



10<sup>th</sup> World Congress on  
**Alzheimer's Disease & Dementia**

May 30-31, 2018 Osaka, Japan

**Workshop**  
**(Day 1)**

10<sup>th</sup> World Congress on

# ALZHEIMER'S DISEASE & DEMENTIA

May 30-31, 2018 Osaka, Japan



## Kathryn Kirby

*Kyneton District Health Service, Australia*

### Benefits of the Treehouse program at Kyneton District Health

**Background & Aim:** The Treehouse program commenced in April 2017. The aim is to provide a client driven, evidence-based program run in a socially supportive environment for people living in the community with more advanced dementia and other life impacting illnesses. Clients attend a group for 5 hours per-week with specialist nursing staff and volunteers and participate in activities aimed at promoting independence and living well. Client's individual needs, interests and skills are utilized to run the group to ensure that every session is person centered.

**Method:** An evaluation of the impact and success of the program was undertaken in July and September 2017. General feedback was collected by staff on a weekly basis and surveys were conducted with both clients and carers focusing on measuring satisfaction with the program, impact on behaviors of concern (in dementia clients), impact on overall client general health and the impact of the program on carer stress levels and overall carer health.

**Result:** Careers reported a high level of satisfaction with the tree house: 85% rated it as excellent; 15% as very good. A positive change in behavior or mood concerns, they had prior to joining the program. There is an increase in overall happiness of the clients, improved sleep patterns, increased oral intake, improved socialization outside of the program, improvement in overall quality of life for both the client and the carer. 86% of careers reported their own health and wellbeing had improved. 86% believe that attending the program has meant the client has been able to live at home for longer. 100% reported an improvement in the clients' overall quality of life. Staff identified four clients requiring a medical review for either infection or medication review, potentially preventing further deterioration or hospitalization.

**Conclusion:** The Treehouse program provides positive benefits for the carers and improves quality of life and wellbeing for people living at home with dementia or other life-impacting illness. Participants can continue living at home for longer and show improvements in mood, oral intake, sleep patterns and behaviors of concern. Treehouse participation reduces carer stress.

### Biography

Kathryn Kirby is a Registered Nurse with 14 years' experience in the Acute Hospital Setting. Her specialties include medical nursing, palliative care and dementia care, where she has worked in clinical, management and project roles. She has received a Postgraduate qualification in Leadership and Management and Dementia care. In 2014, she was awarded the Hesta Australian Nursing Team Innovation award for the understanding dementia program aimed at educating non-clinical staff and volunteers about dementia and communicating with patients with dementia. Her role as Coordinator at the Treehouse Program has allowed her to utilize her innovative thinking and leadership skills to develop a program that is truly person centered, client driven and unique with proven positive effects for both clients and carers.

[kkirby@kynetonhealth.org.au](mailto:kkirby@kynetonhealth.org.au)

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## Tessa Wilson

*Kyneton District Health Service, Australia*

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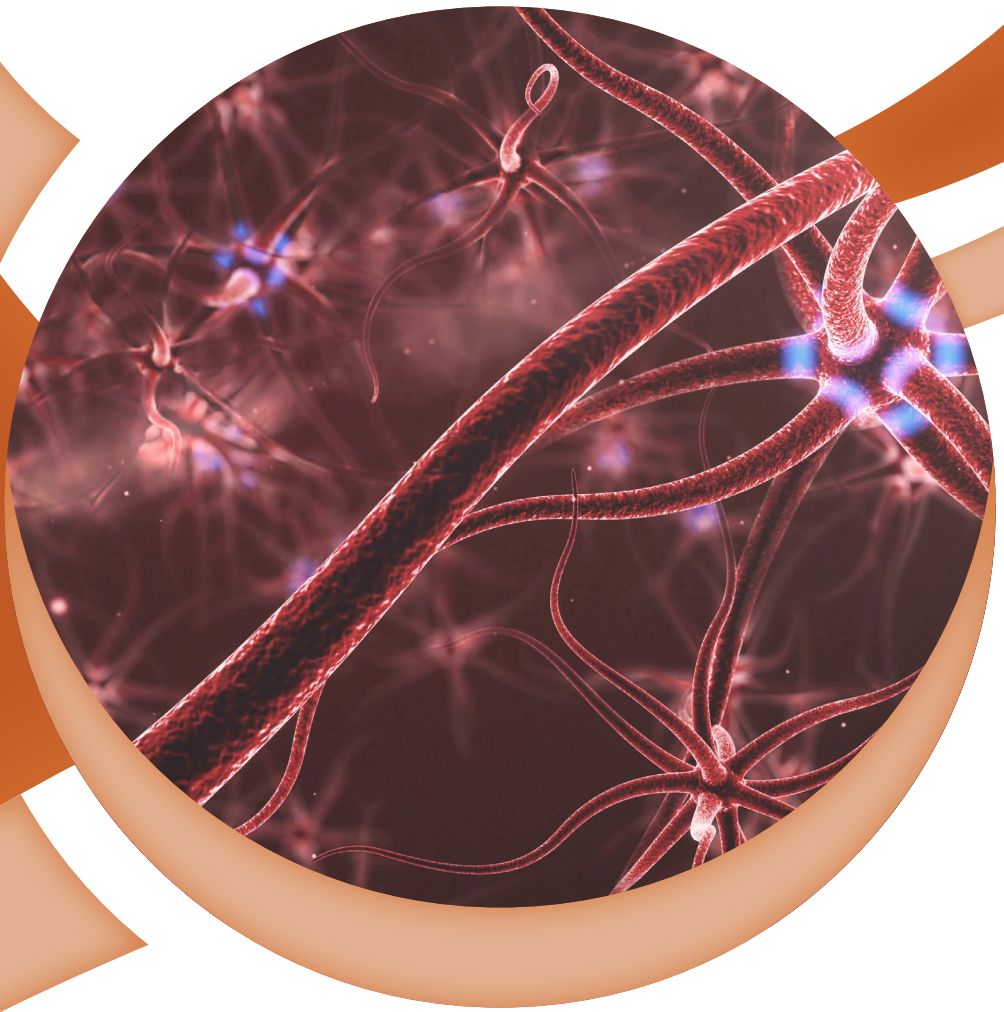
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### Biography

Tessa is a Registered Nurse with 8 years' experience working within the aged care sector providing care to residents and clients living with all stages of dementia. She is passionate about aged care and has a particular focus on dementia care. She is instrumental in creating the program structure and implementation of the Tree house ensuring all participants are meaningfully engaged in each session by providing personalized and flexible program options. She is commencing her Bachelor of Dementia Care in 2018 to continue to expand within her career. Tessa will be focusing on educating people about dementia and how to maintain positive relationships with people living with dementia and developing innovative services in regional areas.

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**Scientific Tracks & Abstracts**  
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## ALZHEIMER'S DISEASE &amp; DEMENTIA

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**Research of efficiency and evaluation of group home care at Dementia Group Home****Kouichi Miyakawa**

Japan Dementia Group Home Association, Japan

Research of efficiency and evaluation of group home care at Dementia Group Home is an interesting research to figure out how group home care can provide improvement of QOL and BPSD for residents with dementia disease. There are 13,000 group homes for residents with dementia disease in Japan. Each group home tries to offer them accommodation and special care for dementia old folks. The concept of group home is living together with care staffs and dementia residents. Through this daily life, residents get personal care and rhythm of life. Residents with dementia disease also support each other.

**Biography**

Kouichi Miyakawa has completed his undergraduate degree in Political Science from Keio University, Japan. He is a certified Care Worker in Japan and is working for Care Company as a Senior Manager. He is one of the Directors at Japan Dementia Group Home Association, Public Interest Incorporated Association.

kouichim@kt.rim.or.jp

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# ALZHEIMER'S DISEASE & DEMENTIA

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## Neurotrophin inhibits neuroinflammation via suppressing NF- $\kappa$ B and MAPKs signaling pathways in lipopolysaccharide-stimulated BV2 cells

Yuqiu Zheng

Sun Yat-sen University, China

Neuroinflammation plays an important role in several neurological diseases, especially in Alzheimer's Disease (AD). Neurotrophin (NTP) is a widely used drug in China and Japan mainly for the treatment of chronic pain and peripheral inflammation and previous studies have indicated that NTP could improve cognitive impairment in APP/PS1 mice by stimulating the production of BDNF and suppressing the oxidative stress. Nevertheless, the effects of NTP on neuroinflammation have not been explored. In this study, we investigated the anti-inflammatory effects of NTP in lipopolysaccharide (LPS)-stimulated BV-2 microglial cells and its underlying mechanisms. BV-2 cells were pretreated with NTP for 12 h before exposure to LPS. The expression of pro-inflammatory cytokines (TNF- $\alpha$  and IL-6) were detected by RT-PCR and EILSA at mRNA and protein levels, respectively. Western blotting was conducted to measure the protein levels of major genes in MAPKs and NF- $\kappa$ B signaling pathways. Results demonstrated that NTP could attenuate the production of pro-inflammatory cytokines. Furthermore, NTP inhibited the activation of NF- $\kappa$ B signaling by decreasing the translocation of NF- $\kappa$ B p65 to the nucleus and suppressed the MAPKs signaling pathway via inhibition of the phosphorylation of p38, ERK and JNK. Taken together, these findings suggest that NTP exerts anti-inflammatory effects by suppressing the production of pro-inflammatory mediators via inhibition of NF- $\kappa$ B and MAPKs signaling pathways in LPS-stimulated BV-2 cells, indicating that NTP might be a potential choice for the treatment of neuroinflammation.

### Biography

Yuqiu Zheng has received her Bachelor's degree in Clinical Medicine from Sun Yat-sen University and presently pursuing her Master's degree in Neurology in Sun-Yat-sen Memorial Hospital, Sun Yat-sen University. She has been investigating the pathologies and therapeutics of Alzheimer's disease, especially novel drug

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## ALZHEIMER'S DISEASE &amp; DEMENTIA

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## Novel therapeutic strategies for alzheimer's disease: Neurotrophin and neurorestoration

Jun Liu

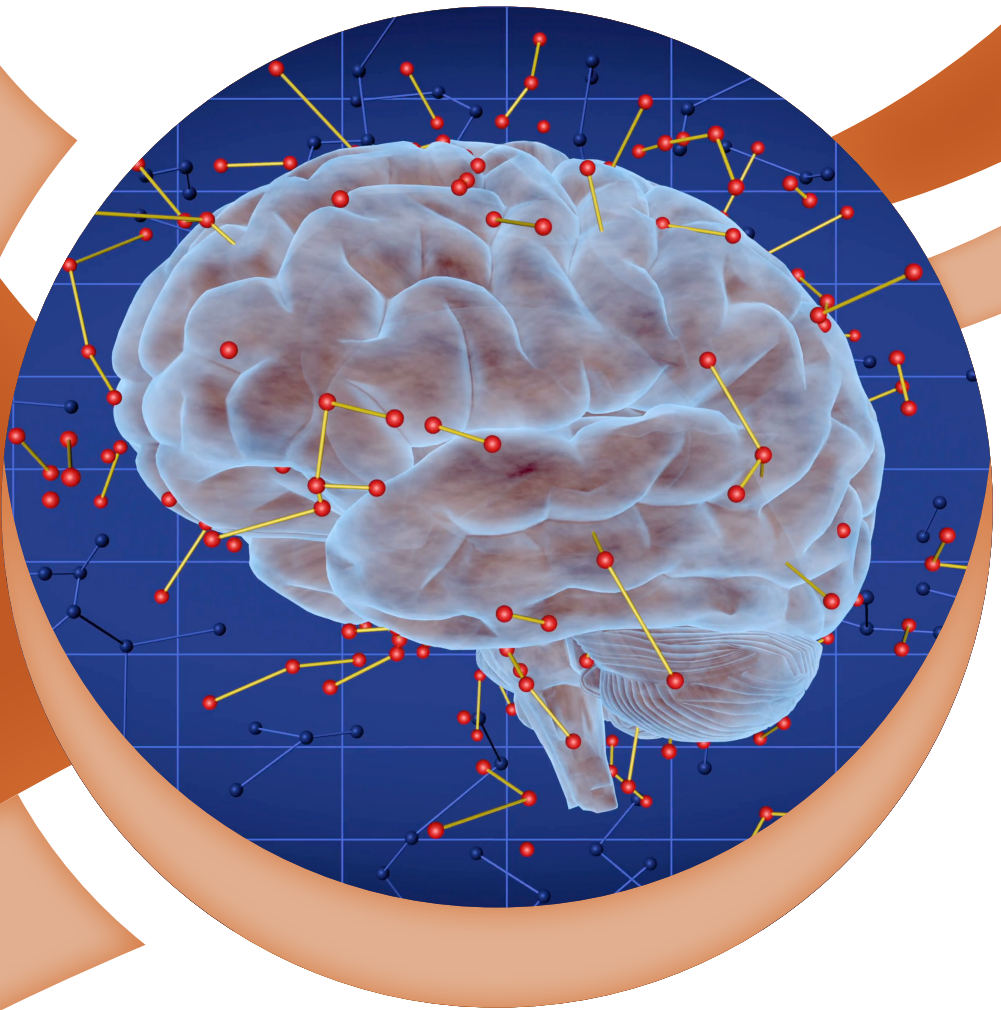
Sun Yat-sen University, China

Alzheimer's Disease (AD) is a neurodegenerative disorder mainly characterized by  $\beta$ -amyloid deposit,  $\tau$ -hyperphosphorylation and neuron loss with no curative treatments. In recent years, the main efforts of multinational pharmaceutical companies have been focused on reducing the aggregation of A $\beta$  and  $\tau$ -proteins but with repeated defeats. According to statistics of Adis R&D, between 1998 and 2014, major pharmaceutical companies launched a total of 123 drugs for AD but only three drugs and one combination therapy program have been approved by the FDA. However, without exception, none of these 123 drugs can cure AD and even delay the progression of the disease. So we should shift our focus from alleviating the AD-like pathologies to neuroprotection, which means the preservation of neuronal structure and/or function. As far as we know, there are some therapeutic strategies of neuroprotection for AD, such as the application of NMDA receptor antagonists, Acetylcholinesterase Inhibitors (ACEIs), anti-inflammatory agents, antioxidants, neurotrophins and Chinese medicine and so on. Our research group has found that neurotrophin (a non-protein bioactive agent extracted from rabbit inflamed skins inoculated with Vaccinia virus vaccine), GQDG (Graphene Quantum Dot Conjugated with neuroprotective peptide-glycine-proline-glutamate), edaravone, EGB761 (*Ginkgo Biloba* extract) and  $\beta$ -sitosterol exerted potent neuroprotective effects in AD. In conclusion, a single cure for AD is unlikely to be found and multi-target therapies should be addressed.

## Biography:

Jun Liu has completed his PhD from Sun Yat-sen University and Postdoctoral studies from University of Kansas Medical School. He is currently the Vice Director of Neurology Department of Sun Yat-sen Memorial Hospital, Sun Yat-sen University. He has been investigating the pathologies and therapeutics of Alzheimer's disease and published more than 22 SCI papers as the corresponding author.

docliujun@hotmail.com



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# **Alzheimer's Disease & Dementia**

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## **Scientific Tracks & Abstracts (Day 2)**



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# ALZHEIMER'S DISEASE & DEMENTIA

May 30-31, 2018 Osaka, Japan

## Neuronal excitability changes produced by alzheimer's related pathology and by its risk factors

Herman Moreno, Luna Buitrago and Sergio Angulo

SUNY Downstate Medical Center, USA

Alzheimer's Disease (AD) is characterized by synaptic dysfunction early in the progression of the disease. It remains unknown the specific neuronal abnormalities produced by AD related pathology (Amyloid and Tau) to the Entorhinal Cortex (EC)-hippocampus circuit, the region targeted earliest by AD. Here, we address this issue by studying mice that express mutated human Amyloid Precursor Protein (hAPP) or mutated human Tau protein (hTau) or both in the EC. This approach allowed us to investigate the two pathologies separately and together additionally we also studied mice expressing the main genetic risk factor for AD (APOE4). Mice (APOE4) were compared to those expressing APOE3. The experiments showed that expression of mutant hAPP in EC (EC-hAPP) produced a significant increase in the duration of spontaneous extracellular field potentials in the superficial layers of both Medial EC and Lateral EC. We also observed that in EC-hAPP mice, pyramidal neurons of the subiculum, which are monosynaptically excited by EC layer III/II neurons, showed miniature excitatory postsynaptic currents having reduced amplitude, suggesting that the increased excitation observed in EC induced a compensatory negative feedback in subicular projection neurons, a process known as synaptic homeostasis. Modeling of the EC-hippocampus microcircuits indicates that EC hyperexcitability and subicular synaptic downscaling of mice expressing hAPP could be explained by EC interneuron pruning. The functional changes produced in EC by the expression of mutant  $\tau$  protein (P301L) manifested as resistance to GABAA antagonist-induced hypersynchrony, but it did not, by itself, produce significant spontaneous activity changes in EC-hippocampus circuits. Mice displaying both pathologies as early as 2.5 months of age had an intermediate and subtler phenotype, predominantly driven by  $\tau$ -pathology. An intriguing finding was the fact that mice expressing APOE4 had a relatively similar phenotype that mice expressing hAPP. This is increased synchronous activity in LEC, but the mechanism of such hypersynchrony is mediated by changes in GABAA receptors abnormalities in the pyramidal cell, and this is observed late in the disease. Our findings demonstrate the significant role of the lateral and medial entorhinal cortices in the early stages of AD where contrasting and complex interactions of APP,  $\tau$  and APOE are observed.

## Biography

Herman Moreno is an Associate Professor of Neurology and Pharmacology/Physiology at SUNY Downstate Medical Center, New York, USA.

herman.moreno@downstate.edu

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**People with dementia who have higher global cognitive scores tend to have higher depression scores**

Ivan Pradhana, Ficky Huang, Edelynce Chelsea and Martina Wiwie

University of Indonesia, Indonesia

It is estimated that 30-50% of People with Dementia (PWD) suffer from significant depression. This fact indicates that for most PWD, depression occurs at the same time as cognitive decline. Research explains that, this happens because PWD cannot run their daily activities independently and they (tend to) forget many essential memories, such as their family. It is also known that the risk of depression is higher for highly educated people. This research was conducted with the intention to find the correlation between depression score and global cognitive score in 42 PWD using the Montgomery-Asberg Depression Rating Scale (MADRS) and the Mini Mental State Examination (MMSE) to assess the symptoms of depression and the global cognitive score, respectively. PWD included in this research were only those who have an MMSE score between 17 and 23 (mild cognitive impairment) and an MADRS score below 34 (no depression, mild depression and moderate depression). Mild depression occurred in 41 out of 42 subjects (97.6%) and the global cognitive score mean was 19.53. Therefore, depression score is strongly correlated to the the global cognitive score ( $r=0.647$ ;  $p<0.001$ ). It is assumed that many PWD are aware of their declining cognitive ability often leading to insecurities because of their condition. Some PWD experienced apathy, loss of appetite and sleep disturbance. Because of these discoveries, it was concluded that PWD who have higher global cognitive scores also have higher depression scores.

**Biography**

Ivan Pradhana is a Medical student in the University of Indonesia, Indonesia. He has collaborated with other researchers and successfully published a conference paper.

pradhanaivan14@gmail.com

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