Resolute x AARTHI SCANS & LABS

Whole-Body *MRI*

The Guardian of Your Healthspan

How Advanced Imaging Enables
Earlier, Safer, and Smarter Health Decisions

July 2025

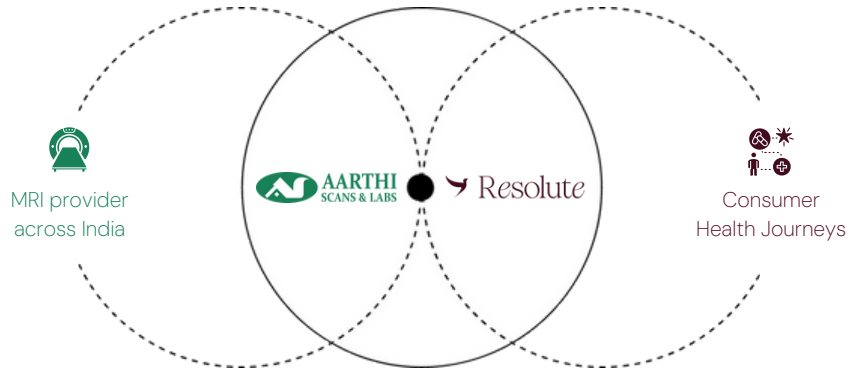
Aarthi Scans is one of India's most respected diagnostic imaging networks, with over 40 years of radiology leadership and a presence in more than 100 cities. Known for its clinical integrity, national reach, and patient-first approach, Aarthi has made advanced tools like whole-body MRI widely accessible - without compromising on quality.

This work is part of an ongoing collaboration between **Aarthi Scans**, and **Resolute**, a health platform focused on building structured, proactive care pathways. It also forms part of the early groundwork behind Optime, Resolute's structured program for full-body optimisation and proactive health.

As part of the partnership, Aarthi Scans serves as the exclusive full-body MRI provider across India. The scans are performed and reported by Aarthi's clinical team, while Resolute complements this with consumer health journeys - helping individuals understand their results through structured insights, ongoing guidance, and integration with other personal health data.

This paper draws on data and findings from a first **cohort of 442 individuals** who opted in for whole-body MRI as part of their baseline health mapping.

The goal: to understand what's happening beneath the surface - even when everything seems fine - and to contribute to the long-term initiative of making personalised, measurable health planning accessible at scale.



This paper is structured around eight key themes to help understand the evolving role of whole-body MRI in proactive healthcare.

Section 1 We begin by exploring why health optimisation must shift from symptom-based triggers to signal-driven insight - and how MRI makes that shift possible.

Section 2 Next, we walk through how the scan works, from its safety profile to its user experience and the technology behind it.

Sections 3–5 We then dive into real-world evidence: what the scans actually find, how often, and how those findings translate into preventive action .

Sections 6 and 7 reflect on the psychological, ethical, and economic dimensions of this powerful diagnostic - what it means for users emotionally, and why it matters financially in the Indian context.

Section 8 Finally, we place MRI inside a larger health optimisation operating system, showing how it integrates with data, AI, and human coaching to create lasting change.

Together, these sections reveal MRI not just as a scan - but as a gateway to earlier, safer, and more personalised care.

Resolute x Aarthi

At ***Resolute***, we are redefining how people approach health by making preventive, personalised, and predictive care the new default—so everyone can live longer, feel stronger, and unlock their full human potential.

We are a cross-disciplinary team of physicians, data scientists, AI engineers, behavior designers, and performance experts—aligned around a single thesis: that structured, adaptive care can replace fragmented, reactive health journeys.

As longevity, AI, and consumer health converge, we see an opportunity to define the category and build the operating system for the next 10 million people who want agency over their health—and the systems to support it.

Aarthi Scans & Labs was founded by Mr. Govindarajan in 1988 and is currently managed by a Team of Radiologists, all from same family - Dr. Prasanna Vignesh, Dr. Aarthi Govindarajan and Dr. Arunkumar Govindarajan

We are accredited by both NABL and NABH attesting our quality. Our own family group of Radiologists ensure good scan reports. We have a fully automated central processing lab to Provide accurate and quick results.

Aarthi Scans and Labs is dedicated to remaining at the forefront of the medical imaging and diagnostics field by maintaining state-of-the-art equipments and offering the latest in scientific advancements at an affordable cost.

Foreword

Dr. Gurmeet Soni Bhalla (FACI, PGPN, DNB, MBBS)
Chief Medical Officer, Resolute

Resolute

Health does not begin to decline when symptoms appear. It begins far earlier, in ways that are rarely felt and almost never seen. Subtle changes accumulate over time, inside organs, vessels, joints, and tissues, quietly shaping the body's future.

Whole-body MRI changes that timeline. It allows us to observe structural reality, even when everything seems fine. By revealing internal patterns before they become clinical problems, MRI helps people make decisions grounded in evidence, not guesswork.

The true value of this approach lies in its neutrality. MRI does not interpret. It shows. And in doing so, it removes ambiguity from some of the most important health questions: Is something silently progressing? Is intervention needed now, or is observation enough? Are lifestyle efforts making a measurable difference?

This paper introduces MRI not as a standalone solution, but as a critical node in a larger health system. Within Resolute's framework, it is used intentionally, supported by data, context, and expert interpretation. The goal is to introduce structural visibility at the right time, for the right person, with a clear plan for what comes next.

Resolute was built around this principle: that early, actionable insight should not be a privilege. By combining whole-body MRI with real-time biomarkers, wearables, and structured coaching, the platform creates an operating system for proactive health. Each layer strengthens the others. MRI gives anatomical confirmation, wearables show real-world patterns, and clinical guidance turns these signals into progress. Together, they allow for decisions that are not just timely, but precise and personal.

What makes Resolute different is not just access to diagnostics, but the orchestration of care around them. MRI reports are not left to interpretation by the individual. They are contextualised, triaged, and translated into specific behavioural and clinical next steps. Every scan becomes part of a larger operating system, an adaptive, user-centric model that replaces fragmented check-ups with coherent, longitudinal navigation.

As health optimisation becomes more advanced, more data-rich, and more decentralised, the need for structured interpretation grows stronger. MRI is one of the most powerful sources of truth in this environment.

Foreword

Dr. Arun Kumar Govindarajan (MBBS, MDRD, FRCR)
Director and Radiologist, Aarthi Scans & Labs

The clinical burden of late diagnosis remains one of the most persistent challenges in healthcare. A significant number of serious conditions - oncological, neurodegenerative and cardiovascular diseases - progress silently for years before any symptoms appear. The ability to detect these conditions during their pre symptomatic phase is central to effective preventive care.

Full-body MRI provides a high-resolution, radiation-free method to assess multiple organ systems in a single session. It is non-invasive, repeatable, and capable of identifying early pathological changes with a degree of precision that few other modalities offer. For individuals with elevated baseline risk due to family history - such as predisposition to cancer, dementia, or other malformations - it enables structured surveillance that can meaningfully alter clinical trajectories.

Beyond high-risk cohorts, its role is expanding among health-aware populations seeking proactive management of disease risk and long-term functional health. Full-body MRI allows for systematic evaluation even in asymptomatic individuals, making it a cornerstone in the evolving framework of longitudinal health intelligence.

While incidental findings are an inherent part of broad-spectrum imaging, they are not clinical failures. Their value depends on interpretation, triage, and longitudinal integration. With appropriate clinical care, these findings support rather than complicate preventive decision-making.

This paper positions full-body MRI not as a replacement for traditional diagnostics, but as a foundational layer in systems-based, precision-oriented health strategies. As the healthcare paradigm shifts from reactive to preventive, its utility will continue to expand across both clinical and consumer-facing care models.

Section **ONE**

From *Symptom*-Driven Care to *Signal*-Driven Health Optimisation

Clinical care remains largely structured around one event: the symptom. Most diagnostic investigations are triggered by patient-reported discomfort, visible dysfunction, or declining performance.

While effective for acute care, this model offers limited visibility into conditions that develop gradually and without early signs. Many structural changes - such as organ fat accumulation, growing tumours, or vessel narrowing - begin silently and progress before they are detectable through bloodwork or felt as discomfort.

We are entering a new chapter in healthcare - one defined not just by better tools, but by better principles.
As diagnostics become more advanced and accessible, the expectation is shifting: health is no longer something done to the individual, but something navigated with them.
At the centre of this shift are three non-negotiables: agency, autonomy, and access. Today, consumers want transparency, participation, and tools that reflect their unique risks, timelines, and choices.

But for this model to deliver its full promise, it must be equitable. Access to advanced diagnostics like whole-body MRI cannot become yet another marker of privilege. The power to see inside the body - to catch risk early, to prevent instead of react - must be extended across geographies, income brackets, and health literacy levels.

Whole-body MRI shifts the timeline of care. It provides direct anatomical insight, enabling earlier detection of deviation from healthy baselines. Positioned appropriately in a consumer's health journey, MRI supports informed decision-making at a stage where intervention is simpler, less invasive, and more effective.

1.1 The Timing Advantage: Prevent, Delay, or Reverse

Early detection isn't just about prevention - it's about smarter decisions at every stage.

The value of whole-body MRI lies in timing. It sees what blood tests infer and wearables can miss - offering structural visibility before symptoms begin. Its role in health optimisation is not general screening, but targeted foresight.

This early view translates into 3 forms of utility

Prevent

MRI identifies rare but high-risk conditions - nascent cancers, aneurysms, severe steatosis - before they become emergencies. These findings are not frequent, but when present, they shift the course of care dramatically. Early detection enables curative treatment in time.

The scan doesn't wait for symptoms or biochemical abnormalities. It shows what's already there - quietly progressing but still manageable. In these cases, early detection can enable curative surgery or a decisive lifestyle shift, long before the condition becomes complicated or urgent.

Delay

Structural degeneration often begins silently. Low-grade atherosclerotic plaques, early osteoarthritis, or mild disc changes are easy to miss - but tend to worsen without visibility or intervention.

MRI captures these early shifts, offering a chance to slow their trajectory. It informs movement strategy, physical therapy, or nutritional guidance before the condition progresses into pain, disability, or invasive treatment.

Reverse

Some findings aren't fixed - they're fluid. MRI can confirm regression in liver fat or detect structural improvements in muscle mass and alignment. In these cases, the scan becomes more than a diagnostic tool - it becomes a progress validator. It helps verify the impact of lifestyle change, structured training, or nutrition - reinforcing habits by turning invisible progress into visible evidence.

1.2 MRI's Role in the Body Data Stack

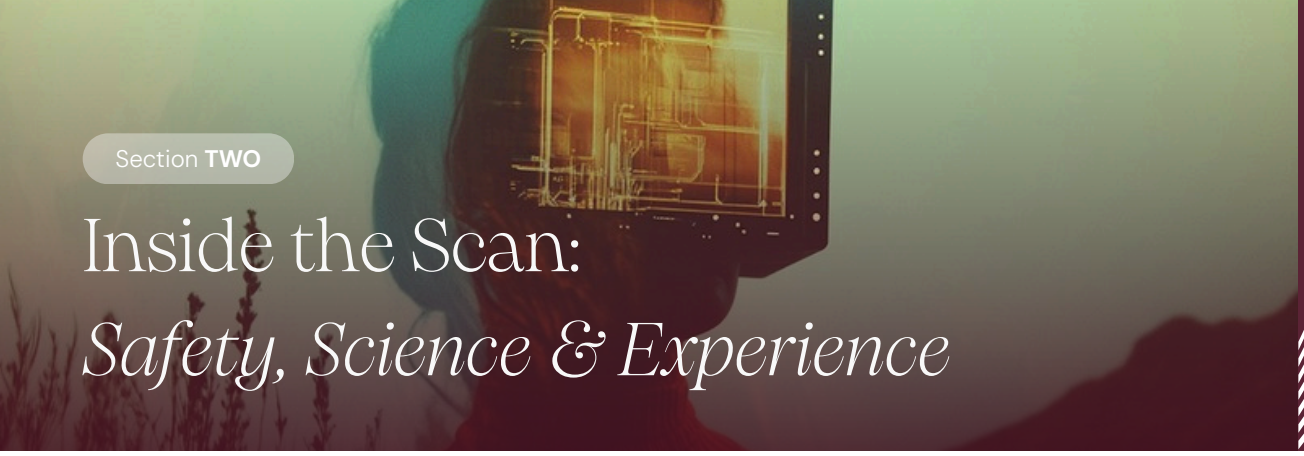
Where MRI fits in a modern health journey - from wearables to diagnostics.

Not all health data tells the same story and not all of it is needed at once. Wearables show patterns. Bloodwork shows internal function. Imaging shows structure. Each serves a distinct purpose. Whole-body MRI enters the picture when internal architecture needs to be seen, not assumed.

It's not a first-line test, nor should it be. But for individuals reaching mid-life, managing metabolic risk, or wanting more than inference, MRI offers something the others don't: **confirmation**. It answers the question no smartwatch or lab panel can fully resolve - What would a full snapshot of my insides reveal today?

This makes MRI a deeper tier in the data journey - **not routine, but responsive**. It's used when blood markers suggest drift, when family history raises concern, or when the goal moves from short-term insight to long-range clarity.

It doesn't replace labs or coaching. It strengthens them - by turning assumptions into visuals, and adding anatomical precision to the larger health picture.



Section **TWO**

Inside the Scan: *Safety, Science & Experience*

What whole-body MRI really is, how it works, and what it feels like.

Magnetic Resonance Imaging (MRI) is one of the most advanced tools in diagnostic medicine, valued solely for what it reveals. Unlike CT or PET imaging, MRI operates without ionising radiation. It uses a combination of magnetic fields and radiofrequency pulses to produce high-contrast images of soft tissues, organs, joints, and vascular structures.

Its strength lies in **detail** - in detecting subtle internal changes before they progress into symptoms, dysfunction, or disease. For the consumer, the process is straightforward: **no radiation, no prep, no recovery time**.

2.1 Safe by Design: The Radiation-Free Scan

The safest deep scan available - powered by magnetic fields, not radiation.

The idea of scanning the entire body often triggers an unspoken question: Is it safe to look this deep? With MRI, the answer is yes.

Unlike CT scans or X-rays, which use ionising radiation to produce images, MRI works differently. It harnesses magnetic fields and radiofrequency pulses to create detailed visuals - without adding cumulative risk. You could repeat the scan annually or even quarterly, and the risk profile wouldn't change.

2.1 Safe by Design: The Radiation-Free Scan
(cont.)

There's no radiation. No injections. No contrast dye unless specifically needed. It's a structural scan, which means the body isn't altered or stressed to make it visible.

And the experience? It's not what it used to be. Today's MRI machines are built for comfort, not just clarity. Wider entry points. Calming lights. Built-in airflow. Real-time audio support. For most people, the scan is not just tolerable - it's surprisingly uneventful.

It's rare to find a diagnostic that sees this much, this clearly, with this little downside. That's what makes MRI different. It doesn't leave a mark. It just gives you one. A snapshot of your internal reality - without tradeoffs

2.2 What the MRI Sees: From Brain to Toes

A breakdown of MRI's anatomical coverage - and why each region matters.

A whole-body MRI is not one image. It's a structured acquisition of anatomical regions, each imaged with a specific purpose. Across its 90-minute runtime, the protocol captures over a thousand cross-sectional views, covering major organ systems, joints, and vascular structures with millimetre precision.

The sequences are silent in function but powerful in what they reveal:

- Brain
- Spine
- Neck & Thorax
- Abdomen
- Pelvis
- Musculoskeletal

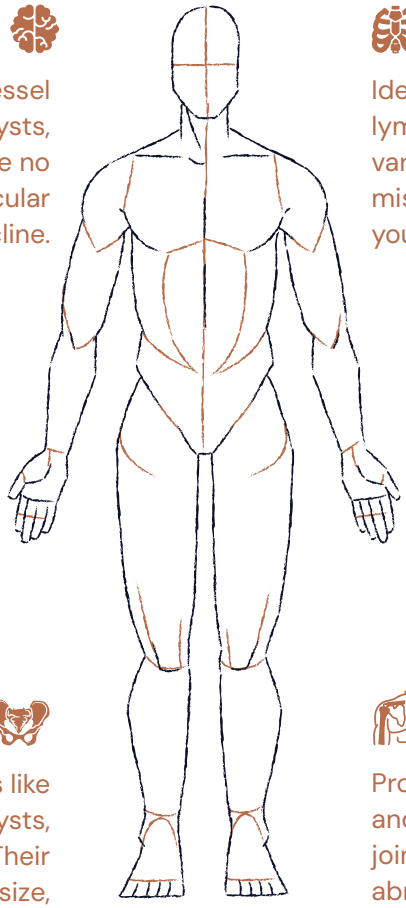
2.2 What the MRI Sees: From Brain to Toes
(cont.)

Brain

Detects silent changes like small vessel disease, minor ischemic lesions, benign cysts, or early masses. These findings often have no symptoms but can indicate risks for vascular health and cognitive decline.

Neck & Thorax

Identifies thyroid nodules, enlarged lymph nodes, and subtle vessel variations that routine exams might miss but could have implications for your overall health.



Spine

Reveals disc bulges, early wear and tear, and alignment shifts that reflect mechanical stress well before back pain or stiffness appear.

Abdomen

Shows liver fat accumulation, simple kidney cysts, and early pancreatic duct changes - silent signals that may point to metabolic or structural vulnerabilities.

Pelvis

Finds common conditions like uterine fibroids, ovarian cysts, or prostate enlargement. Their significance depends on size, growth, and your personal health context.

Musculoskeletal

Provides a screening view of both upper and lower limbs, detecting early signs of joint degeneration, fluid buildup, and abnormal growths in bones or muscles - factors that can influence mobility, posture, and long-term physical performance.

Together, these sequences construct a full-body risk profile such as structural drifts - the kind that informs timing, triage, and personal strategy.

Importantly, the scan is designed for asymptomatic individuals. That means its job is not to explain symptoms, but to surface what might otherwise go undetected - deviations that could be acted on now, rather than addressed later at higher cost.

In this way, the MRI becomes more than an image set. It functions as a structural audit: a clear, comprehensive record of how the body is holding up - and where intervention might still be early enough to matter.

Section **THREE**

Evidence Landscape: *What the Scans Actually Find*

Real-world data from real people - showing how MRI reveals hidden, actionable insights.

The Whole Body MRI is a data generating asset. When applied to low-symptom or asymptomatic populations, it consistently produces findings with clear clinical and behavioural significance. These are not speculative results or edge-case exceptions. Across both international literature and emerging Indian cohorts, detection rates cluster around three dominant categories: early malignancies, vascular anomalies, and signs of metabolic strain. What makes these findings meaningful is not their rarity, but their timing. Many of them are caught at a stage when action is still optional, minimally invasive, and potentially curative.

The scan does not predict risk; it visualises what is already underway, often in the absence of symptoms or bloodwork abnormalities.

3.1 Detection Rates That Matter

Even in healthy individuals, MRI uncovers meaningful deviations early.

Although most individuals undergoing full-body MRI do not receive alarming results, the yield is not trivial. Across screened populations, clinically relevant findings emerge with surprising regularity, even in those without symptoms or known risk factors.

- **Cancer-related findings** are seen in approximately 2-4 % of scans, typically involving small renal, thyroid, liver, prostate, or breast masses. Most are Stage I or II, often manageable if addressed promptly.

3.1 Detection Rates That Matter
(cont.)

- **Vascular abnormalities** appear in 1-2 % of cases. These include aortic aneurysms or cerebral vascular anomalies. An additional 10% show subclinical carotid plaque greater than 2 mm, which may alter preventive strategies.

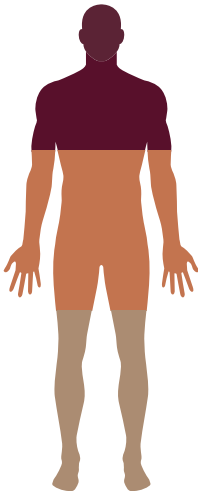
- **Metabolic abnormalities** are the most common. Between 18-25 % of individuals present with moderate to severe hepatic steatosis. A notable 8-12 % show excess visceral fat despite normal BMI, highlighting hidden cardiometabolic risk not visible through traditional metrics.

These numbers make a strong case: MRI visualises structural risks not captured by symptoms or routine bloodwork, and often at a stage when intervention remains minimally invasive.

3.2 Clarity, Not Panic: Understanding Findings

Why most results aren't alarming - but still worth acting on.

The majority of MRI findings fall into three clinical categories: actionable, monitor, or incidental. Understanding how these categories are defined - and what they mean for follow-up - is essential to interpreting the value of the scan.



Actionable
(15 - 20%)

Typical Examples
Renal mass, AAA ≥5cm, severe NAFLD

Action Pathway
Rapid referral, targeted therapy

Monitor
(10 - 15%)

Typical Examples
Adrenal adenoma, small meningioma

Action Pathway
Repeat imaging 6 - 12 months

Incidental/ benign
(≈65 %)

Typical Examples
Liver cyst, hemangioma, simple bone island

Action Pathway
Reassurance, no action

Only a minority of findings require immediate intervention. A larger proportion warrants follow-up or watchful waiting. The majority are benign anatomical variants that carry no clinical risk. Categorisation is always done within a structured reporting framework and, when needed, paired with physician guidance to prevent unnecessary anxiety or overtreatment.

3.3 MRI and the Mind: Anxiety vs. Reassurance

The emotional footprint of early insight - and how to manage it responsibly.

There is longstanding debate around the psychological impact of early imaging. Critics raise concerns about overdiagnosis, false reassurance, or anxiety from benign findings. However, in real-world cohorts using structured disclosure and clinician guidance, **the data show a different pattern.**

Most consumers report increased **clarity, reduced uncertainty, and greater peace of mind.** The knowledge that key organ systems, vessels, and joints have been visualised - and found stable - provides **a unique form of reassurance.** For many, the MRI becomes a reference point that *confirms stability* rather than *revealing threat*.

That said, it is critical to position MRI correctly. It is not a substitute for annual blood tests, metabolic panels, or lifestyle screening. Nor is it a first-line checkup. **MRI sits further along the health journey** - used when structural verification adds value to what labs and wearables suggest. Misusing it as a routine screening tool undermines both its purpose and the health system around it.

Used appropriately, full-body MRI becomes a calm checkpoint. Not to search for disease, but to confirm that - where it matters most - structure aligns with health. When no action is needed, that too is a powerful outcome.

Section **FOUR**

What a Whole-Body MRI Feels Like

From screening to exit - everything you need to know before your first scan

For most people, a full-body MRI is a first-time experience. But it's remarkably simple - structured, quiet, and complete in under two hours.

Here's how the session typically unfolds

1 **Arrival** (0 to 10 min)

Check-in. You'll change into scan-safe clothing and remove all metal. No fasting, no contrast prep, no needles unless otherwise indicated. You will receive pre-scan counselling or a preparatory video to help you feel more comfortable and informed before the MRI procedure.

2 **Positioning** (10 to 20 min)

You'll lie on a padded table that slides into the scanner. Earplugs are provided to soften the rhythmic hum of the machine. A technician checks alignment and confirms you're comfortable. You'll be able to speak to them throughout.

3 **Scanning** (20 to 90 min)

The table moves slowly through the scanner as it captures one region at a time - head, spine, abdomen, pelvis, limbs. Each sequence lasts a few minutes. You'll need to lie still, but you're never locked in. Modern machines are open-bore with airflow, lighting, and space to breathe.

4 **Exit & Wrap-Up** (90+ min)

Once scanning is complete, you'll change and leave. There's no recovery time. Results are typically delivered within days, often with a structured walkthrough and physician interpretations.

What you walk away with isn't random data. It's a structural baseline - a detailed, radiation-free scan of your internal state, revealing patterns you'd never otherwise see, and giving shape to decisions that matter.

The entire process takes under two hours. But the clarity it brings can shape your next decade.

4.1 Check-In & Safety Screening

Essential protocols for safety in a magnetic environment.

Before imaging begins, a short but critical screening step ensures safety in MRI's magnetic environment. Since MRI uses strong static magnetic fields, certain implanted or metallic devices can pose risks if not properly accounted for. You'll be asked a series of structured questions covering:

- Medical implants (e.g., pacemakers, cochlear implants, neurostimulators)
- Prior surgeries involving metal hardware or clips
- Claustrophobia or sensitivity to enclosed spaces

Pacemakers and other cardiac implants require specific attention:

- Many older devices are not MRI-compatible due to risks of malfunction or heating
- Newer models are often MRI-conditional or MRI-compatible, meaning they can be safely scanned under specific guidelines
- Imaging centers will confirm device compatibility through:
  - Manufacturer documentation
  - Physician consultation
  - Potential device reprogramming before the scan

Additional safety and prep protocols:

- No fasting, no sedation, and no contrast dye are required for most whole-body protocols
- You'll be asked to change into scanner-safe attire and remove all metal-containing items such as:

  - Jewellery and piercings
  - Underwire garments and belts
  - Cosmetics with trace metals

Once cleared, the process is highly standardised. The scan protocol is pre-set, safety parameters are enforced, and the overall experience is designed to be seamless, structured, and low-friction for the consumer.

4.2 Scan Positioning & Comfort

Modern machines are designed to soothe, not scare.

Once screening is complete, the next step is precise positioning, that is critical for image quality and comfort.

- You'll lie on a **motorised padded table**, which gradually slides you into the scanner bore.
- Most full-body MRI protocols are **feet-first**, reducing the sensation of enclosure for those concerned about claustrophobia.
- The technician ensures **full-body alignment** to match the scan plan, adjusting supports for the head, spine, and limbs.

Comfort and communication aids include:

- **Earplugs or noise-cancelling headphones**, to dampen the rhythmic knocking sounds produced by the machine.
- **Real-time intercom system**, allowing you to speak to the technician at any time during the scan.
- **Emergency call button**, placed in your hand for reassurance.
- Optional use of **video goggles or calming visuals**, depending on the imaging centre.

Important points to note:

- You'll be asked to **lie still** throughout each scan sequence (usually a few minutes each) to avoid motion artefacts.
- Despite the enclosed space, **modern MRI machines** are designed with:
  - Wider bore diameters
  - Enhanced airflow
  - Soothing lighting

These design updates significantly reduce discomfort and make the session more tolerable, even for first-timers.

Proper positioning ensures the scanner captures accurate, distortion-free images from head to toe, enabling clinicians to see internal structure with precision and clarity.

4.3 The Imaging Process

How the scan actually happens - region by region, block by block

Once positioned, the full-body MRI proceeds in structured stages known as imaging blocks. These are pre-set sequences designed to capture specific anatomical regions in high resolution.

The scan typically includes 4-6 blocks and each imaging block:

- Lasts between **3–7 minutes**, depending on the region and resolution required.
- Produces **hundreds of cross-sectional slices**, using multiple sequence types to optimise tissue contrast.
- Is fully automated, with the system adjusting parameters without interrupting the session.

What you'll experience:

- A consistent **knocking or tapping** sound, caused by rapid gradient switching.
- **No physical sensation** from the scan itself, no heat, no vibration, no discomfort.
- **No movement of the table** during each block, allowing the scanner to build a clear 3D view of that region.

This modular design not only improves scanning efficiency but also enables precise anatomical interpretation - detecting subtle deviations long before symptoms arise.

4.4 After the Scan

What happens next, and what you walk away with.

Once the final sequence is complete, the scan session wraps up quickly and without any recovery requirements. For the consumer, the post-scan phase is as streamlined as the scan itself - no aftercare, no downtime.

Immediately after the scan:

- You'll **change back into your clothes**, return any earplugs or goggles, and check out.
- There is **no sedation to wear off**, no injection site to monitor, and no contrast-related after-effects in most cases.
- You are **free to resume normal activity** - work, exercise, rest, or travel.

What happens to your images:

- The MRI machine generates over 1,000 image slices, which are auto-segmented using AI-driven tools for anatomical labelling and triage.
- A board-certified radiologist then reviews the scan in full, layer by layer, validating findings and identifying any structural deviations.
- A structured report is typically ready within 24 to 48 hours, including:
  - Annotated visuals of findings
  - Clinical interpretation in plain, actionable language
  - A summary stratified by organ system or risk area

For most people, this scan delivers:

- **Peace of mind** that major internal structures are in check
- A **baseline record** for future comparison
- A foundation for **informed, timely decision-making**

Section **FIVE**

What We Found: *Insights from Real Consumers*

Early signals. Hidden stress. Structural changes long before symptoms.

Whole-body MRI was deployed across a cohort* of symptom-free consumers to evaluate its real-world yield in preventive, signal-based health optimisation. The findings reveal not only silent deviations that accumulate beneath the surface, but also underscore where lifestyle, metabolic load, and environmental drift begin expressing structurally - long before symptoms emerge.

Silent but Significant

The most common (and often overlooked) structural changes.

Big Picture Learnings

What early adopters taught us about MRI's role in future care.

Rare but Game-Changing

The high-stakes deviations that MRI catches early.

User Experience: Beyond the Machine

What consumers felt, wanted, and needed throughout the scan process.

Turning Insight into Action

How findings were translated into lifestyle and clinical guidance.

For the appendix : ***cohort=442 individual scans***

5.1 Silent but Significant

The most common (and often overlooked) structural changes.

Across the cohort, several early-stage structural changes appeared repeatedly - silent, but highly instructive:

Vascular Narrowing (Stenosis)

In nearly half of participants (49 %), MRI detected narrowing of blood vessels, often before clinical symptoms surfaced. These represent the earliest signals of vascular stress and progressive atherosclerotic changes, offering a window for early intervention.

Chronic Sinus Inflammation

37% of individuals showed evidence of ongoing sinusitis, reflecting rising allergic burdens, airway sensitivity, and environmental exposures common in modern urban populations.

Cerebral Atrophy & Small Vessel Ischemic Changes

23% demonstrated mild brain structural changes associated with small vessel disease. While asymptomatic today, these findings serve as early markers of neurovascular ageing and long-term cognitive risk.

Liver Stress (Hepatic Fat & Enlargement)

9% exhibited hepatomegaly or early fatty liver changes, signalling long-term metabolic imbalance, frequent glucose variability, or sustained energy surplus, a common early expression of metabolic drift.

Disc Degeneration

Cervical and lumbar disc bulges were frequent structural findings, reflecting postural strain, sedentary work patterns, and poor core engagement. While many remain silent initially, they represent early mechanical vulnerability.

Gallstones

Gallbladder stones appeared in approximately 15–20% of clients, often asymptomatic but still physiologically relevant for long-term health.

PCOS

Among younger female clients, polycystic ovarian changes frequently surfaced as one of the early endocrine expressions of metabolic dysregulation.

5.2 **Rare but Game-Changing**

The high-stakes deviations that MRI catches early.

While uncommon, several serious findings were identified that carried significant clinical consequences:

- A biopsy-confirmed early-stage breast cancer
- Moderate-to-severe cerebrovascular stenosis
- Carotid tortuosity associated with vasculitis
- Silent lacunar infarcts, precursors to potential strokes
- Cases of idiopathic intracranial hypertension
- One case of active pulmonary tuberculosis identified via follow-up imaging

These represent precisely the types of actionable deviations MRI can surface - conditions that would likely remain undetected under conventional routine health screening protocols.

5.3 **Turning Insight into Action**

How findings were translated into lifestyle and clinical guidance.

While the majority of findings were not immediately life-threatening, they reflect silent physiological drift - deviations from baseline that accumulate quietly over time. Every participant received tailored guidance aligned to the nature of their findings:

- Movement recalibration: resistance training, mobility correction, and postural awareness
- Metabolic balancing: glucose regulation, lower carbohydrate loads, and anti-inflammatory dietary shifts
- Sleep normalisation: targeted sleep routines to support metabolic and neurological recovery
- Vascular management: lipid correction, aerobic capacity building, and blood pressure modulation

In essence, MRI provided not only detection but personalised direction - mapping exactly where each consumer's system required recalibration.

5.4 User Experience: Beyond the Machine

What consumers felt, wanted, and needed throughout the scan process.

The diagnostic process remained highly tolerable for most clients. However, certain procedural dynamics required adaptation:

- **Claustrophobia and Scan Anxiety**

For clients with elevated procedural anxiety, scan protocols were segmented into multiple shorter sessions. An attender was permitted inside the scan room where appropriate for reassurance.

- **Demand for Physician Interpretation**

Approximately 90% of clients opted for post-scan consultation. The complexity and granularity of structural MRI reports exceeded most clients' ability to self-interpret, reinforcing the need for expert medical navigation and coaching integration.

5.5 Big Picture Learnings

What early adopters taught us about MRI's role in future care.

- Whole-body MRI successfully identified deviations even in clients who otherwise passed annual labs and basic health screens.
- Most findings reflected correctable or preventable physiological drift rather than fixed irreversible disease.
- MRI's greatest value lies not in detecting rare disease but in surfacing silent signals early – when adjustments are still simple, minimally invasive, and highly effective.
- Structured physician consults and coaching support remain essential to translate complex reports into clear, confidence-building action plans.
- Consumer anxiety around findings was largely neutralised through well-managed disclosure models and guided interpretation pathways.

Section **SIX**

Ethics, Emotions & Equity in Imaging

The deeper layers of whole-body MRI - how to use it wisely, and for all.

What happens when a scan reveals something you weren't looking for?

As full-body imaging becomes more precise and accessible, it also enters deeper psychological and ethical terrain. *Incidental findings* - unexpected results unrelated to the reason for the scan - are no longer rare. Some offer early warnings that guide timely action. Others spark anxiety, over-medicalisation, or confusion. This section examines how we make sense of the information MRI reveals, how responsibility is shared between systems and individuals, and how we can uphold clarity, equity, and care in a space that sees more than we might expect.

6.1 Finding What You Didn't Expect

How to handle incidental findings with clarity, not confusion.

With full-body MRI, structural detail is captured at a level far beyond routine screening. As a result, it's common to come across unexpected findings of anatomical variations or early-stage changes that were not being actively investigated. These incidental findings are a routine part of high-resolution imaging.

In most cases, these findings are:

- Benign and non-progressive, like liver cysts or small bone islands
- Clinically insignificant, requiring no treatment or follow-up
- Detected early enough to remain fully optional in terms of intervention

6.1 Finding What You Didn't Expect
(cont.)

Still, without context, even harmless results can trigger concern. Much of the anxiety attributed to MRI has less to do with the findings themselves and more to do with **how they're delivered, framed, and understood**.

To address this, structured MRI programs now use standard triage systems to classify each finding:

- **Actionable** (requires referral or intervention)
- **Monitor** (repeat imaging in 6–12 months)
- **Incidental** (no action, reassurance only)

These reactions are often short-term. Most people adapt quickly and feel grateful for the clarity. In fact, many describe the scan as delivering a sense of relief - either that nothing is wrong, or that something small was caught early and can be dealt with before it escalates.

A few things to keep in mind:

- Not every finding is a problem.
- You'll always receive structured guidance on what's actionable and what isn't.
- The goal is clarity - not overreaction.

The psychological ripple effect extends beyond the individual.

Partners, parents, and children may also be impacted by the weight of unexpected findings. This is why clarity, support systems, and thoughtful communication are essential. **Whole-body MRI is not designed to induce fear** - it is intended to foster confidence by turning uncertainty into informed awareness.

The discovery of incidental findings through whole-body MRI scans raises important ethical questions. While some findings can lead to early interventions, others may cause unnecessary anxiety or lead to overdiagnosis.

6.1 Finding What You Didn't Expect
(cont.)

Ethical management involves:

- **Informed Consent:** Ensuring patients are aware of the possibility of incidental findings before undergoing scans.
- **Clear Communication:** Providing understandable explanations of findings to avoid misinterpretation and undue stress.
- **Appropriate Follow-Up:** Establishing protocols for managing incidental findings, including when to monitor and when to intervene.
- **Respect for Autonomy:** Allowing patients to make informed decisions about their care based on comprehensive information.

Health technologies, especially those as powerful as full-body MRI, must evolve with care and conscience. The promise of early insight must be paired with a deep commitment to fairness - not just in who can access it, but in how it's delivered and how it feels.

6.2 Making MRI Inclusive

Tools this powerful should serve everyone. Here's how we get there.

We are entering a new chapter in healthcare. This one is defined not just by better tools, but by better principles. As diagnostics become more advanced and accessible, the expectation is shifting: health is no longer something done to the individual, but something navigated with them.

At the centre of this shift are three non-negotiables - **agency, autonomy, and access.**

6.2 **Making MRI Inclusive**
(cont.)

As whole-body MRI becomes part of preventive care, its deployment must reflect more than technical progress. It must reflect social responsibility.

Access Without Exception

Insight into your health should not depend on where you live, what you earn, or how you identify. Diagnostic access must be designed for breadth - not only to improve outcomes, but to prevent the silent expansion of disparity and stress.

Bias is a Design Flaw

From algorithms to communication, unchecked assumptions can distort care. Equitable systems require proactive safeguards - audits, transparency, and continuous feedback to ensure no group is systematically disadvantaged in what they learn or how they're treated.

Accessibility as a Standard, Not an Add-On

Every touchpoint, from booking to results, should accommodate a spectrum of needs. That includes disability access, language clarity, digital ease, and inclusive interfaces.

Empathy as Infrastructure

Ethical design isn't just about avoiding harm - it's about building trust. Every aspect of the experience, from consent forms to follow-up reports, must be structured around human understanding, not just compliance. This is how diagnostic innovation becomes sustainable and widely accepted.

If health is to become truly proactive and personal, then systems must follow suit. Full-body MRI cannot just offer deeper visibility - it must do so with fairness, precision, and care for all.

Section **SEVEN**

Return on Insight: *The Economic Case for MRI*

Why early visibility saves more than just lives - it saves system-wide costs.

As India faces the dual challenge of rising chronic disease and overburdened care infrastructure, there is growing demand for interventions that shift the curve earlier. Whole-body MRI offers one of the clearest value propositions in this space: early visibility, consolidated diagnostics, and a high detection yield, all in a single session.

Each finding caught early avoids costs - clinical, financial, emotional - that multiply with time.

What's often missed in traditional screening is structural coherence. Most piecemeal tests are reactive, fragmented, or symptom-driven. In contrast, whole-body MRI brings systems-level visibility, reducing redundancy and helping triage what needs attention now vs. what can be monitored.

7.1 Better Value Than Piecemeal Testing: The Indian Perspective

One scan. More clarity. Less fragmentation. Better outcomes.

Preventive diagnostics have often been framed as a luxury: valuable, but financially out of reach for most. Yet the data tells a different story. For urban Indian adults aged 40 and above, a whole-body MRI is not just accessible; it is increasingly cost-effective when compared to conventional screening pathways.

7.1 Better Value Than Piecemeal Testing: The Indian Perspective
(cont.)

Instead of navigating a scattered map of tests - each requiring separate appointments, fragmented reports, and often exposing patients to ionising radiation - a single whole-body MRI delivers consolidated insights in one visit. It provides a structural overview that not only matches but often exceeds the clinical yield of the traditional piecemeal route.

Critically, the scan doesn't just detect more - it detects earlier. That timing shift changes everything: treatment outcomes, costs avoided, and lives rerouted before disease becomes irreversible.

METRIC	WHOLE-BODY MRI	CONVENTIONAL PIECEMEAL ROUTE
Visits required	1 (≈ 2 h door-to-door)	4-5 over 2-3 weeks
Radiation dose	0 mSv	8–12 mSv (CT)
% cancers caught at Stage I/II *	75%	28%
Average treatment cost avoided †	**₹3.5 lakh**	-
Cost per DALY averted ^	**₹22,000**	>₹65,000

Weighted average from Aarthi × Resolute cohort + Indian Cancer Registry. † Difference between early vs. late-stage therapy spend.
^Based on ICMR disability-adjusted life-year valuations; threshold for "very cost-effective" = India's per-capita GDP ≈ ₹1.9 lakh.

When benchmarked against global public health standards, whole-body MRI already qualifies as a "highly cost-effective" intervention - one that delivers more actionable insights with fewer tradeoffs.

For the price of an annual health checkup, consumers gain access to radiation-free, resolution-rich insights that can drive meaningful preventive action. Today, when time, clarity, and early intervention are critical, whole-body MRI shifts the calculus by providing anatomical precision and timely foresight.

Section **EIGHT**

MRI as a Node in the Data Spine

It's not a standalone test. It's part of an intelligent, integrated system.

Whole-body MRI does not stand alone as an isolated diagnostic. It becomes most powerful when embedded into a structured health optimisation system – one that sequences data layers, integrates across domains, and supports long-term decision making. Within this architecture, MRI functions as a precision structural layer inside the broader data spine, positioned to complement, not replace, existing biomarker, wearable, and functional data.

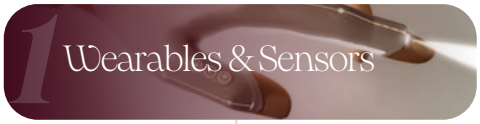
8.1 Stacking Smarter with an MRI

When is the right time to bring in structural imaging? And why it matters.

The body's internal state can be monitored across multiple layers of increasing resolution. Each layer offers distinct information value, and each is introduced only when it materially informs the next decision.

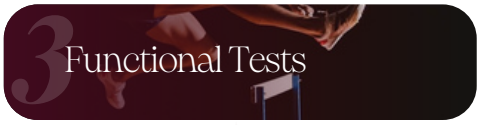
This is the operational sequence that converts raw metrics into actionable precision.

8.1 Stacking Smarter with an MRI
(cont.)



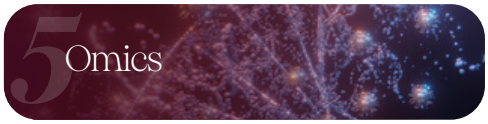
Continuous feedback loops capturing sleep, heart rate variability, glucose variability, and movement. These form the base signal detection layer, capturing data in real-time.

Laboratory panels revealing metabolic, inflammatory, hormonal, and micronutrient status. Biomarkers capture biochemical drift that may not yet be reflected structurally.



Stress tests, strength assessments, VO_2max, and neuromuscular evaluations quantify how systems perform under load, offering practical real-world capability signals.

This is where whole-body MRI enters. Structural anatomy is verified directly, detecting early-stage tumours, organ fat accumulation, vascular lesions, degenerative changes, and other silent pathologies that may not appear in wearables or labs. MRI validates what other metrics may only infer.



The deepest tier, providing molecular-level insight into gene expression, proteomic shifts, metabolic pathway integrity, and gut microbiome function. Reserved for advanced longevity interventions and deeper personalisation.

8.1 Stacking Smarter with an MRI
(cont.)

Within this hierarchy, whole-body MRI occupies a calibrated position - after wearables, biomarkers, and functional testing have guided preliminary interventions. It is not the first layer of inquiry, but a mid-tier confirmation layer designed to reveal what is otherwise invisible until dysfunction becomes advanced.

MRI is applied selectively, often in Tier 3 and Tier 4 health optimisation stages: metabolic stabilisation, early degeneration surveillance, and mid-life preventive screening. The goal is not to create data overload, but to integrate highly specific anatomical intelligence into a system where all other variables have been actively tuned.

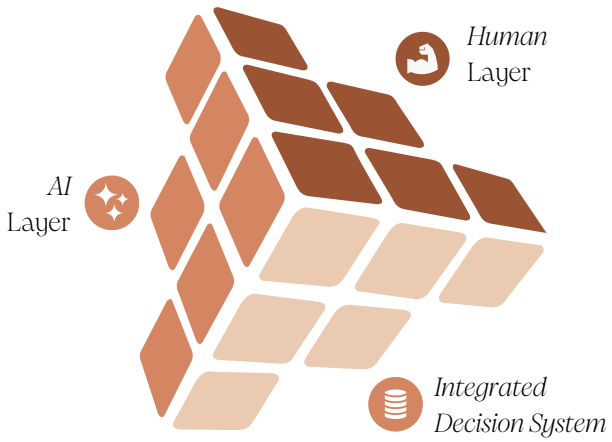
8.2 The Centaur Team: Human + Machine

Why MRI's power is multiplied when humans and AI work together.

The scale and complexity of modern health data exceed unaided human cognition. MRI generates hundreds of high-resolution image sequences, which join an already complex stream of wearables, labs, functional data, and subjective reports. No solo physician can independently reconcile this level of complexity at scale. Nor can artificial intelligence fully replace clinical judgement, personal context, and patient preference.

8.2 The Centaur Team: Human + Machine
(cont.)

This is where the Centaur Model by Resolute becomes essential: a hybrid intelligence loop combining human expertise with machine-powered data processing. The system operates as follows:



- **AI Layer:** Automates ingestion of wearable and lab data; flags anomalies; segments MRI scans; suggests risk models; calibrates intervention dose and timing.
- **Human Layer:** Provides clinical judgement, contextual framing, ethical guidance, patient preference incorporation, shared decision-making, and real-world coaching.
- **Integrated Decision System:** This continuous feedback loop allows for rapid yet highly personalised adjustments across health domains - balancing the scalability of machine learning with the irreplaceable nuance of clinical and behavioural expertise.

When properly executed, MRI becomes one node in a fully integrated, adaptive operating system that allows consumers to move through progressive tiers of health optimisation with precision, safety, and confidence.

Supporting Reads

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Resolute › optiME

At Resolute, we believe that health optimisation begins with better detection. This collaboration with Aarthi Scans marks a powerful step forward in democratizing access to proactive, whole-body health intelligence.

Full-body MRI, when paired with structured interpretation and integrated into longitudinal health journeys, unlocks a new frontier in risk identification - going beyond symptom-led diagnostics to detect emerging threats before they become clinical problems.

In our work with thousands of individuals across India, we have seen firsthand the transformative potential of combining deep diagnostics with AI-driven personalisation and human-centered coaching. This study reinforces what we've long advocated: that imaging data, when contextualised with blood biomarkers and functional assessments, can serve as a foundational pillar for preventive health and performance optimisation.

As India steps into a future of longevity, resilience, and personalised care, we see full-body MRI as a critical part of the toolkit - not just for disease detection, but for designing lives with more healthspan, agency, and clarity. We are proud to partner with Aarthi Scans to bring this vision to life at scale and to lead the shift from reactive healthcare to proactive, data-driven health design.

Srinivasa Vivek

Director, Co-Founder, Resolute

Consult with **Resolute Concierge** if
Whole Body MRI is right for you

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