

# Special Focus

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*Screening Whole-Body MRI*  
*(4 speakers, 60 min)*



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# Time Table

Sunday, May 22, 2022  
Room 202

Time	Topics	Speakers	Moderators
14:30-14:35 (5mins)	Opening remarks - The golden age of WH-MRI screening	Shi-Chi Ko	Shi-Chi Ko Chung Jung Lin
14:35-14:55 (20mins)	The Evidence and Current Status of screening WB-MRI	Chung Jung Lin	Shi-Chi Ko Chung Jung Lin
14:55-15:15 (20mins)	WB-MRI as a powerful precision medicine tool	David S. Karow	Shi-Chi Ko Chung Jung Lin
15:15-15:22 (7mins)	WB-MRI in preventive healthcare: experience and challenges	Yen-Chun Shen	Shi-Chi Ko Chung Jung Lin
15:22-15:30 (7mins)	Practical issues of WB-MRI for health screening	Yu-Chen Cheng	Shi-Chi Ko Chung Jung Lin

# *Screening whole-body MR - the golden age is coming?*

**Organizer: Chung Jung Lin, MD**

## **Overview:**

Screening whole-body MR was innovated in Taiwan 20 years ago for screening silent dangerous lesions such as pancreas tumor or cerebral aneurysm, or symptomatic pathology, such as HIVD or metastasis for back pain. Nevertheless, the practice among different sites varies much. In line with precision medicine, quantitative standardized imaging along with appropriate management will increase the examinees' benefits and avoid unnecessary fear. AI-empowered diagnosis and quantification of the huge amount data may bring WB-MRI into a golden age.

Speakers will review the reported evidence from global centers, explore the AI-aided radiogenomics prediction model and share their experience about how to optimize and customize the imaging protocols, avoiding misdiagnosis and interacting skill with examinee and the potential of establishing WBMR-RADS system

# *The Evidence and Current Status of screening WB-MRI*



**Chung Jung Lin, MD, Taiwan / Taipei**

- Division Head of Hi-Tech Imaging Center of Taipei Veterans General Hospital
- Professor, Medical College, National Yang Ming Jiao Tong University
- Prior Director of Neuroradiologic Society of Taiwan
- Integrated comprehensive Imaging Screening and Patient Management

# *The Evidence and Current Status of screening WB-MRI*

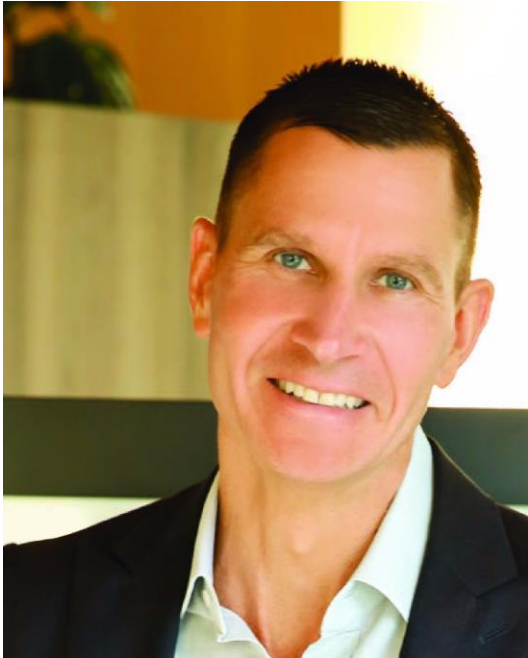
- **Synopsis:**

- Although the benefits for patients at high risk of cancer have been proved, the impacts upon the general population is still controversial. Our aim is to review the methodologies used and the results of the published studies on per patient and per lesion analysis, and to provide recommendations on the use of WB-MRI for cancer screening.

- **Key Reference:**

- Zugni et al. Whole-body magnetic resonance imaging (WB-MRI) for cancer screening in asymptomatic subjects of the general population: review and recommendations *Cancer Imaging* (2020) 20:34
- R.Kwee et al Whole-Body MRI for Preventive Health Screening: A Systematic Review of the Literature *J. MAGN. RESON. IMAGING* 2019;50:1489–1503.

# *WB-MRI as a powerful precision medicine tool*



- President, Chief Innovation Officer and Chief of Radiology, Human Longevity, Inc.
- Associate Professor of Radiology, University of California, San Diego
- Integration of whole body MRI quantitative imaging biomarkers with genomic data

**David S. Karow, MD, PhD / U.S.A / San Diego, California**

# *WB-MRI as a powerful precision medicine tool*

- **Synopsis:**

- The primary role of whole body MRI is not screening, but rather derivation of quantitative imaging biomarkers such as liver fat, liver iron, hippocampal volume, visceral abdominal fat, muscle mass, cardiac ejection fraction and other markers that can be followed longitudinally and integrated with genomic and blood data.

- **Key References:**

- Hou, Y.C., Yu, H.C., Martin, R., Cirulli, E.T., Schenker-Ahmed, N.M., Hicks, M., Cohen, I.V., Jönsson, T.J., Heister, R., Napier, L., Swisher, C.L., Dominguez, S., Tang, H., Li, W., Perkins, B.A., Barea, J., Rybak, C., Smith, E., Duchicela, K., Doney, M., Brar, P., Hernandez, N., Kirkness, E.F., Kahn, A.M., Venter, J.C., Karow, D.S., Caskey, C.T. Precision medicine integrating whole-genome sequencing, comprehensive metabolomics, and advanced imaging. *Proc Natl Acad Sci U S A*. 2020 Feb 11;117(6):3053-3062. PMID: 31980526; PMCID: PMC7022190.
- Petralia, G., Koh, D.M., Attariwala, R., Busch, J.J., Eeles, R., Karow, D., Lo, G.G., Messiou, C., Sala, E., Vargas, H.A., Zugni, F., Padhani, A.R.. Oncologically Relevant Findings Reporting and Data System (ONCO-RADS): Guidelines for the Acquisition, Interpretation, and Reporting of Whole-Body MRI for Cancer Screening. *Radiology*. 2021 Jun;299(3):494-507. PMID: 33904776.

# *WB-MRI in preventive healthcare: experience and challenges*



- Director of Department of Medical Imaging of Taipei Beitou Health Management Hospital
- Attending Physician, Department of Radiology, Taipei Veterans General Hospital
- From medical imaging to holistic and personalized healthcare

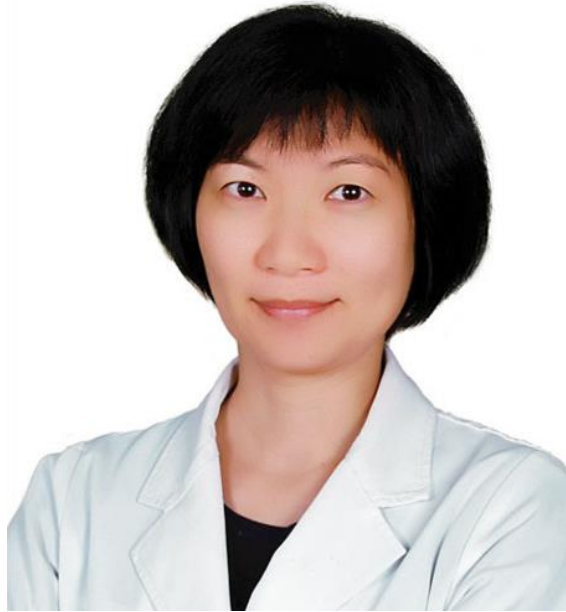
**Yen-Chun Shen, MD, Taiwan / Taipei**



# *WB-MRI in preventive healthcare: experience and challenges*

- **Synopsis:**
- WB-MRI is one of the important imaging techniques implementing in preventive healthcare in recent years. We'll share our experience including the diagnostic yields of imaging screening in general population, and discuss the limitations of WB-MRI in health screening. In addition to WB-MRI, complementary tools, multidisciplinary team and rapport building are crucial to achieving personalized and comprehensive healthcare.
- **Key References:**
- Yeliz Basar et al. Whole-body MRI for preventive health screening: Management strategies and clinical implications. 2021 European Journal of Radiology
- Fabian Bamberg et al. Whole-body MR imaging in the German National Cohort: rationale, design, and technical background Radiology 2015;277:206–220
- Carsten Oliver Schmidt et al. Psychosocial consequences and severity of disclosed incidental findings from whole-body MRI in a general population study. Eur. Radiol. 2013; 23: 1343-1351

# *Practical issues of WB-MRI for health screening*



**Yu-Chen Cheng, MD, Taiwan / Taipei**

- Attending Physician, Department of Diagnostic Radiology, Eonway Health Management Center, West Garden Health Care Group
- Attending Physician, VGH-HT Imaging Center, Department of Radiology, Taipei Veterans General Hospital
- Integrated medical imaging for preventive health screening

# *Practical issues of WB-MRI for health screening*

- **Synopsis:**
- The Oncologically Relevant Findings Reporting and Data System (ONCO-RADS) proposes a standard protocol for individuals at high risk group. It is designed to promote standardization and limit variations the acquisition, interpretation, and reporting of WB-MRI for cancer screening. The system is designed for guiding clinical care. But is it practical for health screening in general population? Furthermore, we will discuss how to avoid misdiagnosis beyond the protocols (contrast medium, single or multiple reader radiologists, complimentary imaging modalities...etc.).
- **References:**
- G. Petralia et al Oncologically Relevant Findings Reporting and Data System (ONCO-RADS): Guidelines for the Acquisition, Interpretation, and Reporting of Whole-Body MRI for Cancer Screening. Radiology 2021 Jun;299(3):494-507