

Early-onset cancer is rising: Can whole-body MRI bridge the screening gap?

“Early detection saves lives.” It’s a phrase many of us have heard — and for good reason. Screening aims to detect disease before it causes symptoms, allowing for earlier and more effective treatment, and in turn, improved survival outcomes.

This article explores the evolving challenges of cancer screening, balancing the risks of incidental findings with the benefits of emerging technologies like full-body MRI. As cancer patterns shift and younger, underrepresented populations increasingly fall outside conventional screening guidelines, full-body MRI offers a new way forward. This article aims to start a broader conversation about what it means when population-wide screening recommendations no longer reflect the realities of today’s healthcare landscape.

Screening in a changing landscape

While approximately 75% of individuals believe that all cancer screening is inherently beneficial¹, there are known risks associated with “too good” medicine. One of the key challenges is the detection of incidental findings and false positives, many of which may not be clinically significant. Determining which findings warrant further investigation can be complex, especially when their relevance to the patient’s health is unclear. Although screening accuracy depends on both technology and clinical expertise, findings of uncertain significance can often lead to additional testing. In some cases, this cascade of follow-up investigations can result in psychological distress and financial burden. The findings themselves may not be “wrong,” but the act of knowing can initiate a chain of interventions that may not ultimately benefit the patient.

This dilemma is well illustrated in mammography, where in Australia, the total cost of investigating false positives exceeds the cost of investigating true positives (2). Yet, the long-term benefits of early detection, such as improved survival and reduced disease burden, have been considered worth the trade-off. Health professionals widely accept a certain margin of error in exchange for the opportunity to detect cancer early, particularly when supported by decades of robust evidence. However, it’s important to acknowledge that much of this foundational data was established over thirty years ago, in a very different healthcare and population context.

As disease patterns shift and demographics evolve, we must reconsider whether the balance of risk and benefit still holds. This poses important questions that must be considered. What happens when the populations these tools were designed to serve no longer reflect those most at risk? And how do we evaluate newer technologies like full-body MRI when long-term survival outcomes may not be evident for decades?

Complicating matters further is a growing shift in how we define meaningful outcomes: it’s no longer just about living longer, but about living better. Healthspan, not just lifespan, is becoming the new benchmark.

For the first time in modern medicine, we are witnessing multiple intersecting paradigm-shifts that challenge how experts assess the value and risk of screening technologies.

The rise of early-onset cancers

Younger adults are increasingly being diagnosed with cancers previously considered “diseases of aging.” In individuals younger than 50 years of age, a growing body of evidence shows a rise in multiple tumour types, including colorectal, pancreatic, breast and prostate cancer. Importantly, these increases are not fully explained by increase in screening uptake as these cancer increases are seen in countries and cancers without national screening programs (3,4).

Instead, many researchers point to environmental and lifestyle factors unique to recent generations. Diets high in ultra-processed foods, increased alcohol and antibiotic use, sedentary behaviour, and exposure to environmental toxins are just a few likely contributors (3). These early-life exposures can drive cancer development decades later, and evidence shows this risk is tracking with birth cohorts (5,6).

Compounding the issue is the nature of early-onset cancers themselves. They often present with more aggressive features, progress more quickly, and carry worse prognoses. Simply, early-onset cancer is a clinically different disease compared to late-onset counterpart. Despite this, symptoms in younger patients may be overlooked or attributed to benign causes due to assumptions that these patients are “too young” for cancer. This delay can lead to late-stage diagnosis and poorer outcomes.

Bridging the gap with new technology

Without age- and cancer-appropriate screening options, individuals often bear the burden of self-advocacy. Full-body MRI, when guided by experienced providers, offers a way to fill this gap. Though not a replacement for traditional pathways, it may be the only available proactive tool for those falling outside conventional screening guidelines.

This technology is rapidly advancing, and Whole Body MRI™ is at the forefront of that progress. Early concerns about false positives and negatives were largely based on outdated scanners or protocols limited by distortion and artefact (7). Our latest advancement, full-body diffusion imaging, addresses these shortcomings by significantly reducing ambiguity, improving diagnostic confidence, and lowering the risk of unnecessary follow-up testing.

Whole-body MRI is not for everyone. However, for motivated individuals between the ages of 30 and 65, it can offer valuable insight, often before symptoms arise, while providing a unique opportunity to proactively influence long-term health outcomes. With informed consent and thoughtful application, it has the potential to become a cornerstone of modern preventative care.

Additional Information

For more information, read our Resource guides on [What to Look For in a Whole-body MRI Provider?](#) or visit our [Frequently Asked Questions](#) page.

To book your Journey into the Known with Whole Body MRI™, [contact us](#).

References

1. Dunn BK, Woloshin S, Xie H, Kramer BS. Cancer overdiagnosis: a challenge in the era of screening. *Journal of the National Cancer Center*. 2022 Dec;2(4):235–42.
2. Soon J, Houssami N, Clemson M, Lockie D, Farber R, Barratt A, et al. The financial implications of investigating false-positive and true-positive mammograms in a national breast cancer screening program. *Australian Health Review*. 2023;47(2).
3. Zhao J, Xu L, Sun J, Song M, Wang L, Yuan S, et al. Global trends in incidence, death, burden and risk factors of early-onset cancer from 1990 to 2019. *BMJ Oncology*. 2023;2(1).
4. Ugai T, Sasamoto N, Lee HY, Ando M, Song M, Tamimi RM, et al. Is early-onset cancer an emerging global epidemic? Current evidence and future implications. Vol. 19, *Nature Reviews Clinical Oncology*. 2022.

5. Chang SH, Patel N, Du M, Liang PS. Trends in Early-onset vs Late-onset Colorectal Cancer Incidence by Race/Ethnicity in the United States Cancer Statistics Database. *Clinical Gastroenterology and Hepatology*. 2022;20(6).
6. Chen J, Yang W. Comparing cohort and period trends of early-onset colorectal cancer: a global analysis. *JNCI Cancer Spectr*. 2024 Jul 1;8(4).
7. Kwee RM, Kwee TC. Whole-body MRI for preventive health screening: A systematic review of the literature. *J Magn Reson Imaging*. 2019;50(5):1489-1503. doi:10.1002/jmri.26736

About the Author

Dr. Amanda Forbes (PhD) is a medical and science writer with significant clinical and laboratory-based research experience with a particular interest in advancing early detection and oncology treatments. She works with Whole Body MRI Pty Ltd and Mermaid Beach Radiology to facilitate Investigator-Initiated research evaluating novel-imaging based-biomarkers of disease.

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