



## Tetsuaki ARAI

Faculty of Medicine

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### Theme

- Clinical and basic research of dementia
- Clinical study of psychiatric disorders

**Keyword** neuroimaging, neuropathology, dementia, depression, schizophrenia

### Highlight

#### Major Scientific Interests of the Group

The major scientific interest of our group is both biological and psychological aspects of psychiatric disorders, including dementia, depression, schizophrenia, eating disorder, perinatal psychiatric disorders, suicide prevention, and disaster psychiatry. We use the methods such as intervention, radiology, social psychiatry, neuropathology, and molecular biology.

#### Projects for Regular Students in Doctoral or Master's Programs

- 1) Neuropathological and biochemical study of dementia
- 2) Clinical study of mild cognitive impairment in day care facility
- 3) Neuroimaging study of the patients with dementia

and psychiatric disorders

- 4) Clinical study of eating disorders
- 5) Prevention of suicide
- 6) Disaster psychiatry
- 7) Perinatal mental health

#### Study Programs for Short Stay Students (one week – one trimester)

- 1) Clinical study of mild cognitive impairment in day care facility
- 2) Clinico-pathological conference of dementia
- 3) Neuroimaging study

#### Other Faculty Members

Associate Professor : Kiyotaka NEMOTO, Miho OTA

Assistant Professor : Yuki SHIRATORI, Masayuki IDE, Asaki MATSUZAKI, Noriko SODEYAMA, Masashi TAMURA

### Applications and Prospects

- The purpose of our research is to establish AI-powered models enabling early diagnosis of dementia and judgment of intervention effect using daily behavioral features by utilizing industry-academia collaboration and bidirectional translational investigation.

### Literature, intellectual property, work

- Watanabe R, Higashi S, Nonaka T, Oshima K, Niizato K, Akiyama H, Yoshida M, Hasegawa M, Arai T. Intracellular dynamics of Ataxin-2 in the human brains with normal and frontotemporal loba degeneration with TDP-43 inclusions. *Acta Neuropathol Commun* 2020; 8(1): 176
- Yamada Y, Shinkawa K, Kosugi A, Kobayashi M, Takagi H, Nemoto M, Nemoto K, Arai T. Predicting future accident risks of older drivers by speech data from a voice-based dialogue system: a preliminary result. *Advances in the Human Side of Service Engineering, Proceeding of the AHFE 2020 virtual conference on the human side of service engineering, July 16-20, 2020, USA:131-137.*
- Lebowitz A, Tachikawa H, Aiba M, Okamoto Y, Takahashi S, Nemoto K, Arai T. Post-flood social support networks and morbidity in Jōsō City, Japan. *Psychiatry Res* 2019; 271:708-714.