Malignant diseases (metastatic solid tumors, lymphoma and plasmacellneoplasm) might be considered as a potential systemic disease. For cancer screening, staging, detection and therapy monitoring in clinical routine several different, time-consuming imaging studies usually are employed [1]. Early and exact detection of the tumor, its local expansion and eventual metastasis are absolutely necessary for a fast and adequate therapy [2]. Such staging and its consequences can lead to a decrease in mortality and morbidity.

Dedicated examinations with MRI have a limited field of view, making multiple pass-throughs necessary for full-body imaging. New developments in MRI, such as high performance gradient technology, ultra-fast data acquisition (iPat), new coil and table concepts and new acquisition techniques (MDS=Move During Scan) allow whole-body examinations in a tolerable and considerably shortened timeframe.

Turbo-STIR Whole body-MRI might be useful in detecting bone marrow metastases, bone marrow involvement caused by plasmacellneoplasm and lymphoma [2-4], as well as other tumor-related findings [3,4,5]. Contrast-enhanced Whole body-MRI is a promising modality for diagnostics in cancer patients and seem to be more suitable for accurate tumor staging than PET, CT and PET/CT in respect to brain, bone (marrow) and liver metastases; however, PET, CT and PET/CT are superior in respect of detection of lung and soft tissue metastases [6-8]. The detection of pulmonary metastases strongly depends on the lesion size and the MRI sequence technique. Another disadvantage is the limited specificity of MRI in characterisation of lymph node metastases, which may be alleviated by USPIO Whole body-MRI. New concepts like DWI whole body-MRI and MRI/PET- whole body scanning might have a great potential in cancer screening, detection and staging [9,10]. Whole body-MRI opens new opportunities in modern radiology as cancer can be detected with high sensitivity. Whole-Body MRI has already been successfully used for several oncological indications. Because of the lack of radiation exposure whole body-MRI might have a great potential in secondary preventive examinations, compared to MSCT.

References:
Whole Body-MRI In Oncology

Ghanem N, MD

University Hospital Center Freiburg, Dept. Of Diagnostic Radiology (Prof. Dr. M. Langer), Freiburg, Germany