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## Chemo brain and cancer. How cancer patients perform on neuropsychological functions?

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**C**hemo brain, (other terms used Post chemotherapy cognitive impairment (PCCI), cognitive dysfunction, or or chemo fog), is referred to a decrease in neuropsychological performance of neurocognitive measures after chemotherapy for the treatment of cancer. Chemotherapeutic drugs are cytotoxic affecting both normal and cancer cells and contribute to cognitive impairment observed in some individuals following chemotherapy treatment. We investigated the manifestation of cognitive impairment related to chemotherapy, before chemotherapy (T1), immediately after chemotherapy-1 day (T2) and 6 months later (T3), among 187 adult patients with different types of cancer (breast, colorectal, prostate and thyroid cancer). Cognitive functions were assessed, such as attention and working memory, visuospatial perception, executive functions, complex scanning and visual tracking, as well as short and long-term memory using a battery of neuropsychological tests. We had an assessment of emotions, such as anxiety, depression, positive and negative mood to investigate the emotional functioning of cancer patients. Results revealed a statistical significance in performance, immediately and 6 months post-chemotherapy (T3), although no statistically significant differences were found between the groups in any of the neuropsychological test, before chemotherapy. Patients showed lower performance immediately post-chemotherapy (T2) that remained stable 6 months post-chemotherapy (T3), compared to T2 in all cognitive domains ( $p < 0,001$ ). Patients with breast cancer showed significantly lower performance on all cognitive domains compared to other patients. In addition, all patients had a lower performance at T2, which means low emotional functioning with no statistical significant changes. At T3 all patients, had an increased performance with increased emotional functional 6 months post-chemotherapy. Cognitive change that can be detected with repeated testing is essential for an accurate interpretation of neuropsychological performance in studies with cancer patients.

**Keywords:** Brain, Neurocognitive functioning, brain functioning, Neurocognitive performance, cancer patients

### Biography:

Dr. Kalliopi Megari is an experienced psychologist working in the hospital & health care industry. She is a lecturer at University of Western Macedonia in Greece. Skilled in Clinical Neuropsychology, Clinical Research and Learning Disabilities. Graduated from Aristotle University of Thessaloniki and attended further education from University of Macedonia, in people with special needs and disabilities. She holds undergraduate degrees in Nursing and Psychology, as well as a Master's and a PhD in Neuropsychology from Aristotle University of Thessaloniki. She has many years of experience working with chronic disease patients as well with people with disabilities. Her work has earned her many prestigious international awards. She has given lectures at Aristotle University of Thessaloniki and University of Warsaw. She is postdoctoral researcher and has published more than 10 research articles in journals. She is the Global Engagement Representative of International Neuropsychological Society, General Secretary of the board of directors and member of the Ethics Committee of Hellenic Neuropsychological Society.