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Ahlawat, S.^a, Debs, P.^a, Amini, B.^b, Lecouvet, F.E.^c, Omoumi, P.^d, Wessell, D.E.^e

Clinical Applications and Controversies of Whole-Body MRI: AJR Expert Panel Narrative Review
(2023) *American Journal of Roentgenology*, 220 (4), pp. 463–475. Cited 8 times.

DOI: 10.2214/AJR.22.28229

^a Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins Medical Institutions, 601 N Caroline St, 3rd Fl, Baltimore, MD 21287, United States

^b Department of Musculoskeletal Imaging, MD Anderson Cancer Center, Houston, TX, United States

^c Department of Radiology, Institut de Recherche Expérimentale et Clinique (IREC), Cliniques Universitaires Saint Luc, Université Catholique de Louvain, Brussels, Belgium

^d Department of Diagnostic and Interventional Radiology, Lausanne University Hospital, University of Lausanne, Lausanne, Switzerland

^e Department of Radiology, Mayo Clinic, Jacksonville, FL, United States

Abstract

Whole-body MRI (WB-MRI) is increasing in clinical acceptance and utilization for a range of indications. WB-MRI is currently an established screening tool for children and adults at high risk of developing malignancy, with the strongest supporting evidence in patients with Li-Fraumeni syndrome. WB-MRI has been added to professional society guidelines for staging disease in patients with certain malignancies including multiple myeloma and has been proposed as a technique to screen for metastatic disease in patients with visceral malignancies including prostate cancer and breast cancer. Emerging data support the utility of WB-MRI in children with malignancies such as Ewing sarcoma, in adults with myxoid liposarcoma, and in pregnant patients with occult or newly detected malignancy. WB-MRI can further help evaluate disease extent and treatment response in patients with nononcologic conditions such as chronic nonbacterial osteomyelitis, myopathy, inflammatory arthritis, and fever of unknown origin. This AJR Expert Panel Narrative Review summarizes available evidence and recommendations supporting the clinical applications of WB-MRI. This article also highlights limitations, barriers, and controversies associated with utilization of WB-MRI in routine clinical practice. © 2023 American Roentgen Ray Society. All rights reserved.

Author Keywords

DWI; Li-Fraumeni syndrome; metastatic disease; multiple myeloma; pregnancy; whole-body MRI

Index Keywords

Article, bone scintiscanning, breast cancer, cancer risk, cancer susceptibility, chondrosarcoma, chronic nonbacterial osteomyelitis, colonoscopy, diagnostic accuracy, disease activity, esophagogastroduodenoscopy, Ewing sarcoma, Hodgkin disease, human, Li-Fraumeni syndrome, mammography, monoclonal gammopathy of undetermined significance, multiple myeloma, myopathy, myxosarcoma, nonhodgkin lymphoma, noninvasive prenatal testing, osteolysis, osteomyelitis, osteosarcoma, plasmacytoma, population research, positron emission tomography-computed tomography, practice guideline, prospective study, prostate cancer, pyrexia idiopathica, radiation exposure, rheumatoid arthritis, sensitivity and specificity, smoldering multiple myeloma, treatment response, whole body MRI, adult, breast tumor, child, Li-Fraumeni syndrome, male, nuclear magnetic resonance imaging, pregnancy, procedures, prostate tumor, whole body imaging; Adult, Breast Neoplasms, Child, Humans, Li-Fraumeni Syndrome, Magnetic Resonance Imaging, Male, Pregnancy, Prostatic Neoplasms, Whole Body Imaging

Correspondence Address

Ahlawat S.; Russell H. Morgan Department of Radiology and Radiological Science, 601 N Caroline St, 3rd Fl, United States; email: sahlawa1@jhmi.edu

Publisher: American Roentgen Ray Society

ISSN: 0361803X

CODEN: AJROA

PubMed ID: 36169545

Language of Original Document: English

Abbreviated Source Title: Am. J. Roentgenol.
2-s2.0-85151042712

Document Type: Article

Publication Stage: Final

Source: Scopus