.980	baseline	baseline

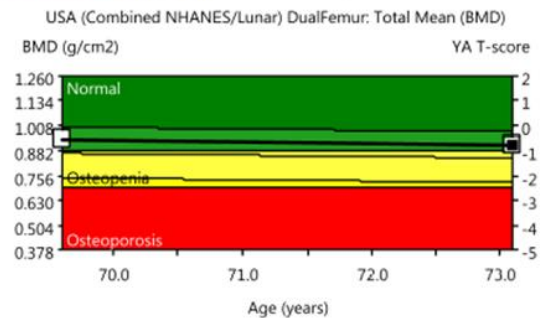
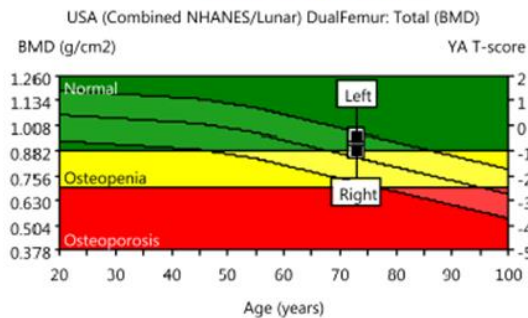
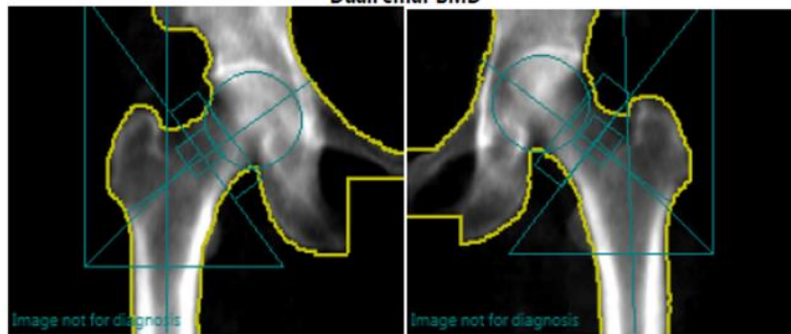
(*) Indicates significant change based on 95% confidence interval. (LSC = 0.036 g/cm² for AP Spine L1-L2); Statistically 68% of repeat scans fall within 1SD (± 0.013 g/cm² for AP Spine L1-L2); USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) AP Spine Reference Population (v113); World Health Organization - Definition of Osteoporosis and Osteopenia for Caucasian Women: Normal = T-score at or above -1.0 SD; Osteopenia = T-score between -1.0 and -2.5 SD; Osteoporosis = T-score at or below -2.5 SD; (WHO definitions only apply when a young healthy Caucasian Women reference database is used to determine T-scores.)
Date created: 2021/10/19 □ □ 03:47:51 15 [SP 1]; Filename: ypt3lq6fp9.dfx; AP Spine; 76:3.00:50.03:12.0 0.00:10.56 0.60x1.05 23.4%Fat=41.0%; 0.00:0.00 0.00:0.00; Scan Mode: Standard;OneScan; 37.0 µGy

(b)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes), Secondary Osteoporosis, History of Fracture (Adult)	Patient ID :	
Birth Date :	73.1 years			Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Treatment :	No	Measured :	2020/12/10 □ □ 11:35:40
Sex / Ethnic :	Female Asian	Fracture :	FFx1	M.P. Age :	50

DualFemur BMD



BMD : USA (Combined NHANES/Lunar)		
Region	BMD (g/cm2)	Young Adult T-score
Neck Left	0.823	-1.5
Neck Right	0.791	-1.8
Neck Mean	0.807	-1.7
Total Left	0.947	-0.5
Total Right	0.886	-1.0
Total Mean	0.916	-0.7

HAL chart results unavailable

Trend : Total Mean				
Measured Date	Measured Age □ years □	BMD (g/cm2)	Change vs Baseline (%)	Change vs Baseline (%/yr)
2020/12/10	73.1	0.916	-0.025 *	-2.7 *
2017/5/24	69.6	0.941	baseline	baseline

(Right = 100.2 mm) (Left = 102.8 mm)

Right = 100.2 mm Avg = N/A mm Left = 102.8 mm

COMMENTS: 51739(J)

(*) Indicates significant change based on 95% confidence interval. (LSC = 0.022 g/cm2 for DualFemur Total); Statistically 68% of repeat scans fall within 1SD (± 0.008 g/cm2 for DualFemur Total); USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) Femur Reference Population (v113); World Health Organization - Definition of Osteoporosis and Osteopenia for Caucasian Women: Normal = T-score at or above -1.0 SD; Osteopenia = T-score between -1.0 and -2.5 SD; Osteoporosis = T-score at or below -2.5 SD; (WHO definitions only apply when a young healthy Caucasian Women reference database is used to determine T-scores.)

Date created: 2021/10/19 □ □ 03:47:46 15 [SP 1]; Filename: ypt3lq6fp9.dfx; ; Left Femur; 76:3.00:50.03:12.0 0.00:10.20 0.60x1.05 19.6%:Fat=33.6%; 0.00:0.00 0.00:0.00; Neck Angle (deg)= 53; Scan Mode: Standard; 37.0 μ Gy; Right Femur; 76:3.00:50.03:12.0 0.00:12.06 0.60x1.05 20.1%:Fat=32.4%; 0.00:0.00 0.00:0.00; Neck Angle (deg)= 54; Scan Mode: Standard; 37.0 μ Gy



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□ □ 1 □ 1

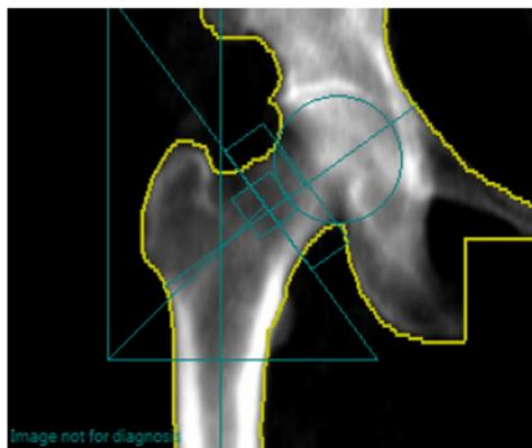
Lunar Prodigy
DF+300285

(c)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes), Secondary Osteoporosis, History of Fracture (Adult)	Patient ID :	
Birth Date :	73.1 years			Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Treatment :	No	Measured :	2020/12/10 □ □ 11:35:40
Sex / Ethnic :	Female Asian	Fracture :	FFx1	M.P. Age :	50

FRAX* 10-year Probability of Fracture
Based on femoral neck BMD □ DualFemur (Right)



Major Osteoporotic □	15.7%
Hip □	4.3%
Population :	Taiwan
Risk Factor :	Secondary Osteoporosis, History of Fracture (Adult)
NOF/ISCD Filters:	None

*FRAX is a trademark of the University of Sheffield Medical School's Centre for Metabolic Bone Disease, a World Health Organization (WHO) Collaborating Centre.

FRAX Version 3.7; The 10-year probability of fracture may be lower than reported if the patient has received treatment; Major Osteoporotic Fracture: Clinical Spine, Forearm, Hip or Shoulder
Date created: 2021/10/19 □ □ 03:47:47 15 [SP 1]; Filename: ypt3lq6fp9.dfx; Right Femur; 76:3.00:50.03:12.0 0.00:12.06 0.60x1.05 20.1:%Fat=32.4%; 0.00:0.00 0.00:0.00; Neck Angle (deg)= 54; Scan Mode: Standard; 37.0 µGy; Left Femur; 76:3.00:50.03:12.0 0.00:10.20 0.60x1.05 19.6:%Fat=33.6%; 0.00:0.00 0.00:0.00; Neck Angle (deg)= 53; Scan Mode: Standard; 37.0 µGy;

(d)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes)	Patient ID :	
Birth Date :	73.1 years	Treatment :	No	Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Fracture :	FFx1	Measured :	2020/12/10 11:28:52
Sex / Ethnic :	Female Asian			M.P. Age :	50

LVA Morphometry

Region	Avg. Ht.	P/A Ratio	M/P Ratio	A/P Ratio
	□ %□	□ %□	□ %□	□ %□
L2	103	102	95	98
L3	101	99	97	101
L4	96	101	97	99

COMMENTS: 51739(J)

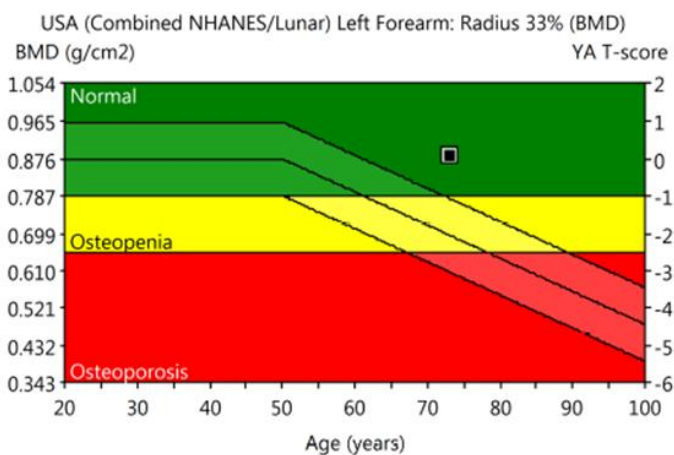
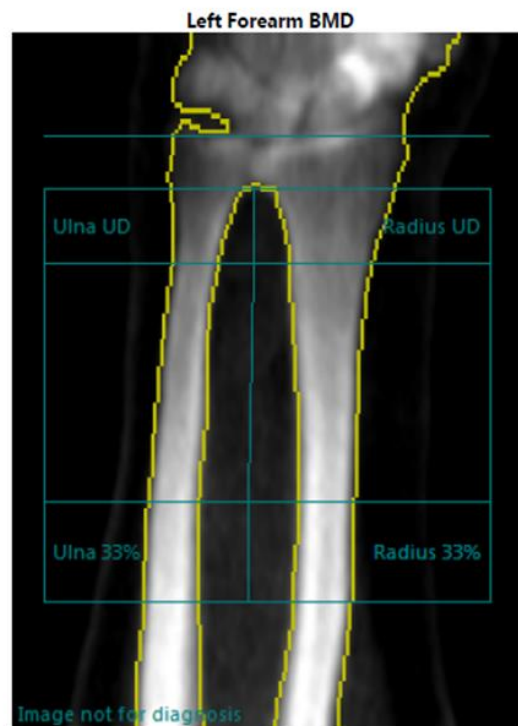
Reference based on L2, L3, and L4; The precision ($\pm 1SD$) is 1mm for heights and 0.05 for ratios
Date created: 2021/10/19 03:45:40 15 [SP 1]; Filename: nit3lq6fp9.dfm; LVA: 76.3.00:22:24:54.
0 0.00:17.92 1.20x1.05 26.9%Fat=24.6%; 0.00:0.00 0.00:0.00; Scan Mode: Standard; 83.0 μ Gy



(e)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes), Secondary Osteoporosis	Patient ID :	
Birth Date :	73.1 years			Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Treatment :	No	Measured :	2020/12/10 □ □ 11:44:06
Sex / Ethnic :	Female Asian	Fracture :	FFx1	M.P. Age :	50



BMD : USA (Combined NHANES/Lunar)

Region	BMD (g/cm ²)	Young-Adult T-score
Radius 33%	0.882	0.1

COMMENTS: 51739(J)

Statistically 68% of repeat scans fall within 1SD (± 0.020 g/cm² for Left Forearm Radius 33%); USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) Forearm Reference Population (v113); Lunar calibration in use.; World Health Organization - Definition of Osteoporosis and Osteopenia for Caucasian Women: Normal = T-score at or above -1.0 SD; Osteopenia = T-score between -1.0 and -2.5 SD; Osteoporosis = T-score at or below -2.5 SD; (WHO definitions only apply when a young healthy Caucasian Women reference database is used to determine T-scores.)

Date created: 2021/10/19 □ □ 03:49:03 15 [SP 1]; Filename: wau3lq6fp9.dfa; Left Forearm; 76:0.15:50.03:12.0 0.00:6.20 0.60x1.05 5.0:%Fat=42.3%; 0.00:0.00 0.00:0.00; Forearm Length: 25.1 cm; Scan Mode: Standard;Not seated; 2.0 μ Gy



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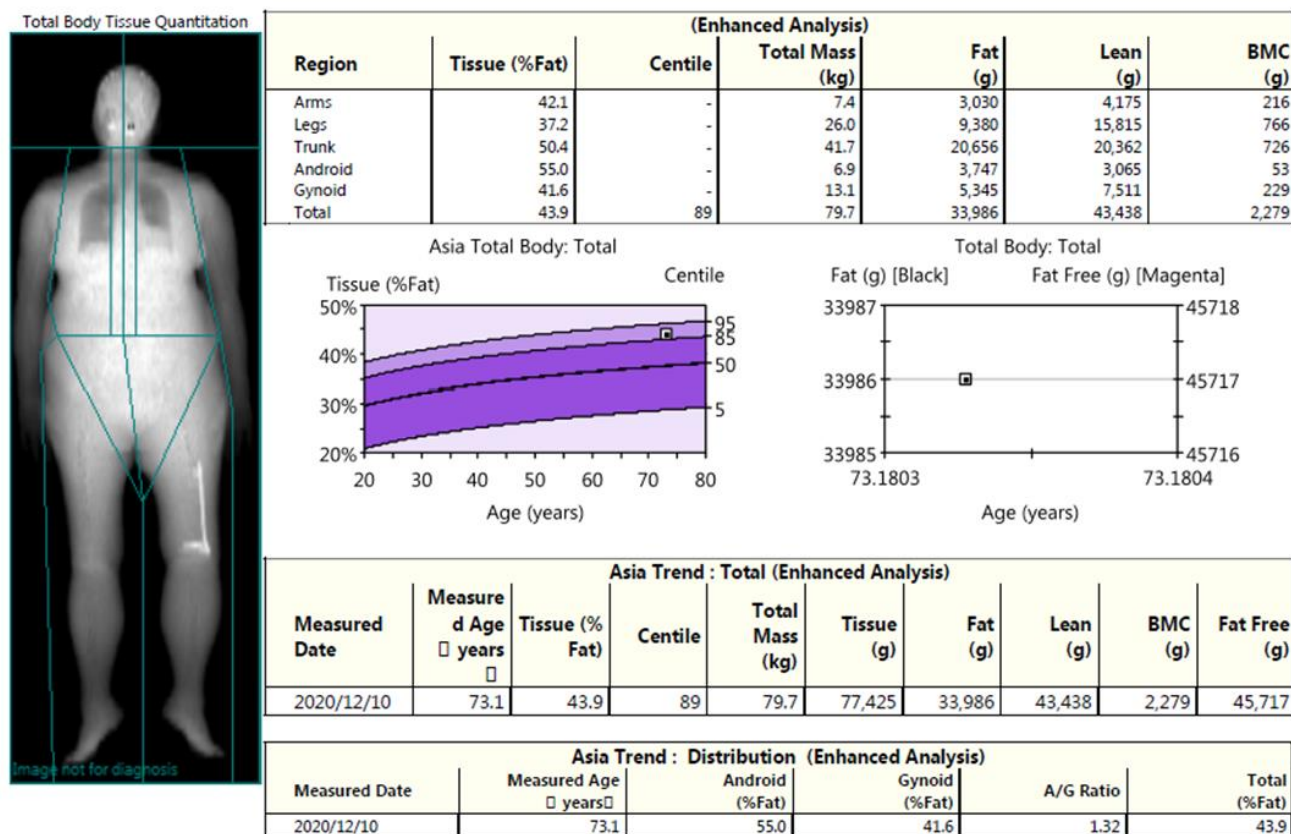
□ □ 1 □ 1

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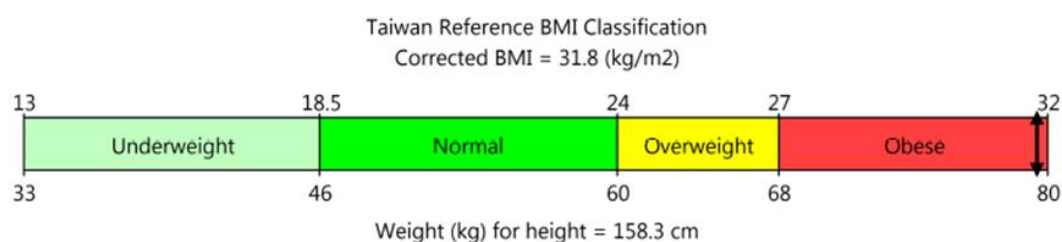
(f)

Taipei Municipal Wan Fang Hospital
No.111, Hsing-Long Road, Sec. 3, Taipei 116, Taiwan, R.O.C.,
(02) 2930-7930 ext:1301

Patient :		Indications :	Menopause (Yes), Secondary Osteoporosis	Patient ID :	
Birth Date :	73.1 years	Treatment :	No	Exam ID :	
Height / Weight :	158.3 cm 79.8 kg	Fracture :	FFx1	Measured :	2020/12/10 11:52:17
Sex / Ethnic :	Female Asian			M.P. Age :	50



Appendicular Skeletal Muscle Index(ASMI): 7.98 kg/m²



Statistically 68% of repeat scans fall within 1SD ($\pm 0.8\%$ Fat, ± 210 g Tissue Mass, ± 520 g Fat Mass, ± 610 g Lean Mass for Total Body Total); Asia Total Body Composition Reference Population (v111); Composition Matched for Age
Date created: 2021/10/19 03:49:30 15 [SP 1]; Filename: mgu3lq6fp9.dfb; Total Body: 76:0.15:153.04:31.4 0.00:-1.00 4.81x13.01 13.1:%Fat=43.9%; 0.00:0.00 0.00:0.00; Scan Mode: Standard; 0.4 μ Gy

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□ □ 1 □ 1

Lunar Prodigy
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Figure S1. DXA report example: (a) AP spine BMD; (b) Dual femur BMD; (c) FRAX* 10-year probability of fracture; (d) LVA Morphometry; (e) Left forearm BMD; (f) Body composition.

(a)

Patient Name: Patient ID: Birth Date: Measured: 2020/12/10

Baseline bone mineral density (BMD) quantification of a 73.1-year-old postmenopausal woman (postmenopausal at 50 years old) at multiple skeletal sites was performed using a dual-energy X-ray absorptiometry scanner (GE-Lunar Prodigy) on 2020/12/10.

Results:

The T-score is calculated using a USA combined (NHANES, ages 20-30/Lunar, ages 20-40) AP spine and femur reference population.

> BMD at the lumbar spine: average BMD at L1-L2 is 1.020 g/cm².

(L3 and L4 not quantified due to artifacts / osteophytes / sclerosis / adjacent score > 1) (not an automatic selection; this must be selected by a reporting doctor).

>BMD at the left proximal femur: femoral neck is 0.823 g/cm² and total femur is 0.947 g/cm².

>BMD at the right proximal femur: femoral neck is 0.791 g/cm² and total femur is 0.886 g/cm².

>BMD at the left forearm: radius 33% is 0.882 g/cm².

>BMD at the right forearm: radius 33% is N/A g/cm².

>VFA: No vertebral compression fractures are noted.

>VFA: Compression fracture at N/A is noted.

>Lowest T-score is -1.8.

Baseline densitometric assessment:

>Densitometric assessment:

-2.5 < T-score < -1.0

>The BMD fulfills the WHO densitometric classification for:

*Low Bone Mass. (not an automatic diagnosis; this must be filled out by a reporting doctor).

> Integrated assessment:

***Osteoporosis due to left femur fracture.** (not an automatic diagnosis; this must be filled out by a reporting doctor).

>Because the T-score is between -1.0 and -2.5, the FRAX™ 10-year probability calculation shows that:

*The risk for any major osteoporosis-related fracture is 15.7%

*The risk for hip fracture is 4.3%

Follow up densitometric assessment:

>The interval significant change of total hip BMD is -2.7%/yr as compared to BMD measured on 2017/5/24.

Recommendations:

This is a baseline study. Follow-up studies are recommended as follows:

-Normal BMD: Consider monitoring (at postmenopause) in 1 year.

-Low bone mass: Consider monitoring in 1-2 years to assess the patient's response to therapy.

-Osteoporosis: Consider monitoring in 1-2 years to assess the patient's response to therapy.

Notes:

-T-score (mean value for young healthy individuals) is applied only to postmenopausal women or men at least 50 years old.

-Z-score (mean value for those of the same age) is applied only to premenopausal women, children, or men younger than 50 years.

-T-score Normative Database: A uniform Caucasian non-race-adjusted female normative database for both women and men of all ethnic groups, based on the 2019 ISCD Official Position.

-WHO definitions apply only when a reference database of young healthy Caucasian women is used to determine T-scores.

(b)

Quantification of total body tissue and whole body composition analysis were performed using a dual-energy X-ray absorptiometry scanner (DXA; Prodigy, GE-Lunar, USA).

Findings:

1. Percentage of fat tissue across the entire body is **43.9%**.
2. Total body mass is **79.7** kg which is composed of **33.986** kg fat, **43.438** kg lean mass, and **2.279** kg BMC (bone mineral content).
3. Fat distribution is predominantly Android (**55.0%**) and Gynoid (**41.6** %). The A/G ratio is **1.32**.
4. Body mass index (BMI) is **31.8**.
5. Handgrip strength is ____ kg. (*this must be filled out by a reporting doctor*)
6. Appendicular skeletal muscle index (ASMI) is **7.98** kg/m².

Assessment:

1. The body status as indicated by BMI is **Moderate obesity**.

Remarks:

BMI indicates body status as follows: <18.5 is underweight, 18.5-<24 is normal, 24-<27 is overweight, 27-<30 is mild obesity, 30-<35 is moderate obesity, and ≥ 35 is marked obesity (Criteria from the Ministry of Health, Taiwan).

2. The percentage of fat tissue in the entire body is within the **89th** percentile using an Asian reference population.

3. Handgrip strength is normal. (*this must be selected by a reporting doctor*)

Handgrip strength is low.

Remarks: ASIAN WORKING GROUP OF SARCOPENIA(AWGS)

Low handgrip strength: <22.4 kg for men, <14.3 kg for women.

4. Normal muscle mass. (*this must be selected by a reporting doctor*)

Remarks: ASIAN WORKING GROUP OF SARCOPENIA(AWGS)

Low muscle mass: ASMI (RSMI or ASM/ht²) <7.0 kg/m² for men, <5.4 kg/m² for women.

Integrated assessment: (*this must be selected by a reporting doctor*)

No sarcopenia.

Sarcopenia.

Sarcopenia probable.

Recommendations:

1. This is a baseline study, and a follow-up study is recommended when body weight changes 5% to 10%.
2. In clinical practice, a patient with low handgrip strength and normal muscle mass should be assessed for causes, and intervention should be initiated.

Figure S2. Report Templates. (a) the BMD report template; (b) the whole body composition report template. Data shown in red are auto-filled by the reporting system.