

# 6<sup>th</sup> World Congress on Neurology and Therapeutics

April 27, 2022 | Webinar

## Accepted Abstracts



6<sup>th</sup> WORLD CONGRESS ON  
**NEUROLOGY AND THERAPEUTICS**

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**Association between widespread pain and Dementia, Alzheimer's disease and Stroke: A cohort study from the Framingham heart study**

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**Objective:** Chronic pain may be an early indicator of cognitive decline, but previous studies have not systematically examined the population-level associations between widespread pain and adverse cognitive outcomes and stroke. This study was designed to determine the association between widespread pain, a common subtype of chronic pain, and subsequent dementia, Alzheimer's disease dementia and stroke.

**Methods:** This retrospective cohort study used data from the US community-based Framingham Heart Study. Pain status was assessed at a single time point between 1990 and 1994. Widespread pain was determined based on the Framingham Heart Study pain homunculus. Dementia follow-up occurred across a median of 10 years (interquartile range, 6-13 years) for persons who were dementia-free at baseline. Proportional hazards models examined associations between widespread pain and incident dementia, Alzheimer's disease dementia and stroke.

**Results:** A total of 347 (14.1%) subjects fulfilled the criteria for widespread pain, whereas 2117 (85.9%) subjects did not. Of 188 cases of incident all-cause dementia, 128 were Alzheimer's disease dementia. In addition, 139 patients suffered a stroke during the follow-up period. After multivariate adjustment including age and sex, widespread pain was associated with 43% increase in all-cause dementia risk (HR: 1.43; 95% CI: 1.06, 1.92), 47% increase in Alzheimer's disease dementia risk (HR: 1.47; 95% CI: 1.13, 2.20) and 29% increase in stroke risk (HR: 1.29; 95% CI: 1.08, 2.54). Comparable results were shown in the subgroup of individuals over 65 years old.

**Conclusion:** widespread pain was associated with an increased incidence of all-cause dementia, Alzheimer's disease dementia and stroke.

**Recent publications**

1. Childhood Secondhand Smoke Exposure and Risk of Dementia, Alzheimer's Disease and Stroke in Adulthood: A Prospective Cohort Study
2. Cardiovascular events and all-cause mortality in surgically or medically treated primary aldosteronism: A Meta-analysis
3. Heightened Cardiovascular Risk in Hypertension Associated With Renin-Independent Aldosteronism Versus Renin-Dependent Aldosteronism: A Collaborative Study

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**Design and validation of virtual reality: Task for Neuro-rehabilitation of Distal upper extremities**

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Stroke, affecting approximately 15 million people worldwide, has long been a global cause of death and disability. Virtual Reality (VR) has shown its potential as an assistive tool for post-stroke rehabilitation. The objective of this pilot study was to define the task-specific performance metrics of VR tasks to assess the performance level of healthy subjects and patients quantitatively and to obtain their feedback for improving the developed framework. A pilot prospective study was designed. We tested the designed VR tasks on forty healthy right-handed subjects to evaluate its potential. Qualitative trajectory plots and three quantitative performance metrics—time taken to complete the task, percentage relative error, and trajectory smoothness—were computed from the recorded data of forty healthy subjects. Two patients with stroke were also enrolled to compare their performance with healthy subjects. Each participant received one VR session of 90 min. No adverse effects were noticed throughout the study. Performance metrics obtained from healthy subjects were used as a reference for patients. Relatively higher values of task completion time and trajectory smoothness and lower values of relative % error was observed for the affected hands w.r.t the unaffected hands of both the patients. For the unaffected hands of both the patients, the performance levels were found objectively closer to that of healthy subjects. A library of VR tasks for wrist and fingers were designed, and task-specific performance metrics were defined in this study. The evaluation of the VR exercises using these performance metrics will help the clinicians to assess the patient's progress quantitatively and to design the rehabilitation framework for a future clinical study.

**Recent publications**

1. Wavelet Based De-noising of EEG Signal Acquired from Tele-serial Addicted Persons
2. A Study on Emission Pattern of Semiconductor ICs Using Photon Emission Microscopy
3. Electromagnetic Field due to a Single Electron Avalanche on Transmission Line Conductors

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