Welcome to our research, *Post-Retirement Careers That Protect the Aging Mind*. My names is Owen from Team GraDescent.  
Canada’s rapidly aging population faces rising risks of cognitive decline. Our study asks: **Do post-retirement jobs help preserve cognitive health, and if so, which careers offer the strongest protection for memory and mental function?**

**Methods**

We analyzed data from the Health and Retirement Study, covering adults over 50 from 1992 to 2022.  
Our final sample included over **91,000 observations from nearly 20,000 individuals**.  
We focused on two cognitive outcomes: **recall (memory)** and **mental status** scores.  
To capture changes over time, we used a **Generalized Estimating Equations (GEE) log-linear model**.  
**Why GEE?**  
GEE is robust for longitudinal data, accounting for repeated measures within individuals and providing reliable, population-averaged estimates even when data is missing or unevenly spaced.

**Recall Index Results**

So, what did we find?

* **All post-retirement jobs provided some memory benefit compared to full retirement.**
* The **strongest memory performance** was seen in:
  + **STEM/professional/technical roles**: recall scores were **7% higher** than the retired group
  + **Sales**: recall scores were **6% higher**
  + **Management/clerical/business**: **5% higher**
* Notably, **sales roles had the slowest annual memory decline** among all groups.
* **High-risk occupations** (like protective services) also showed a **5% higher** recall score (ratio 1.011) and the **largest variation** in memory outcomes.
* In contrast, **manual trades** (ratio 0.991) and **farming/forestry/fishing** (ratio 0.999) showed **little to no memory benefit**.

These patterns suggest that jobs demanding **learning, problem-solving, and social interaction**—like STEM, sales, and management—may help preserve memory as we age. In contrast, more repetitive or isolated jobs, such as manual labor or farming, offer less cognitive protection.

*Max will now discuss our findings on mental status outcomes.*

Max: Mental Status Results & Key Takeaways

**Mental Status Results**

* Service-related jobs, such as food service and personal care, were linked to significantly lower mental health scores.
* Seniors in professional or managerial roles tended to have better mental health outcomes, likely due to ongoing cognitive engagement and greater access to social resources.
* The mental status score, which assesses orientation, attention, memory, and reasoning, is a comprehensive measure of cognitive health in older adults[4](https://www.merckmanuals.com/professional/neurologic-disorders/neurologic-examination/how-to-assess-mental-status)[5](https://www.physio-pedia.com/Mini-Mental_State_Examination)[6](https://www.merckmanuals.com/en-ca/professional/multimedia/table/examination-of-mental-status).

**Key Takeaways (Mental Status)**

* Service-sector jobs are associated with poorer mental health outcomes compared to management roles.
* Professional and managerial work may help preserve not just memory, but overall mental well-being in retirement.
* The type and quality of post-retirement employment matter for healthy cognitive aging.

Closing

* In summary, our findings highlight the importance of cognitively and socially engaging work after retirement for protecting both memory and mental health.
* Policies and programs that encourage older adults to pursue such roles could help promote cognitive resilience and reduce long-term care needs.
* Thank you for your attention。