

AMRA® BCP Service Requirements

This is the service requirements for the AMRA® BCP Protocol (BCP stands for Body Composition Profile). The MRI scan enables regional and global segmentation and quantification of muscle and fat tissue volumes in the body. AMRA® BCP Protocol Installation and Scan Guides are available for most of the listed MRI systems.

Image Requirements

For body composition measurement with AMRA® Profiler or AMRA® Researcher, we require fat, water, in-phase (IP) and opposed-phase (OP) Dixon images to be sent to us. The images are acquired using LAVA-Flex (GE), mDIXON XD (Philips), or Dixon-VIBE (Siemens). For AMRA to analyze previously acquired MR images, the images must have been acquired using fat-water separated imaging and include the image types mentioned above.

For analysis of liver fat, we prefer that the images are acquired with the vendor's liver application. This can be either IDEAL-IQ (GE), mDIXON-Quant (Philips), or LiverLab (Siemens). We require fat fraction, fat, water and R2* images to be sent to us.

Exported DICOM files must comply with the AMRA DICOM Conformance Statement.

Supported MRI Systems

The following tables specifies the minimum requirements of the MRI system to produce stable water-fat separated images, i.e., images that can be trusted to be fed directly into AMRA® Profiler/AMRA® Researcher. If your MRI system is not listed below, please contact AMRA for support (support@amramedical.com).

Supported body imaging platforms

GE	
Scanner Model	Software Version
3T systems SIGNA Premier* SIGNA Architect* SIGNA Pioneer* SIGNA PET/MR Discovery MR750w GEM Discovery MR750	DV25 DV26 SV25 PX26 MP24
1.5T systems SIGNA Artist* SIGNA Explorer* SIGNA Creator* SIGNA Voyager* Discovery MR450 Optima MR450w GEM Optima MR450w Optima MR360 Brivo MR355*	
Upgraded systems SIGNA Architect Lift* Discovery MR750 Lift* SIGNA Explorer Lift* SIGNA Artist Lift*	

* Not verified

PHILIPS	
Scanner Model	Software Version
3T systems Ingenia Elition 3.0T S* Ingenia Elition 3.0T X* Ingenia 3.0T CX Ingenia 3.0T Achieva 3.0T	Release 5.1* Release 5.2* Release 5.3 Release 5.4* Release 5.6* Release 6*
1.5T systems Ingenia Ambition 1.5T S* Ingenia Ambition 1.5T X* Ingenia Prodiva 1.5T CX* Ingenia Prodiva 1.5T CS* Ingenia 1.5T CX Ingenia 1.5T S* Ingenia 1.5T Achieva 1.5T Multiva 1.5T*	
Upgraded systems Achieva 3.0T dStream Achieva 1.5T dStream	<i>MR Release 5.3 and older require mDixon-Quant for liver fat (PDF) measurement, and access to research or service mode login for muscle fat infiltration measurement.</i>

* Not verified

SIEMENS	
Scanner Model	Software Version
3T systems MAGNETOM Lumina* MAGNETOM Vida* MAGNETOM Prisma MAGNETOM Skyra MAGNETOM Spectra* MAGNETOM Verio	B19 D13 E11 XA10*
1.5T systems MAGNETOM Altea* MAGNETOM Sola* MAGNETOM Aera MAGNETOM Amira* MAGNETOM Sempra*	
Upgraded systems MAGNETOM Prisma Fit MAGNETOM Skyra Fit* MAGNETOM Avanto Fit	

* Not verified

Supported liver imaging platforms

Vendor	Clinical application
SIEMENS	LiverLab
PHILIPS	mDIXON-Quant
GE	IDEAL-IQ

An optional/alternative liver sequence is available from AMRA if the liver application is not available on the scanner.

General requirements

The body imaging utilizes the scanner's integrated body coil, while the liver imaging requires a dedicated surface/body coil. Special variants of the AMRA® BCP Protocol may require additional coils and/or increased scanner table movement flexibility.

Available Measurements

A neck-to-knee BCP scan analyzed with AMRA® Profiler yields the following measurements:

- Visceral Adipose Tissue (VAT)
- Abdominal Subcutaneous Adipose Tissue (ASAT)
- Liver Fat
- Muscle Fat Infiltration (MFI)
- Lean Thigh Muscle Volume

Additional measurements are available upon request, using AMRA® Researcher.