GE HealthCare

Bone & Metabolic Health

enCORE v18
Powerful New DXA Clinical Applications

gehealthcare.com/bmh

Announcing the latest innovation in DXA software, enCORE v18. Making our DXA products even more powerful.*
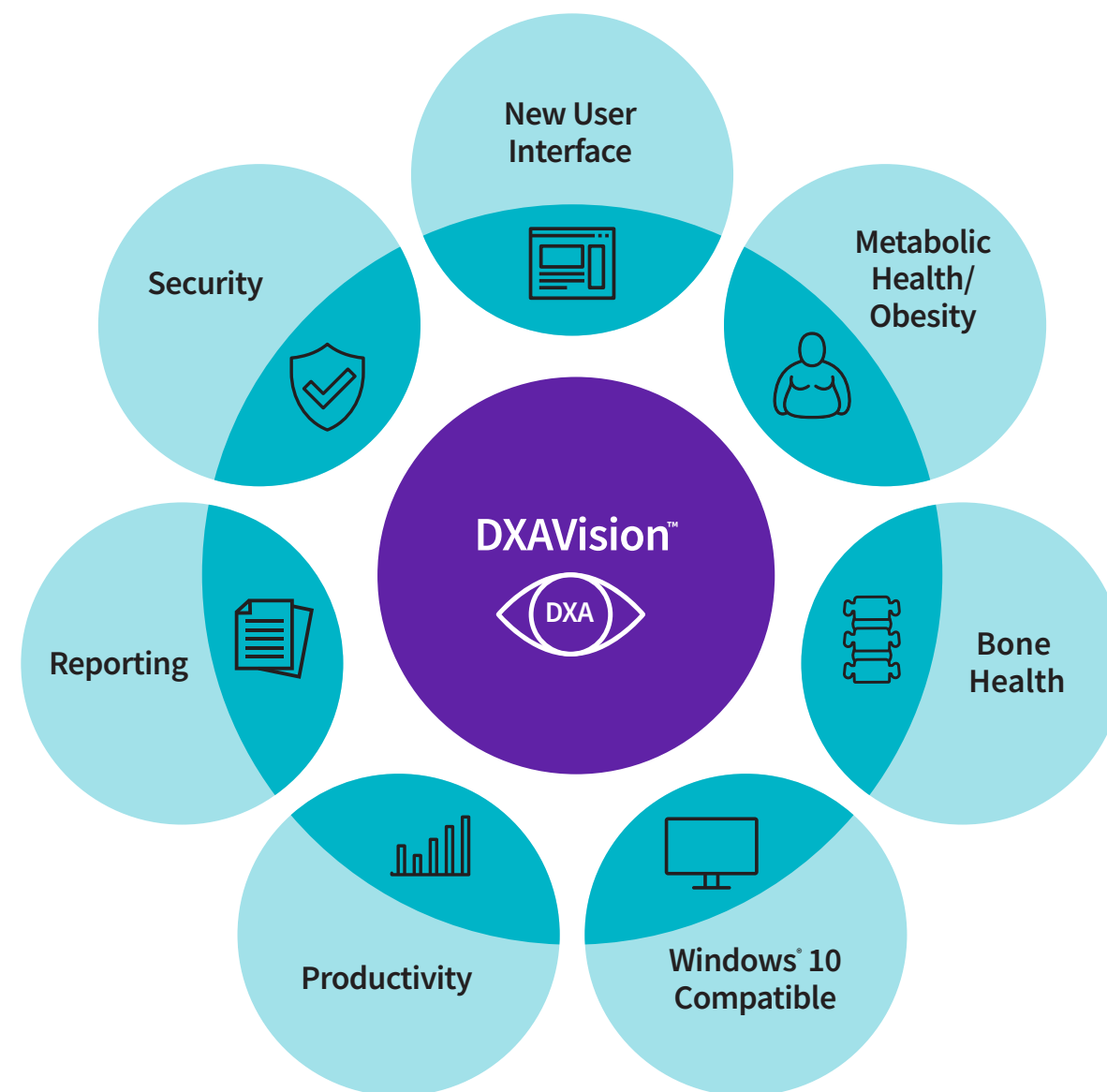
Introducing enCORE v18

Powerful New Clinical Applications for Greater Bone and Body Composition Insights

Featuring new DXAVision™ technology.

DXAVision™ provides BMD and Body Composition in one easy, unified workflow. The DXAVision™ scan is designed to improve operator efficiency, resulting in a DXA scan that is up to 40% faster[1] and a better experience for your patients.

- New User Interface
- Metabolic Health/ Obesity
- Bone Health
- Windows® 10 Compatible
- Productivity
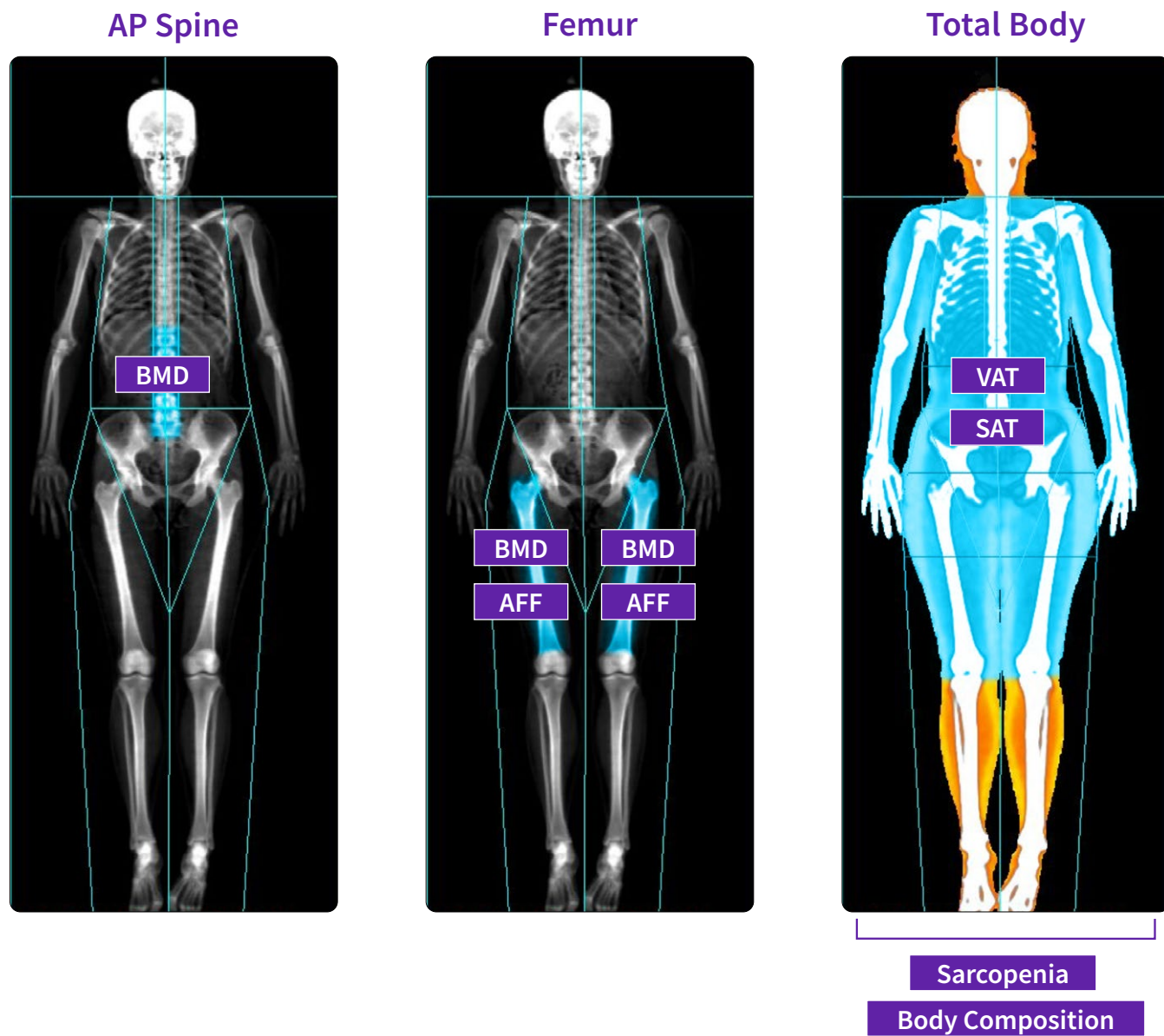- Reporting
- Security
- DXAVision™ DXA

*Compared to enCORE v17.

2

Smarter Scanning with DXAVision™
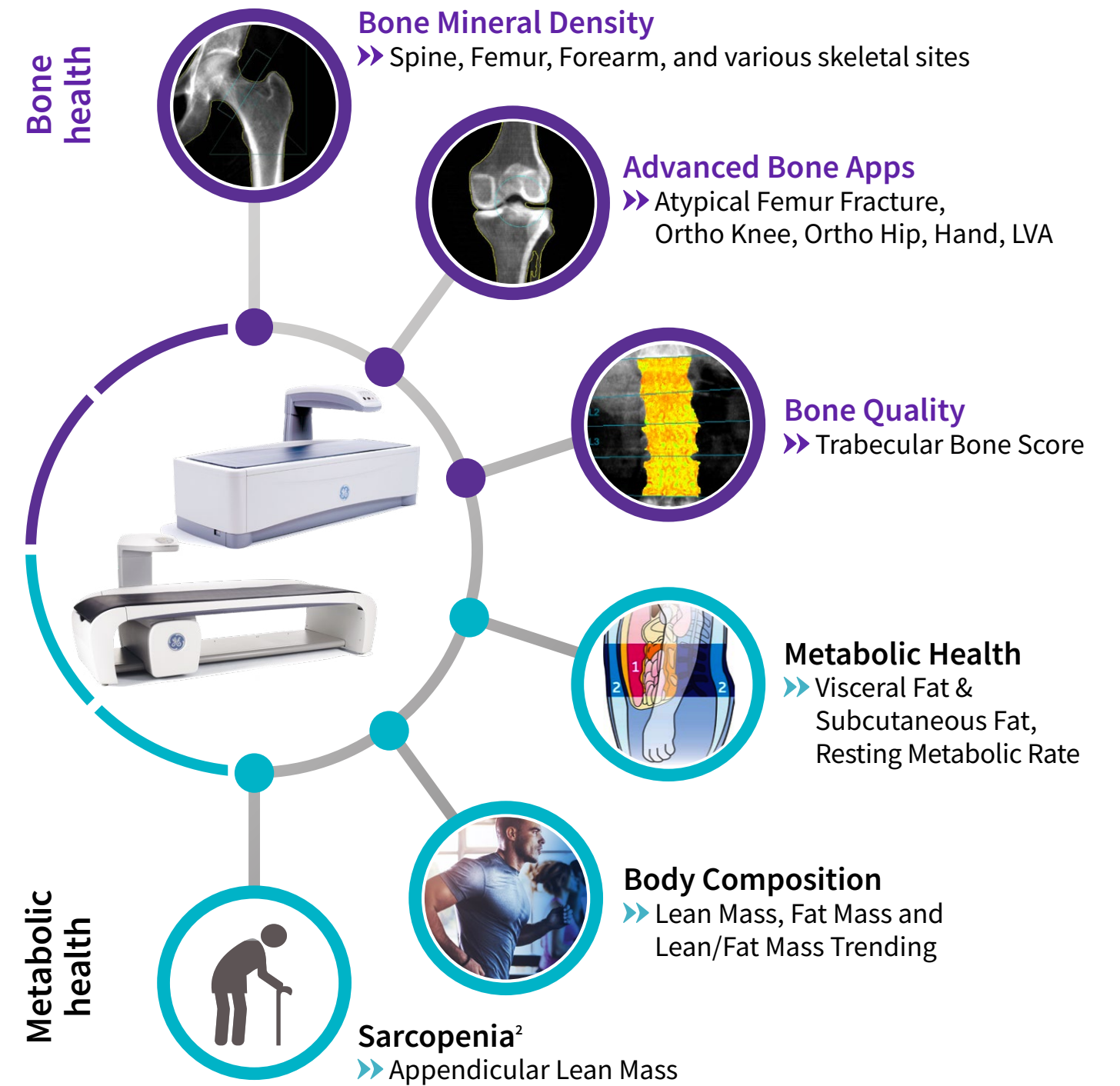
One Unified Workflow for BMD, AFF, VAT and SAT

• Body Composition provides comprehensive reporting that includes Subcutaneous Adipose Tissue (SAT) and Visceral Adipose Tissue (VAT) measurements

• One scan sequence captures BMD for AP Spine, Femur and Total Body, plus Body Composition

• Includes estimated Sarcopenia measurement

• Easy-to-use customization of sequencing for skeletal site exams

This feature requires CoreScan.

AP Spine   **Femur**   **Total Body**

BMD

BMD   BMD

AFF   AFF

VAT

SAT

Sarcopenia

Body Composition

Same precision and accuracy. Up to 40% Faster scan time:[1]

Versatility of DXA Technology

Bone health

Bone Mineral Density
›› Spine, Femur, Forearm, and various skeletal sites

Advanced Bone Apps
›› Atypical Femur Fracture, Ortho Knee, Ortho Hip, Hand, LVA

Bone Quality
›› Trabecular Bone Score

Metabolic Health
›› Visceral Fat & Subcutaneous Fat, Resting Metabolic Rate

Body Composition
›› Lean Mass, Fat Mass and Lean/Fat Mass Trending
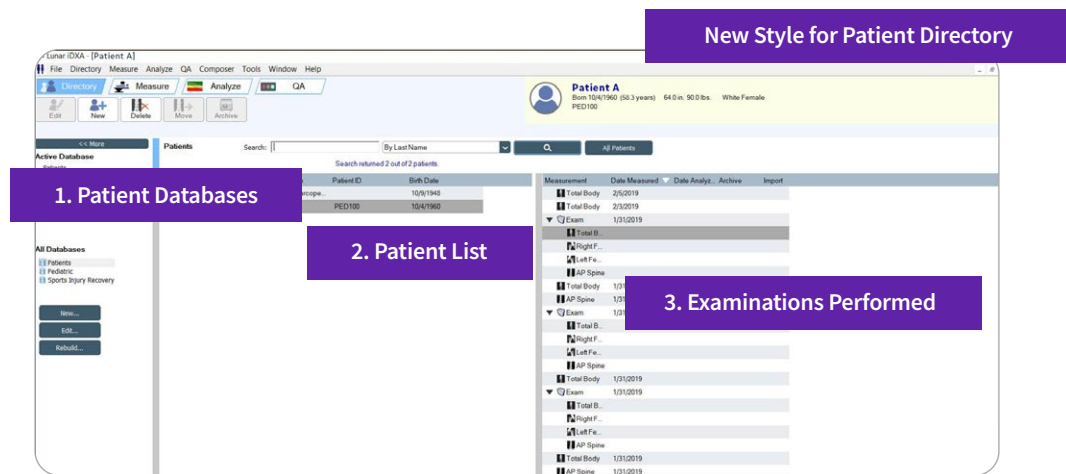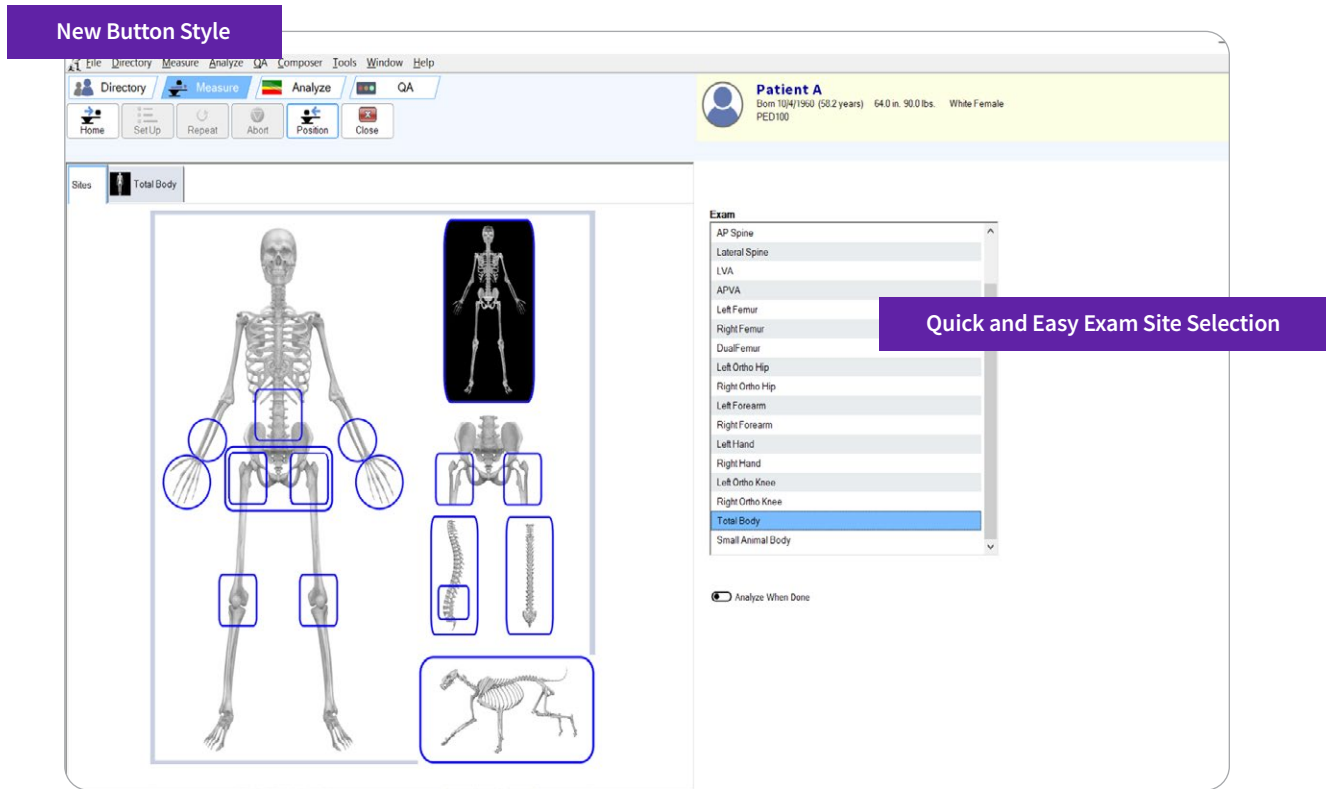
Sarcopenia[2]
›› Appendicular Lean Mass

Metabolic health

A New Modern Interface

Same Efficient User Workflow

enCORE v18's interface offers intuitive navigation, plus quick access to exam site selection options.

New Button Style

Quick and Easy Exam Site Selection

New Style for Patient Directory

1. Patient Databases

2. Patient List

3. Examinations Performed

New Advancements in Bone Health

Integrated TBS for Greater Clinical Insights

Integrated TBS[3] is an optional software application that uses DXA scans to estimate bone texture and assess bone micro-architecture.

These additional clinical decision tools can be helpful for patients with borderline BMD T-scores:

		BMD T-score*		
		Normal	Osteopenia	Osteoporosis
TBS**	Normal	(green)	(yellow)	(orange)
	Partially Degraded	(yellow)	(yellow)	(orange)
	Degraded	(yellow)	(orange) ▪	(red)

* BMD T-score is the min value of spine, total hip, and femoral neck.
** Spine TBS L1-L4 Normal microarchitecture > 1.310; Degraded <= 1.230

Normal	Moderate	Low	Severely Low

Color coded bone resilience zones based on Fracture Risk[2]

Bone Resilience Index
A combination of BMD T-score and TBS categories.

Color zones indicate level of fracture risk.[4]

4 Therapeutic Decision Tools

The FRAX 10-year probability of fracture:

Type of Fracture	Risk	Risk Adjusted for TBS*
Major Osteoporotic	13.7 %	10.6 %
Hip	0.3 %	0.2 %

* Validated only for Caucasian and Asian women and men.[4] Refer to local guidelines before using these values.
Reported Risk Factors besides BMD: Family Hist. (Parent hip fracture)
[4] Calcif Tissue Int. 96, 500-509 (2015)

The BMD T-score:

Bone Site	BMD T-score	BMD T-score adjusted for TBS*
AP Spine: L1-L4	0.7	1.8
Left Femur: Neck	-0.4	0.1
Left Femur: Total	**-0.6**	-0.2
Right Femur: Neck	-0.2	0.3
Right Femur: Total	-0.3	0.2

* Validated for Caucasian women only.[3]
The grayed cell is the minimum value.

Insights for Borderline Decisions
A combination of BMD T-score and TBS categories.

Additional scores for:

- FRAX Risk adjusted for TBS[3]
- BMD T-score adjusted for TBS

Seamless workflow with BMD, TBS and FRAX together

Save time and improve productivity with an integrated workflow that provides analysis and reporting together within your DXA dashboard, along with comprehensive and fast reporting.

6 Conclusion

The Lumbar spine TBS is 1.464 which suggests a normal microarchitecture compared to reference population.

The patient's associated BMD and TBS values suggest a Normal resilience to fracture.

Furthermore, the minimum BMD T-Score (either adjusted or not for TBS), positions the patient in the Normal category equivalent.

The patient's FRAX results should be interpreted in regard to the intervention thresholds provided by national medical guidelines.

Final decision regarding diagnostic or therapeutic recommendations should include BMD, TBS, additional clinical risk factors as well as the clinical context of the patient.
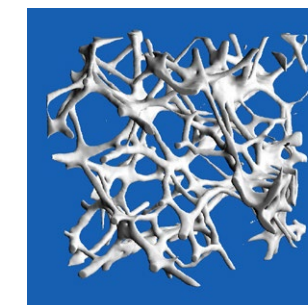
Automated Conclusion
Pre-formatted patient reports combine actual results together with conclusions.

World Health Organization

**Systemic skeletal disease characterized by low bone mass and a micro-architectural deterioration of bone tissue…
leading to fracture**
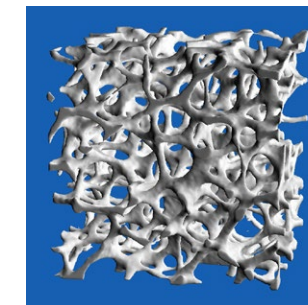
Normal

Osteoporotic

TBS is a clinical tool to help understand bone architecture

A clinical study showed that a combination of spine TBS and BMD T-score was superior in fracture prediction to either measurement alone.[5]

16% of subjects were re-classified with the addition of TBS. Those in the BMD T-score Osteopenia + Degraded TBS were identified with Low Bone Resilience and at higher risk for Major Osteoporotic Fracture (MOF).

New Advancements in Metabolic Health

## Newly Available: VAT Area and SAT Results[2,7]

Within CoreScan,™ view detailed reporting of adipose tissue and gain greater insights into trends of body composition over time. See separate SAT and VAT results, with details including volume, mass and area for each.
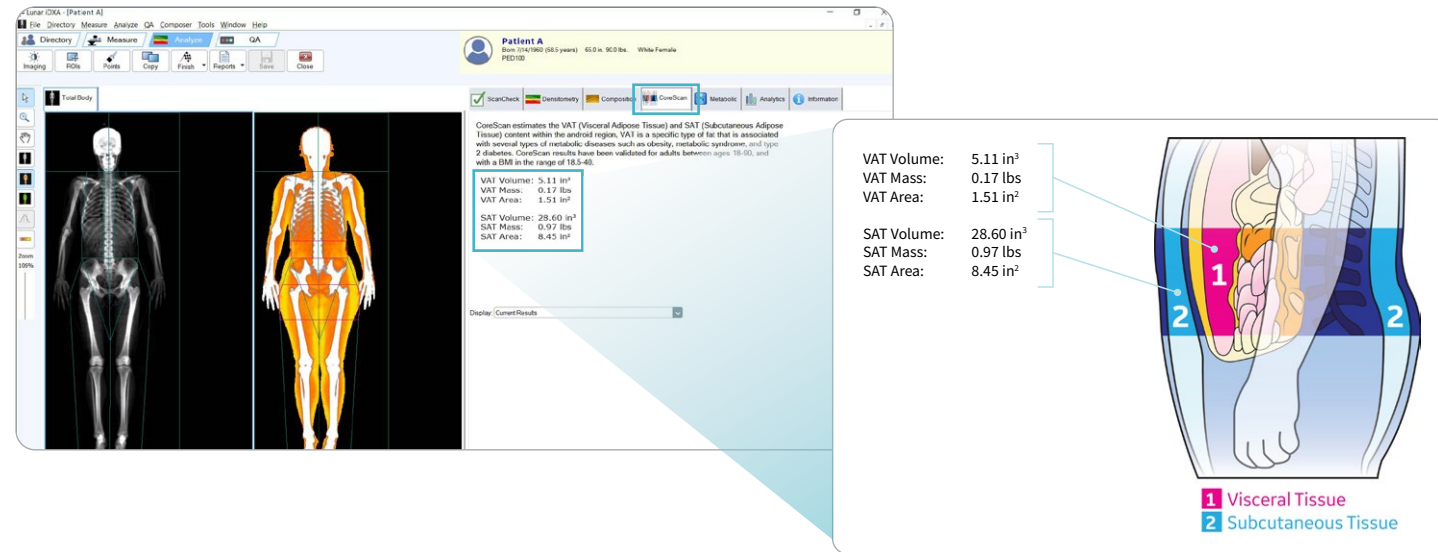
Body Composition Insights using VAT Customizable Thresholds[2,6,7]

VAT user customizable threshold offers the ability to set thresholds for the visceral adipose tissue fat (VAT) measured on a patient or an athlete after a total body scan and help in drawing correlation between VAT and metabolic disorders such as diabetes, cardiovascular diseases, and obesity.

VAT or SAT Customizable Threshold is a metric that can be set up on the Analytics Dashboard through the Advanced Analytics Feature.
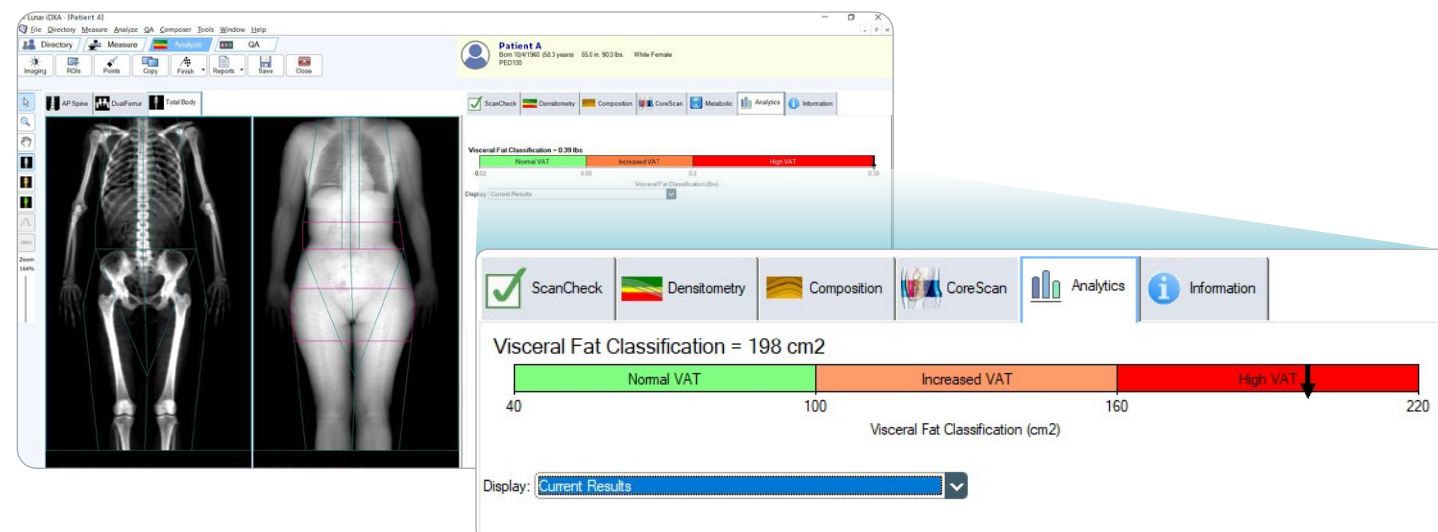
Smaller Body Composition Regions of Interest[8]

Easily monitor and report on regions of interest (ROI) including upper arm, lower arm, upper leg and lower leg. This tool enables the ability to study changes in body composition in these regions.

Suitable for sports medicine professionals and researchers needing to monitor changes in lean mass.

Upper arm

Lower arm

Upper leg

Lower leg
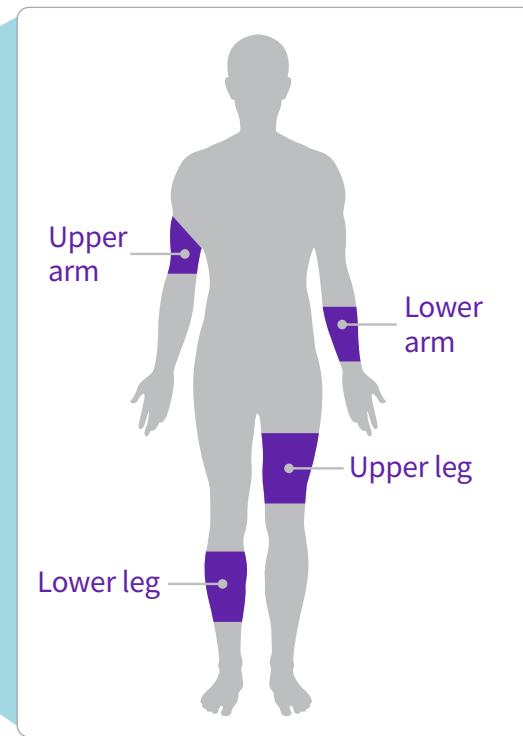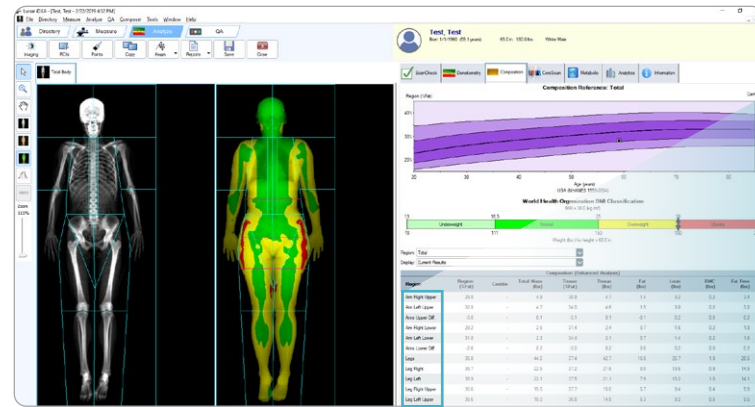
Flexible Scanning Options

Total Body Less Head (TBLH) for Adults[8] is an optional feature that excludes the head, scanning from the neck through the rest of the body. Including the head can mask changes occurring in the rest of the skeleton.

Ideal for assessing athletes and taller patients that may not fit on the scan window.

"Neck-to-Knee" Scan for Adults[9] is an optional feature that performs an even faster scan, that estimates total body composition, starting from just below the chin to the knee caps.

Suitable for athletes as well as patients that may be challenged with the longer scan time of a traditional total body scan.

Scan

Scan

Total Body Less Head[8] (TBLH) (Exclude head)

Neck to Knee[9] (Exclude head and lower legs)
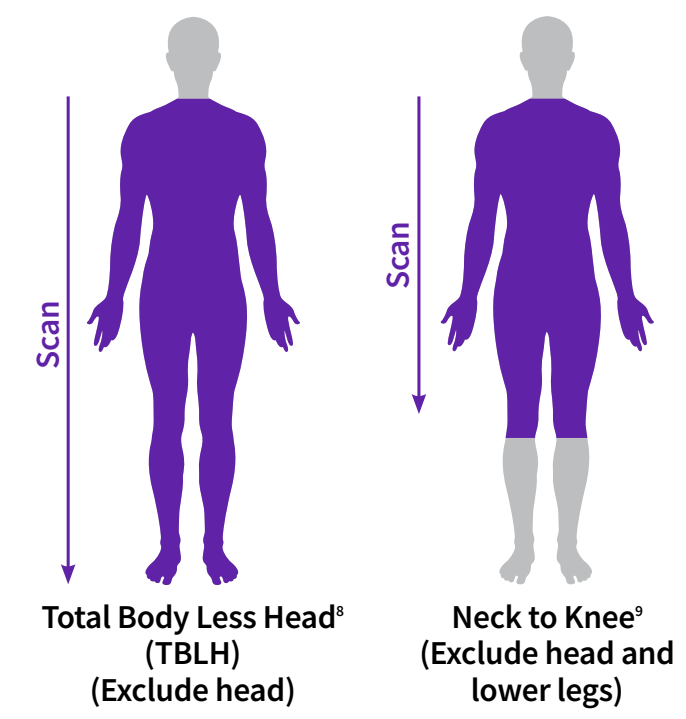
Improved Reporting Capabilities

Improved Composer™ Reporting

Improved Composer™ Reporting offers a WYSIWYG (What you see is what you get) interface to easily insert DXA bone & body composition parameters, patient demographic data, DXA images, and external images to easily create rich Composer Reporting stylesheets.
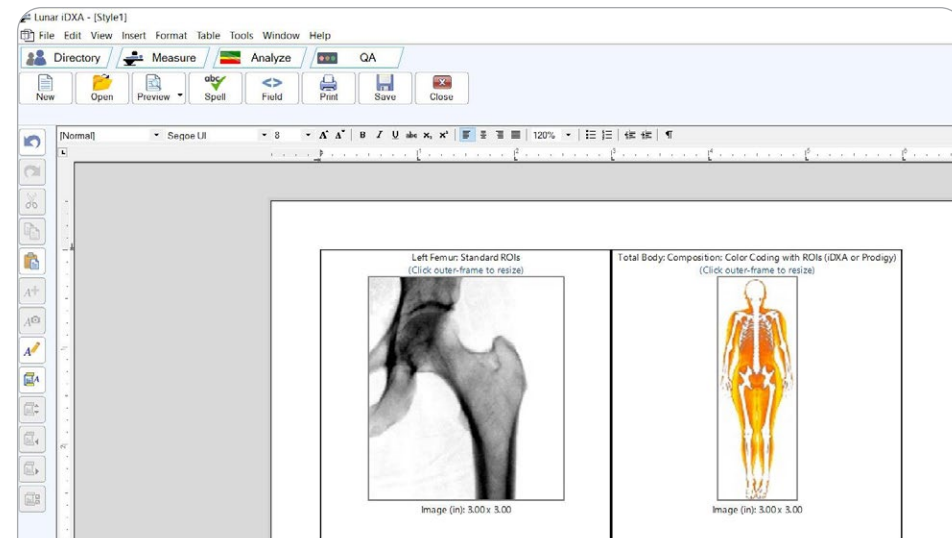
Composer reports are created from default style sheets that you can create and edit. The contents may include images, measured results, charts, trend information, and other information such as automated assessments and recommendations.

Ability to insert DXA bone and body composition parameters, along with ability to also import custom metrics created through the Advanced Analytics feature.
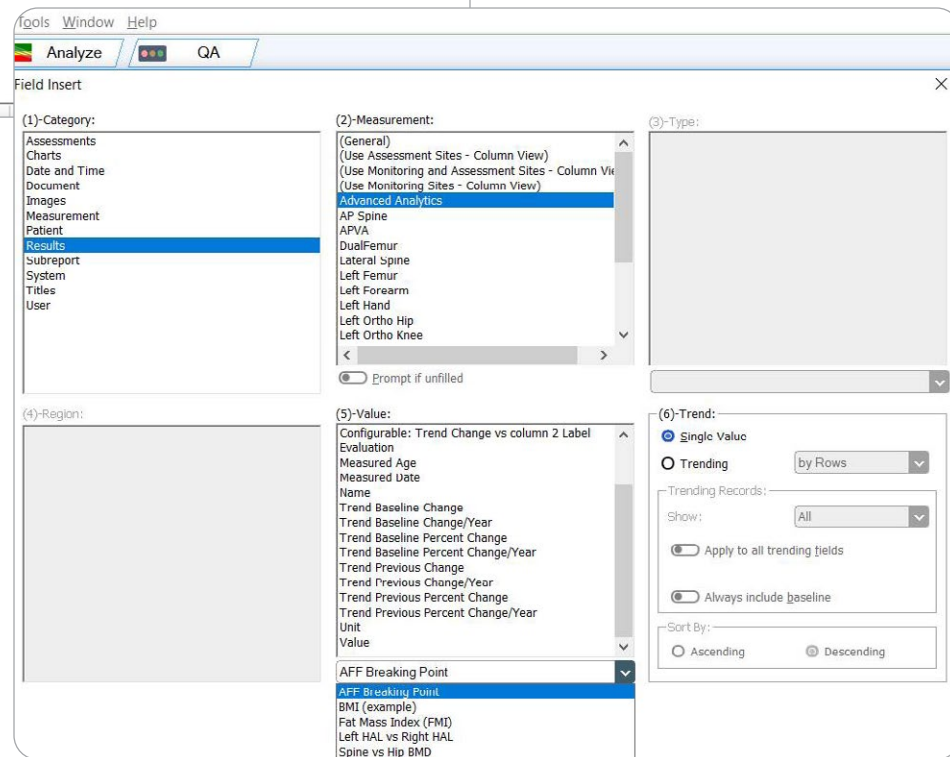
Advanced Analytics

Remarkable Tools for DXA

Advanced Analytics is a remarkable tool that provides deep BMD and body composition insights to:

• Sports Medicine Professionals

• Bone and Body Composition Researchers

• Clinicians

This tool allows users to easily create custom equations and metrics. Use Advanced Analytics within your DXA system to:

• Create custom metrics and ratios based on 200+ DXA bone and body composition parameters

• Set user-defined classification thresholds

• Create actionable patient goals based on evaluation of the results

• Easily share custom-built reports with patients

The built-in dashboard allows pinning of select metrics and tracking of patient changes over time. Use Advanced Analytics to:

• Understand changes in BMD and body composition within various Regions of Interest

• Perform retrospective trending using past patient data

• Manage research studies with custom metrics for both BMD and body composition

More than 200 Bone and Body Composition Parameters for Analysis.

Sample Metric = VAT Mass/ Total Fat Mass

Body Composition Analytics   **Bone Analytics – Various Skeletal Sites**

DXA Parameters	Regions			Regions	DXA Parameters
BMC	Left Arm			L1	Area
Fat Free Mass	Right Arm			L2	BMD
Fat Mass	Android			L3	BMC
Lean Mass	Gynoid			L4	BMD %AM
Region %Fat	VAT			L1-L2	BMD %YA
Tissue %Fat	SAT			L1-L4	BMD T-Score
Tissue Mass	Total Body			etc.	BMD Z-Score
Total Mass	TBLH				
	much more				

DXA Parameters	Regions			Regions	DXA Parameters
Area	Left Arm			Neck	AFF Beaking Index
BMC	Right Arm			Trochanter	Area
BMD	Android			Shaft	BMD
BMD %AM	Gynoid			Total	BMC
BMD %YA	VAT			etc.	BMD %AM
BMD T-Score	SAT				BMD %YA
BMD Z-Score	Total Body				BMD T-Score
	TBLH				BMD Z-Score
	much more				

Composition

Densitometry

AP Spine

Femur

Note: Some parameters may require purchase of additional features.

Productivity and Security

New Windows® 10 PC, with Solid-State Drive technology

The PC designed for compatibility with enCORE v18 has been upgraded:

• Windows 10 2021 LTSC is supported by Microsoft through Jan 2032

• Large 1 TB Solid-State Drive (SSD) helps provide faster speed and better boot times

• Microsoft Edge browser for online security

Processor	Intel® Core™ i3
Operating System	Windows® 10 2021 LTSC
Memory	RAM 8 GB
Storage	1 TB NVMe SSD
Monitor	24" SVGA (min resolution 1920 x 1080 32-bit color)

enCORE v18: A Secure Platform

enCORE v18 offers advanced security features to protect your data. This includes powerful encryption features for data storage and transit, plus an audit trail of software users.

New Feature	Added Security Benefit
IPv6 for DICOM® and HL7	Communication protocol integrating IPSec for better security during data exchange
FIPS 140-2 Encryption	Federally compliant encryption standard that protects patient exam files using 256-bit encryption
Audit Trails	Logs information related to: • Software configuration and user access changes, destination IP addresses • Database events including authentication, patient modification/deletion • Events supported by the DICOM Audit Trail Profile
TLS for DICOM	Provides security at the transport layer of a DICOM transaction by using encryption and node authentication. TLS is an updated, more secure, version of the SSL protocol.

Recognized Leadership in DXA Technology

DXA systems from GE HealthCare are built on an exceptional foundation and enCORE v18 offers advanced bone and metabolic health clinical applications.

• **Patented Narrow Fan Beam Scan**
  Combining the features of pencil beams and wide fan beams, Narrow Fan Beam technology offers a shorter scan time with reduced magnification error (inherent to wide-angle fan beam scans).

• **Low-Dose Photon Counting Technology**
  Dose-efficient photon counting detector technology more efficiently counts X-ray photons, lowering dosage to the patient.

• **Innovative SmartScan™**
  Our SmartScan technology reduces scan time and X-ray dosage by identifying bone regions after each transverse sweep and estimating where to begin scanning on the subsequent sweep.

• **K-edge Filter**
  An exceptional "K-edge filter" that creates a dual energy beam and absorbs the X-rays in the middle energy range and protects the patient against unnecessary exposure.

• **Multi-View Image Reconstruction (MVIR)**
  By performing multiple transverse sweeps across the site of interest, MVIR accurately determines bone-height above the tabletop, minimizes magnification errors and provides excellent precision and accuracy.

• **Low Scattered Radiation**
  Narrow-fan beam technology results in low scatter radiation in comparison to wide-angle fan beam systems.[10]

enCORE v18:
Offering more possibilities from your DXA investment.

References:

1. Data on file with GE Healthcare, April 2019.

2. Not available in Japan.

3. Integrated TBS 3.1 and/or FRAX may not be available in all countries; consult with your GEHC sales representative for availability.

4. Adapted from J. Bone Miner. Res. 26, 2762-2769 (2011)

5. Hans D, et al. Bone microarchitecture assessed by TBS predicts osteoporotic fractures independent of bone density: the Manitoba study. J Bone Miner Res. 2011 Nov;26(11):2762-9.

6. Requires Advanced Analytics application.

7. Requires CoreScan application.

8. Requires DXAVision or Sports Athletics package.

9. Requires DXAVision.

10. Data on file with GE Healthcare, January 2017.

GE HealthCare