

HOW TO PICK YOUR MRI SCANNER

- A guide to your next system

LBN Medical 
A DirectMed Company



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Introduction to MRI Scanners

Magnetic Resonance Imaging (MRI) is a type of diagnostic that uses magnetic resonance techniques, radio waves, and a computer to produce accurate images of the tissues of the body.

Therefore, an MRI scanner is a valuable systems for any hospital and imaging clinic.

You can find them for different applications, with various magnetic strengths, capabilities, and price ranges.

So, how to know which one suits your needs the best?

In this guide, we strive to give you a comprehensive overview of the many options you may consider when purchasing an MRI.

The first chapter compares CT and MRI scanners, as they are similar in capabilities in terms of scanning internally and offering cross-sectional images. Therefore, there is sometimes doubt as to which is needed.



How Does MRI Differ From CT?

MRI and CT scanners enable physicians to diagnose effectively and detect many diseases and abnormalities even at early stages. CT scanners are typically better at imaging bones, while MRI systems provide better soft-tissue contrast.

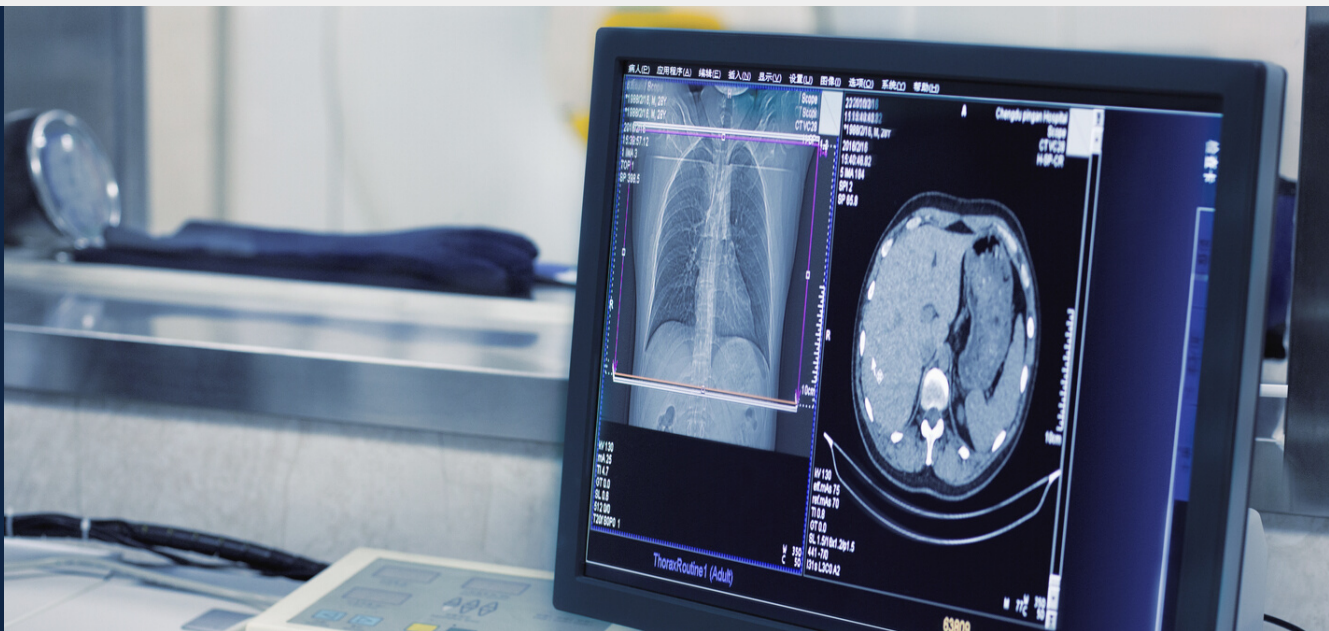
Furthermore, MRIs distinguish more adequately between fat, water, muscle, and other soft-tissue structures such as ligaments and cartilages.

In general, MRI provides more detailed images of the internal organs (soft tissues) such as brain, reproductive system, and other organ systems.

For that reason, it is the standard diagnostic test for the nervous system and brain problems such as multiple sclerosis and spinal cord lesions.

However, MRIs are noisier than CT scanners, and some patients find them uncomfortable. Their opening is narrow and deeper, and may trigger claustrophobia.

While the MRI bore openings are between 60–70 cm, most CT bore openings are between 72–90 cm. However, open MRI systems have an advantage over both in this category.








Furthermore, MRI scans take more time, from 15 minutes up to 1 hour or so, while a CT scan usually takes from 1 - 20 minutes, depending on the examination. Therefore, CT scanners are preferable if time is a factor, for example, in an emergency room.

Unlike CT scanners, an MRI does not expose patients to radiation. However, not all patients can be examined using an MRI scanner. These include patients with certain implanted medical devices.

Today, most metal implants are considered safe for MRI scanning, but Doctors must always evaluate and approve. Furthermore, those implants are likely to cause metal artefacts.

Some of the large manufacturers are offering solutions to tackle this issue, if this is a concern for your practice, feel free to write us and our team of experts will be happy to guide you towards the best solution.

Now, let us look at what else to consider when getting an MRI.

MRI SCANNER	VS	CT SCANNER
	Application	
Soft tissues		Bones
	Opening	
60-70 cm		72-90 cm
	Time	
15 minutes to 1 hour		1 to 20 minutes
	Noise	
Very noisy		Less noisy
	Waves	
Magnetic Resonance		Radiation



Premium MRI Scanner Brands

Different brand manufacturers have different advantages.

Some MRI manufacturers may offer better purchasing prices, while others have a lower service cost.

However, not all MRI scanners perform equally across the board.

The main brands of MRI scanners are Siemens, GE, Philips, and Canon Medical (formerly Toshiba). All of these brands offer high-quality MRI equipment with great value and, maintain good value as a pre-owned system.

Siemens



Siemens is one of the most versatile MRI providers with over 13 different systems in their current production line, between 1.5, 3.0, and 7.0 Tesla.

When it comes to MRIs, Siemens has been making tremendous progress.

For example, their TIM technology (Total Imaging Matrix) allows whole-body imaging without the need for re-positioning of patients or multi-scans. And thus, offering better image quality, higher SNR, and faster scans.

When incorporated with the DOT technology (Day Optimizing Throughput), MRI systems will have increased productivity, ease of use, and consistent scan results. DOT engines offer twice as many standard applications in your MR system.

Their low-powered systems are appreciated around the world, especially in India and Africa. The Magnetom Essenza consumes very little power and requires no chiller or extra cooling. That makes the system very attractive in many places around the world.

All Siemens systems available in the used market today are zero helium boil-off, such as:

- **Magnetom Essenza 1.5T**
- **Magnetom Avanto 1.5T**
- **Magnetom Espree (Large bore) 1.5T**
- **Magnetom Aera (top of the line 1.5T)**
- **Magnetom Spectra 3.0T**
- **Magnetom Verio 3.0T**
- **Magnetom Skyra (top of the line 3.0T)**



Canon

Canon (former Toshiba) MRI systems are known for their excellent image quality with reasonable prices. But also for their great combinations. The gradient provides excellent spatial encoding of RF signals and the highly homogenous magnetic field and high SNR directly improve image quality.

Furthermore, with Canon, you do not need to increase your budget to purchase the very high-end models and get the equivalence of DOT technology.

M-power is a standard configuration and available on all Vantage series from 2010 onwards and accessible at almost half the price of systems with DOT technology.

M-power streamlines and speeds up processes to improve the performance of your MRI.

Additionally, it offers a powerful user interface that is easy to navigate and contributes to better efficiency.

Canon also offers the largest FOV of all MRIs to date on the Vantage Titan 1.5T. That has a bore 71cm wide. However, the Titans are some of the MRIs in the market without a zero-helium boil-off magnet. Therefore, you should expect yearly helium refills.

Some of the newer models does have a zero boil-off magnet, providing some of the best low-powered MRI systems such as the Vantage Elan.

These systems are incredibly easy to install, with the lowest power requirement of any system in the market (25KW). Yet retaining world class image quality while lowering the annual running cost of your system to the minimum.

Service is not as widely available as for Siemens and GE, but if the service is available in your region, then Canon may be a great option.



Some of Canon MRI systems available in the second-hand market:

- **Vantage Titan 1.5T**
- **Vantage Elan 1.5T**
- **Vantage Orian Upgrade 1.5T**
- **Vantage Titan 3.0T**
- **Vantage Galan 3.0T**

GE

GE supplies reliable systems that are easy and cheaper to service and offer great qualities.

Moreover, GE is the pioneer in the development of zero helium boil-off MRIs.

Their MRI systems offer great capabilities supported by the world's best software and a long list of advanced applications often available as a standard configuration.

For example, the GE Discovery MR 450 offers 32 channels, various sequences, and possibilities, which makes it a very attractive option for any hospital.

Furthermore, GE MRIs are easy to service and have reasonable spare parts prices.

Over the years of using your MRI , service becomes more and more important, and keeping these costs as low as possible will increase your profitability. Although the system might be a little expensive upfront, the low maintenance costs will make a difference in the long run.

GE Optima MR450W is still considered one of the most demanded systems in the pre-owned market. It combines good pricing, reasonable service cost, and outstanding performance.

In recent years, GE have increased its line-up of MRI systems, and are expected to gain more shares in the market, having great systems such as:

- **Signa Discovery HDxT 1.5T**
- **Optima MR360 or Brivo MR355 1.5T**
- **Discovery MR450 1.5T**
- **Optima MR450w 1.5T**
- **Signa Explorer 1.5T**
- **Signa Voyager 1.5T**
- **Discovery 750 3.0T**
- **Discovery 750w 3.0T**



Philips

Philips also provides good MRI systems. They are reliable but can be costly to purchase and service. The image quality is hailed as one of the best.

Philips offers precision and a range of applications, but their use can be more complicated than what you see with Canon, GE, and Siemens models.

Philips zero helium boil-off systems were less common in previous years and more expensive in the used market.

However, they are becoming more accessible and are quality magnets. Their non-zero boil-off magnets have the best and lowest boil-off rates of all MRIs, thus, deliver excellent value.

Currently, Philips has the bragging rights for the world's first near helium-free MRI system. The magnet, which is completely sealed-in, contains 7 litres of liquid helium only and requires no refills.

Therefore, it does not need any ventilation. The first installation took place in September 2018 and we may expect to see this MRI in the second-hand market in the next 5-7 years.

- **Panorama 1.0T**
- **Achieva Nova 1.5T**
- **Intera Achieva 1.5T**
- **Achieva 3.0T**
- **Ingenia 1.5T**
- **Ingenia Ambition 1.5T**
- **Ingenia 3.0T**
- **Ingenia Elition 3.0T**

Finally, not all regions have similar accessibility to service for all brands. Therefore, service accessibility, spare parts costs, and repairability should also be considered when deciding on an MRI.

The prices of the different MRI models vary depending on various factors, including the brand.

We will look into MRI scanner pricing later, but before that, let us explore the differences between open and closed MRIs as well as between low and high-field MRI scanners.

Differences Between Closed and **Open MRIs**



Open MRI Scanners

As the name suggests, this type of MRI scanner is open. Most open MRIs do not use superconducting magnets, they use permanent magnets. Thus, instead of liquid helium, they use water and air cooling, which is less expensive in terms of labour and money.

However, there are some exceptions, anything above 0.4T, such as 0.6T, 1.0T, and 1.2T are open bore MRI scanners with superconductive magnets, which utilize the use of liquid helium.

Open bore MRIs use two parallel magnets with an opening in between to produce images. Since MRI technologies are constantly evolving, there are nowadays technologies in the market where the magnets are set upright, producing an axial image.

Open MRIs are primarily designed to suit larger patients and patients struggling with claustrophobia.

And because most open MRIs are low field, using less than 0.5T, it can be a challenge to tell fat and water apart during the scan, which can result in lower resolution images.

Nevertheless, since the technology is progressing, the clarity of the low-field MRIs has increased over time. Hence, an open MRI can balance your imaging needs, capital costs, and patient comfort.

Closed MRI Scanners

This type of MRI is the most demanded in the market, due to speed, image quality, variety of options, and sequences.

A closed MRI has the shape of a "donut". Unlike open MRIs, closed MRIs do not come with a permanent magnet option, they are always superconductive, which generates an astounding amount of heat, therefore, liquid helium is required to maintain the superconductivity of any high-field magnet.

Generally, closed magnets start at 1.5T. However, since they are closed, many patients struggle with the feeling of claustrophobia. Furthermore, they may be uncomfortable for obese patients. Therefore, wide bore, also called large-bore MRIs were developed.

Examples of large bore MRIs:

SIEMENS	PHILIPS	GE	CANON
<ul style="list-style-type: none">• ESPREE• AERA• ALTEA• SOLA 1.5T• VERIO• SKYRA 3.0	<ul style="list-style-type: none">• INGENIA• INGENIA AMBITION 1.5T• INGENIA 3.0T• INGENIA ELITION 3.0T	<ul style="list-style-type: none">• GE 450W• VOYAGER• CREATOR 1.5T• MR750W• SIGNA PIONEER 3.0T	<ul style="list-style-type: none">• VANTAGE TITAN• ORIAN 1.5T• VANTAGE GALAN 3.T

Overall, closed MRIs scan faster and are suitable for a higher number of applications, as you can see in the table in the next chapter.

But enough about open and closed MRIs.

Let us investigate MRI field strength, which is measured in Tesla.



MRI Field Strength



When medical practitioners refer to MRI scanners, they often say that the scanner is a 1.5T or 3.0T MRI.

That is because MRIs are defined by their magnetic field strength, which is measured in Tesla (T). The higher the Tesla, the faster you can acquire images of the same quality.

Fun fact: The 1.5 Tesla MRI is 23,000 to 60,000 times stronger than the gravity of the Earth.

Across the MRI industry, the most common scanners are 1.5T or 3.0T. Nevertheless, you can find MRI scanners with strength below 1.5T, such as the 0.2T, 0.3T, 0.4T, and also MRIs up to 7.0T. Since 7.0T MRIs are less common and usually only appear in clinical research institutions, we do not cover them in this guide.

Low-field MRIs: 0.2T – 0.4T

Most of these systems are open bore MRIs with a very small exception, of extremity dedicated MRI scanners. Although the MR market is dominated by superconducting magnets with a field strength of 1.5T and higher, a lower field scanner also has certain advantages.

For example, lower initial purchase price, operational costs, service, and annual running costs.

Furthermore, low-field MRIs are a good alternative for claustrophobic or uneasy patients. Typically, practitioners utilize a 0.2T MRI scanner for extremities only, while 0.3T and 0.4T MRI can also be applied in full-body examinations



High-field MRIs: 1.0T, 1.2T, 1.5T and 3T

They are powerful systems - And the stronger magnetic field, the shorter the time required to achieve high quality imaging.

While most currently available 1.0T and 1.2T MRIs are open MRIs, 1.5T and 3T are closed.

As 1.5T and 3T are the most common, we will only look at these two types in more detail.

1.5T MRI Scanners

Nowadays, 1.5T MRIs are the standard in MRI imaging.

They are faster than lower strength MRIs and sufficient for the majority of routine scans done today. Therefore, they account for most MRIs currently in use.

Typically, you would use 1.5T MRI scanners for:

- **GENERAL IMAGING**
- **EXTREMITIES**
- **CARDIAC IMAGING**

So, if you do not intend to focus on a specialization such as brain imaging, the 1.5T MRI will give you the image detail you need at a lower cost than the 3T MRI.

3T MRI Scanners

When performing examinations that need to be very detailed, you could consider a 3T MRI scanner.

3T will shine in specialties such as:

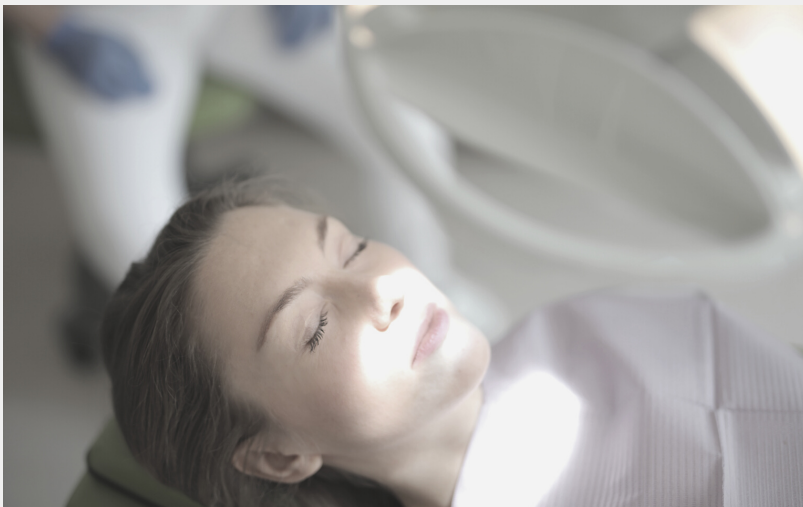
- ADVANCED BRAIN IMAGING (DWI, DTI SPECTROSCOPY)
- ASL (BRAIN PERFUSION)
- PROSTATE SCANS
- FMRI
- BLOOD PERFUSION
- BONE MARROW



A quick note on the 1.5T and 3T systems - because they are closed MRIs, some patients may find them claustrophobic.

Furthermore, the prices of the latest models can be high. The same applies to their maintenance costs, which are higher because these MRI scanners are helium-cooled and many require helium refills.

Prices are covered in the next chapter - but first, as a sum up, you can see the table below, for an overview of what exams can be performed by the different strengths of MRI systems.



Recommended Tesla pr. Application

Field Strength	0.2 T	0.3 T - 0.4 T	1.0 T	1.5 T	3 T
General Imaging	-	●	●	●	●
Cardiac	-	●	●	Yes Advanced	Yes Advanced
Brain Imaging	-	●	●	Good	Excellent
Extremities	●	●	●	●	●
Breast	-	●	●	●	●
MSK	-	●	●	●	●
ASL	-	-	-	●	●
Prostate	-	-	-	●	●

● - Yes
- - No

** some of those applications require special options, sequences and techniques, consult your supplier regarding the availability and possibilities of these applications

How Much Does an MRI Scanner Cost?

First and foremost, we should make ourselves clear - We are describing prices of MRI scanners on the used market only.

Prices of used MRIs are usually 50-80% lower than prices of brand new. And prices of OEM refurbished are typically 35-45% lower than prices of new systems.

MRI prices covers an extremely big range - You can find MRI systems from 30.000 and up to 700.000 euros. So, you should be clear on your requirements before making up your mind.

Some cheaper MRIs are only suitable for extremity scans. On the other hand, the most expensive MRIs may only be needed for advanced examinations, such as sophisticated brain studies, bone marrow, prostate scans, or blood perfusion.

Here is an example of the price difference between open MRIs: Some of the cheapest MRIs are the Esaote E-scan & C-Scan. These extremity scanners are good for orthopaedists and veterinarians. The price of these two models starts at 30.000 euros.

However, systems such as Siemens Magnetom C! or the Hitachi Airis, and the Aperto series have the capability to perform more applications such as neuro and cardiac. And these may cost between 200.000 to 300.000 euros.





MRI scanners with stronger magnetic fields such as 1.5T or 3.0T are much more expensive. They can be divided into two categories:

Regular helium boil-off systems, they have higher maintenance costs as they require helium refills on an annual basis. Zero boil-off magnets, they are pricier than regular magnets, but much cheaper to maintain since they do not require helium refills for up to 10 years.

The price difference of regular and zero boil-off MRI systems can start at 50.000 euros.

An example of the initial price difference for a full MRI project:

Siemens Magnetom Avanto 1.5T is a zero boil-off magnet. The price for a full project including a used Magnetom Avanto will be around 460.000 euros, if you prefer a refurbished system, the price can go up to 600.000 euros.

On the contrary, a full MRI project that includes the Toshiba Vantage Titan 1.5T will cost you around 350.000 euros when used and up to 500.000 euros when refurbished. This system boils off helium and thus its running cost will be higher as it requires helium refills.

Below are examples of MRI price levels. MRI prices fluctuate greatly, so in some cases, you can get an installation project for a certain price, other times you pay the same amount for an MRI system only.

Low Field MRI Systems

Tesla	0.2T	0.25T - 0.3T	0.3T - 0.4T
Price	30 - 80.000	110 - 165.000	200 - 300.000
Model Example	Esaote C-Scan	Esaote S-Scan	Siemens Magnetom C

High Field MRI Systems

Tesla	1.5T	1.5T	3T	3T
YOM	2000 - 2008	2009 - 2014	< 2006	> 2008
Price	270 - 350.000	380 - 500.000	320 - 380.000	400.000 +
Model Example	Vantage Titan	Siemens Magnetom Avanto	Philips Achieva	Siemens Prisma

T = Tesla, YOM = Year of Manufacture

Note: These price levels are only informative and may differ depending on various factors.



Some of the factors that affect the prices of MRI scanners are:

- Year of Manufacture (YOM)
- Field strength
- Gradient strength
- Slew rate and channels

- MRI coils
- Helium cost
- Delivery cost
- Installation and warranty

Maintenance Costs

What about the maintenance and running costs of an MRI scanner?

It is important to note that the MRI system should not only suit your purchasing budget, but also your yearly maintenance budget. To cover maintenance or service costs as well as helium refills and these costs vary from system to system.

If you decide to purchase a newer model, the maintenance will be lower than for an older system. That is because newer models require fewer helium refills. However, the purchasing price of a newer model will also be significantly higher.

Moreover, if you only need a smaller system, permanent magnets ranging from 0.2T to 0.4T can save you some money as they are not helium cooled.

But, the golden rule of purchasing MRI systems is your needs and access to service. The quality of the MRI system could be irrelevant if the service provider of the specific brand is not available in your region.

On the next page you can see an overview of prices of low and high field MRIs.

Note: Prices are in euros.

The Importance of Liquid Helium in MRI

Permanent magnet MRIs from 0.2T to 0.4T do not require any liquid helium for cooling. Higher field MRI systems ranging from 0.5T to 1.2T require liquid helium, but a lot less than 1.5T MRI scanners.

But why does 1.5T, 3.0T, and 7.0T require so much liquid helium?

Because they are superconductive magnets and require liquid helium to cool them to the temperature at which they are superconductive. The amount of helium used varies from one system to another.

When helium boils off, for various reasons, the magnet eventually becomes warm if no refills are done. The word warm is loosely used as the alternative to “the magnet is no longer cold enough to be superconductive”.

On average one 1.5T holds 1.600 litres of liquid helium to maintain the superconductive temperature. While regular boil-off MRIs are cooled down to a temperature of 10 Kelvin (-263 degrees Celsius), zero boil-off MRIs are cooled to a temperature of 4.1 Kelvin (-269 degrees Celsius).

As helium turns gaseous right above 4K, the 4.1K magnet can maintain its liquid form, which results in no dissipation. However, at the temperature of 10K, some of the helium turns to gas and can thus dissipate from the system.

A large and sudden loss of helium is called quench.

As mentioned, helium use affects the running costs of the MRI. And it can get expensive.

The price of liquid helium starts at 20 euros per litre. It varies depending on the overall demand in the market and your location, but also on the quantity you buy.

If you own zero boil-off magnets like the Siemens Magnetom Avanto or Toshiba Vantage Elan, you do not have to worry too much about the rising price of helium.

A zero boil-off MRI system do not require helium refills for 10 years, in optimal working conditions. In contrast, a regular MRI requires refills every 11 to 18 months.

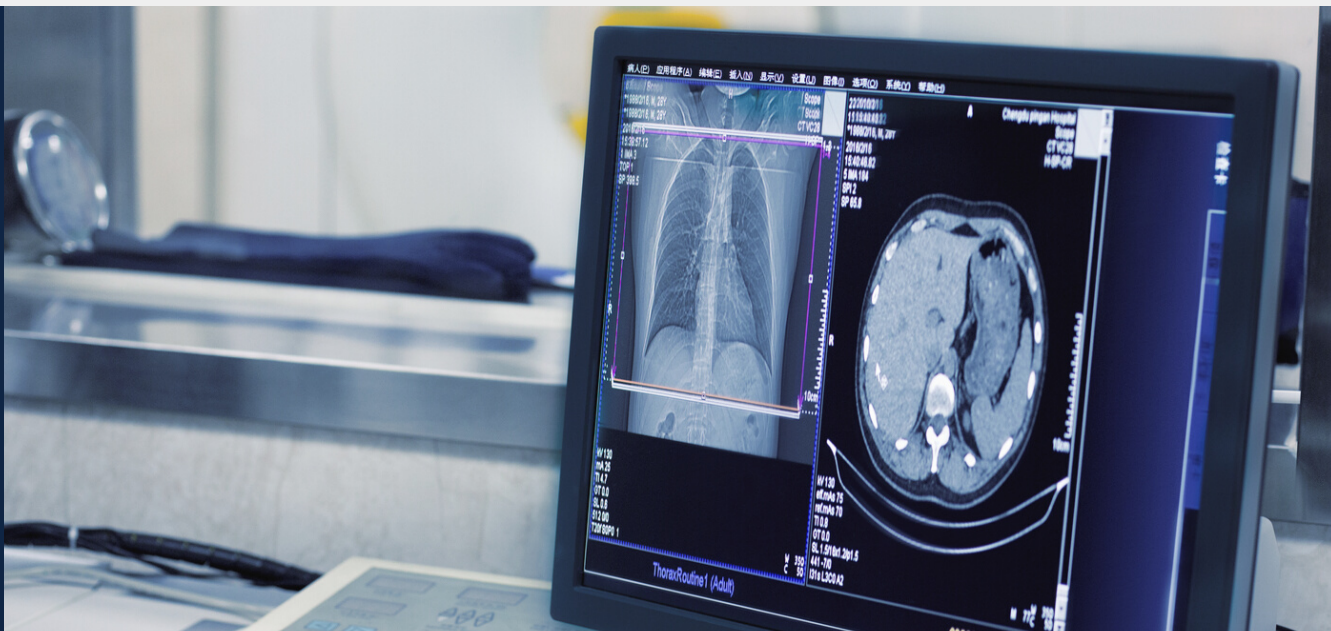
But how much liquid helium does an MRI scanner boil off?

Zero boil-off MRI systems only lose helium at a very low rate during service and exchange of the cold head.

For other systems, the helium boil-off rates vary as they have different types of magnets. The Achieva, and Intera Achieva for instance, use the F2000 magnet, which has 0.03l/h boil-off rate. And the Vantage Titan with the OR76 magnet boils off about 0.05l/h.

Hence, your usage of helium is largely affected by whether you have a zero boil-off or a regular magnet, which will increase your maintenance cost.

Another factor affecting MRI scanner prices are MRI coils. We will explain more about those in the next chapter.





MRI Scanner Coils

Because they are dedicated to different examinations, you can find them in different sizes and shapes, depending on the body part being scanned.

When choosing a coil, make sure that the coil is compatible with your MRI scanner and that it matches the exams you are going to perform.

Coils are important for both function and price of the MRI. An MRI coil is corresponding to an ultrasound probe, but is made of copper loops that transmits and/or receives the radio frequencies responsible for creating the MRI image.

There are many MRI coils, each coil designed to fit and serve certain purposes and applications.

Most Common MRI Coils

Usually you get a set of commonly used coils together with your MRI scanner. Those will cover your needs for most scans. It can vary based on a manufacturer, but in general most MRIs can come with:

- Head coil
- Neck coil
- Spine coil
- Shoulder coil
- Body coil
- Knee coil
- Large and small GP flex coil

You should keep in mind that coils are expensive. A new coil can range from 10.000 to 100.000 euros.

Buying these coils second hand can save you more than 50%. Learn more about used, refurbished and new, in the next chapter.



TIM Coil Technology

In 2003/2004, Siemens introduced their TIM technology. TIM works with matrix coils that offer higher SNR and thus better image quality. Compared to previously manufactured MRI coils, matrix coils have a much higher density and more elements to ensure that more data is encoded.

However, if you have an MRI scanner with TIM but your coils are not matrix coils, you cannot use it to your full advantage.

Siemens started the revolution of coils, but similar technologies were then developed by manufacturers such as GE, Philips, and Toshiba (now Canon Medical).

Used, Refurbished, or New MRI Scanners

What do each of these categories really cover, and what is important to consider when choosing between them? That is what we will cover now.

Used MRI Scanners

The term used MRI scanner may mean different things for different suppliers. They might have different standards when it comes to pre-owned equipment.

Some just move the system and sell it in the same condition and with the same options as the previous owner had. On the other hand, other suppliers clean and test the MRIs by professional technicians before de-installation and ensure that you get the highest possible quality.

In general, used MRIs are much cheaper than new equipment. Additionally, when you buy from a reliable supplier who provides you with a quality system, you get good value for money.

Refurbished MRI Scanners

Typically, refurbishment of MRI scanners includes cosmetic aspects, such as cleaning, painting, or replacing covers, and functionality, like parts replacement or unlocking options available for the model. But it depends on your supplier - some do not offer this.

Refurbishment gives you greater security and increases the quality of your MRI scanner. Therefore, the price is higher than for used MRIs.

A properly refurbished MRI system will cost around 55% - 65% of the price of a brand-new system.

LBN Medical takes pride in the work we do. Our refurbished MRIs go through a very thorough process. We make sure that you not only receive a working system, but also a system that is more reliable.

Contact our team to receive more materials and information on our refurbished product lines.



New MRI Scanners

It is straightforward what a new MRI scanner is. A new MRI system has never been used before and you are its first owner.

It comes with benefits such as latest technologies and thus increased image quality.

However, the upfront costs are generally almost twice as much as a refurbished MRI scanner, and up to four times as much as the price of a used system. Hence, consider your budget before jumping into buying a new system.

Sum Up

Main Points

What type of studies will you perform?

The answer to this question is essential to know what type of MRI scanner you should acquire.

Hence, let your supplier know whether you focus on general imaging, extremities, cardiac, brain imaging or other as this will guide the decision of which model to pick.

What MRI scanner brands are the best?

There are different options on the market. Based on our experience, we recommend one of the following: GE, Siemens, Philips or Canon Medical.

All have a long history of manufacturing MRI scanners and are known for delivering high quality. We recommend you pick mostly based on service availability in your region.

What number of Teslas do I need?

You can find MRI scanners with magnetic field strength ranging from 0.2T over 1.5T to 3T and 7T MRIs.

The most common in the market are 1.5T and 3T MRIs, which you can use for all types of examinations. But for example, 0.4T does well in lung imaging, 1.5T stands out in cardiac imaging, while 3T is great for advanced brain imaging exams.

This and the table in our section about Teslas will give you a general idea of when to use which tesla MRI. To get more detailed input, you can reach out to our sales team, they will help you in identifying the best system for you.



How much does a used MRI scanner cost?

The prices range from 30.000 euros for a low field Tesla MRI to up to 700.000 euros for a newer version of a 3T MRI. Since the price difference is so huge, you should be crystal clear on your needs before you decide on an MRI scanner.

Keep in mind that there are several factors affecting the overall price including the year of manufacture, Teslas, demand, model, MRI coils, helium pricing, and more.

What does liquid helium in MRI scanners do?

As we established, high-field MRI imaging would not be possible without a superconductive magnet, this level of superconductivity would not be achieved without liquid helium.

Liquid helium affects the running costs of an MRI. The price of liquid helium starts at 20 euros per litre and tends to fluctuate. However, if you own a zero boil-off helium MRI scanner, you do not have to worry if the price of helium rises as the refilling intervals are up to 10 years.

What is a zero boil-off MRI scanner?

Zero boil-off MRIs come with a magnet that allows the operation of the system with a minimal helium refill.

They boil off so little helium that under optimal working conditions, they do not require helium refill for up to 10 years. If you choose a zero boil-off magnet, expect a high start-up cost but lower running costs since you save money on helium.

What MRI coils do I need?

MRI coils come in different shapes depending on the body part you scan. When deciding on an MRI coil, be sure that the coil is compatible with your MRI scanner and that it matches the exams you want to perform with your MRI system.

For instance, for whole body imaging, get a wraparound body coil, for extremities, utilize wrist and knee coils, and in head and brain imaging, use head coils (such as the bird cage coil).

But there are other coils available. Make sure to check with your supplier and buy MRI coils suitable for your practice.

If you have any doubts about how to move forward, feel free to contact us or subscribe to our emails for more information.

You can email us at sales@lbnmedical.com

Or visit our website lbnmedical.com



"The machine's performance is really satisfying, I can complete my daily tasks with no obstacles. It came with the features and software I needed, even more. The quality of the image and the speed are excellent."

Dr Shterev from Bulgaria

"The scan quality is comparable to some new machines I have used before. I got value for my money. Also, for all challenges I had in setting up the machine, I got good assistance from LBN".

Dr Pedzisai from Zimbabwe

