

**שם:** ניקה סושנסקי

The long-term neurocognitive consequences of SRAS-CoV-2 infection: A Prospective **שם העבודה:**  
cohort study among Israeli adults

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### **ABSTRACT**

**Background:** Dementia is a devastating and prevalent condition with no effective treatment. Several risk factors for dementia have been identified, among them viral infection is thought to play a role in dementia pathogenesis. Since the covid-19 outbreak, evidence emerges demonstrating neurological and psychiatric symptoms as a result of SRAS-CoV-2 infection including headaches, loss of sense of smell and taste, seizures, strokes, sleep disturbances and encephalopathy, as well as cognitive decline.

**Aims:** We aim to assess the relationship between SARS-CoV-2 infection and cognitive function and its change over time. We will also examine whether infection with the virus is related to additional neuropsychiatric and functional outcomes and whether these outcomes mediate the association between SARS-CoV-2 infection and cognition. We will further test whether sex, genetic predisposition to dementia and ethnic group interacts with SRAS-CoV-2 infection status with regard to cognitive function consequences.

**Methods:** In this prospective cohort study we will recruit a randomized sample of 150 participants with a history of positive SARS-CoV-2 PCR result aged 60 years and older and a comparison group of 50 men and women with negative PCR results matched by age range, sex, and ethnicity. Data will be obtained from the Israeli Ministry of Health, the Haifa district. Eligible participants will be examined at baseline and after three years at the neurocognitive clinic, the Rambam Healthcare campus. Data collection will include demographic measures and medical history. Participants will undergo a comprehensive cognitive assessment and blood will be drawn for biological and genetic markers. This study is independent but will also be part of an international collaboration supported by the World Health Organization and the Alzheimer's Association.

**Significance:** This study will deepen our understanding of the long-term consequences of covid-19 on brain aging in older ages. The Covid-19 virus outbreak is also an opportunity to gain insight into the underlying mechanisms of dementia pathophysiology, particularly the possible involvement of viral infection and inflammation. Lastly, findings from this study may provide a basis for health recommendations, policy decisions, and intervention plans to slow brain aging in older ages.