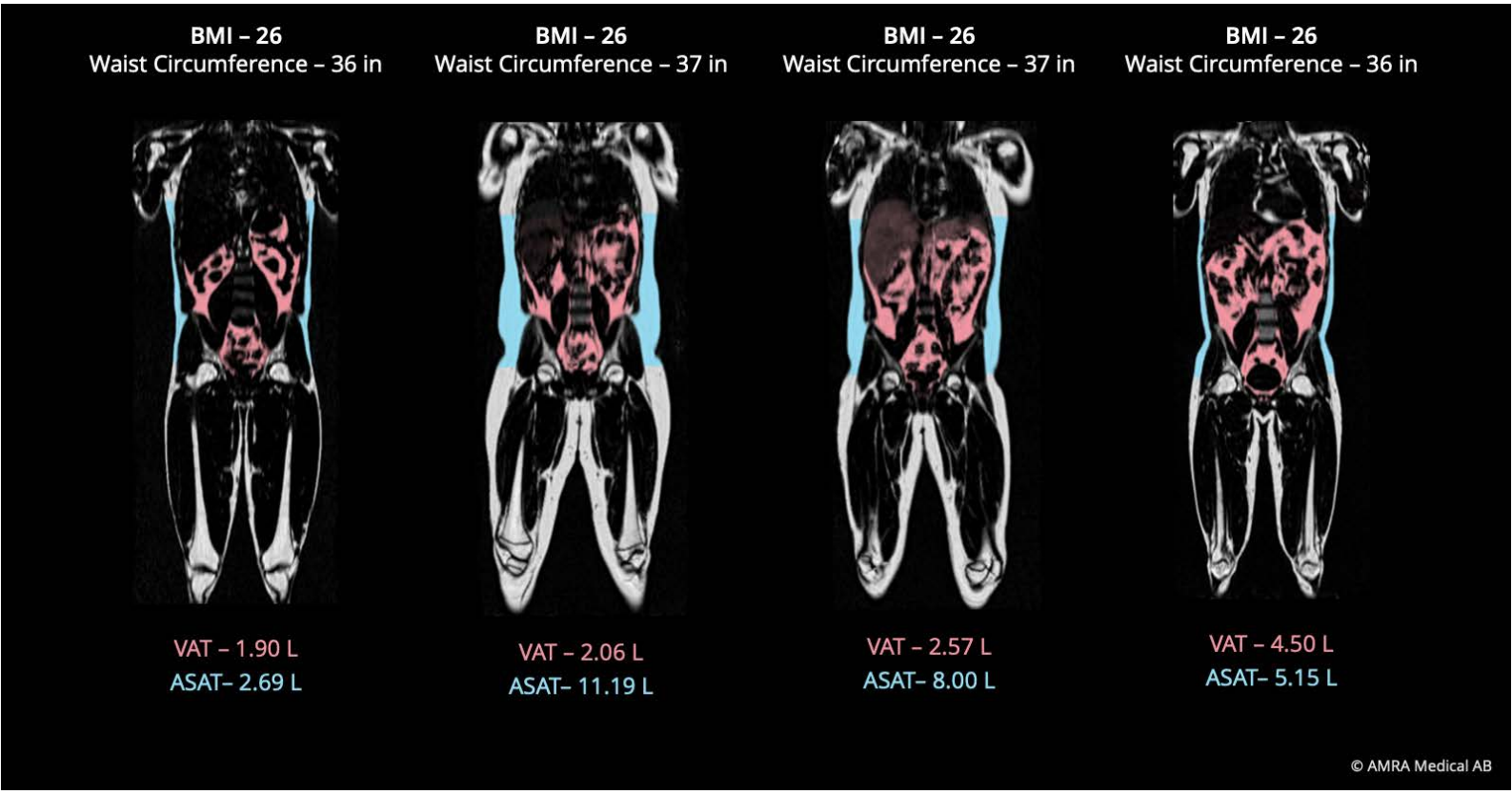
Why BCP with MRI

Same BMI - Different levels of risk

BMI is an outdated assessment tool. BMI looks at health trends in large populations, but we need to understand the individual better to personalize clinical care. BCP (Body Composition Profile) is an individualized description of a person's body composition based on a rapid MRI scan, comprizing five key measurements: visceral fat, subcutaneous fat, muscle fat infiltration, muscle volume and liver fat.



Metabolically healthy → **Increase in Visceral Fat** → **Increased health risks**

Literature has shown that phenotypes with high visceral fat and low liver fat are associated with a high risk of incident heart disease and elevated visceral fat and liver fat have been identified as strong risk factors for new-onset Type II diabetes[1,2].

VAT = Visceral Adipose Tissue (Visceral Fat)
ASAT = Abdominal Subcutaneous Adipose Tissue (Subcutaneous Fat)

The images are for illustrative purpose based on actual individuals

BCP with MRI – Superior for Body Composition Analysis

Insights

Multiple technologies can be used to provide body composition measurements, however there are differences in the precision of these techniques. DXA and BIA are unable to measure Muscle Fat Infiltration, Liver Fat and Visceral Adipose Tissue is only an approximation when measured via DXA.[3]

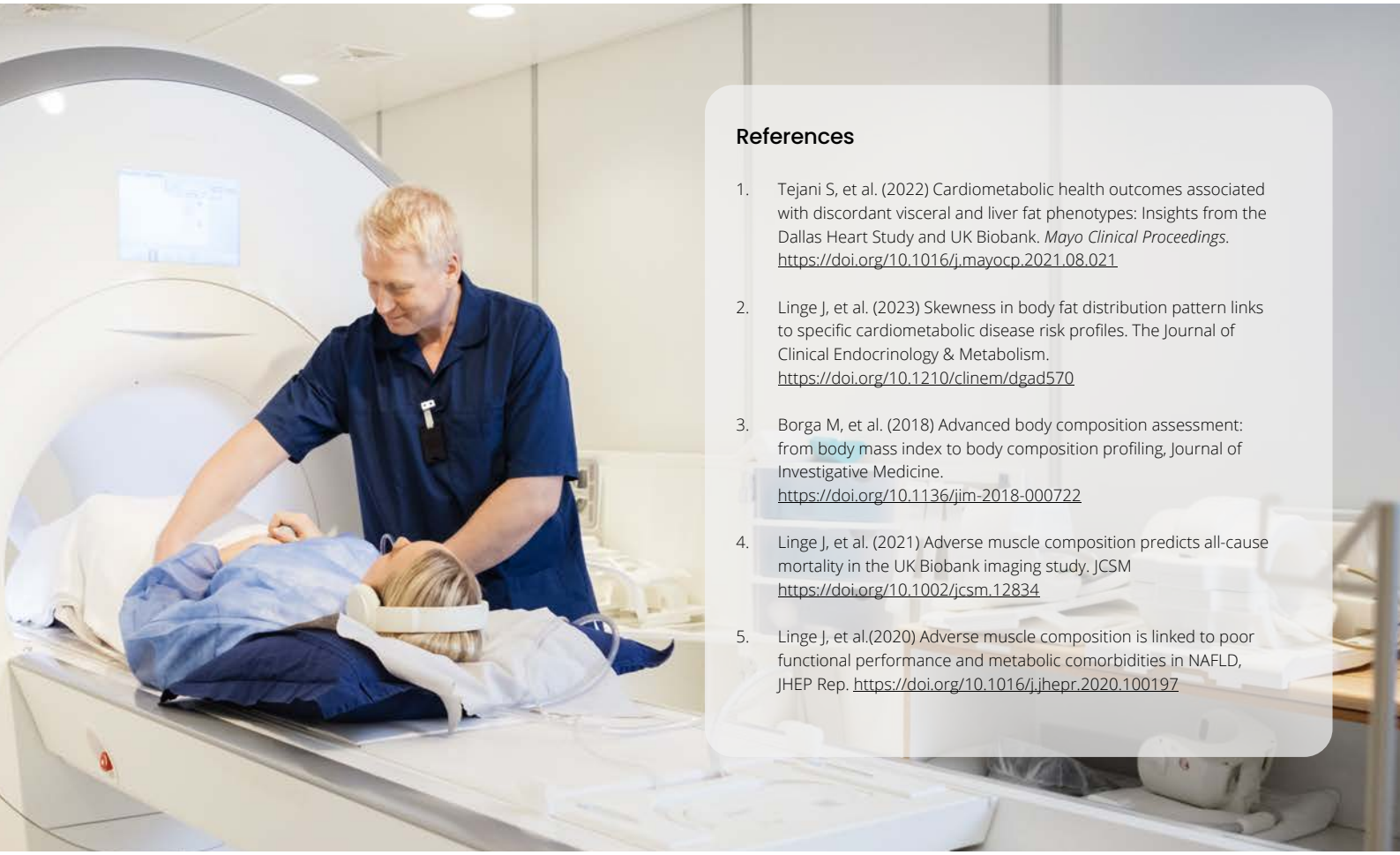
MRI Measures Visceral Adipose Tissue (VAT), Liver Fat, and Muscle Fat infiltration (MFI) — a strong predictor of function and longevity.[4,5]

Safety Profile of Technology Platforms

MRI: No ionizing radiation
DXA and CT: Emits ionizing radiation

		BIA	DXA	CT	MRI
Visceral Adipose Tissue	Accuracy		●	●	●
	Precision		●	●	●
Individual Muscles	Accuracy			●	●
	Precision			●	●
Muscle Fat Infiltation	Accuracy			●	●
	Precision			●	●
Liver Fat	Accuracy			●	●
	Precision			●	●
Ionizing Radiation			●	●	

Bioelectrical Impedance Analysis (BIA), Dual-energy X-ray Absorptiometry (DXA), Computed Tomography (CT) and Magnetic Resonance Imaging (MRI)



References

1. Tejani S, et al. (2022) Cardiometabolic health outcomes associated with discordant visceral and liver fat phenotypes: Insights from the Dallas Heart Study and UK Biobank. *Mayo Clinical Proceedings*. https://doi.org/10.1016/j.mayocp.2021.08.021

2. Linge J, et al. (2023) Skewness in body fat distribution pattern links to specific cardiometabolic disease risk profiles. The Journal of Clinical Endocrinology & Metabolism. https://doi.org/10.1210/clinem/dgad570

3. Borga M, et al. (2018) Advanced body composition assessment: from body mass index to body composition profiling, Journal of Investigative Medicine. https://doi.org/10.1136/jim-2018-000722

4. Linge J, et al. (2021) Adverse muscle composition predicts all-cause mortality in the UK Biobank imaging study. JCSM https://doi.org/10.1002/jcsm.12834

5. Linge J, et al.(2020) Adverse muscle composition is linked to poor functional performance and metabolic comorbidities in NAFLD, JHEP Rep. https://doi.org/10.1016/j.jhepr.2020.100197