



PRESENTER:

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# The role of IFN- $\gamma$ -producing senescent T cells in the social functioning of older adults



## BACKGROUND

- **Interferon- $\gamma$  (IFN- $\gamma$ )** is a cytokine that increases as part of normal aging
  - Promotes **pro-social behavior** in mice
  - Related to more sociability in humans
- IFN- $\gamma$  is primarily **produced by senescent T cells** in older adults
  - Higher percentages of senescent T cells are usually disadvantageous
    - BUT may be advantageous in facilitating sociability in older age as increase in senescent T cells suggests an increase in IFN- $\gamma$  production

**OBJECTIVE:** Test if higher percentages of senescent T cells, suggestive of greater production of IFN- $\gamma$ , correlates with sociability in aging adults.

## METHODS

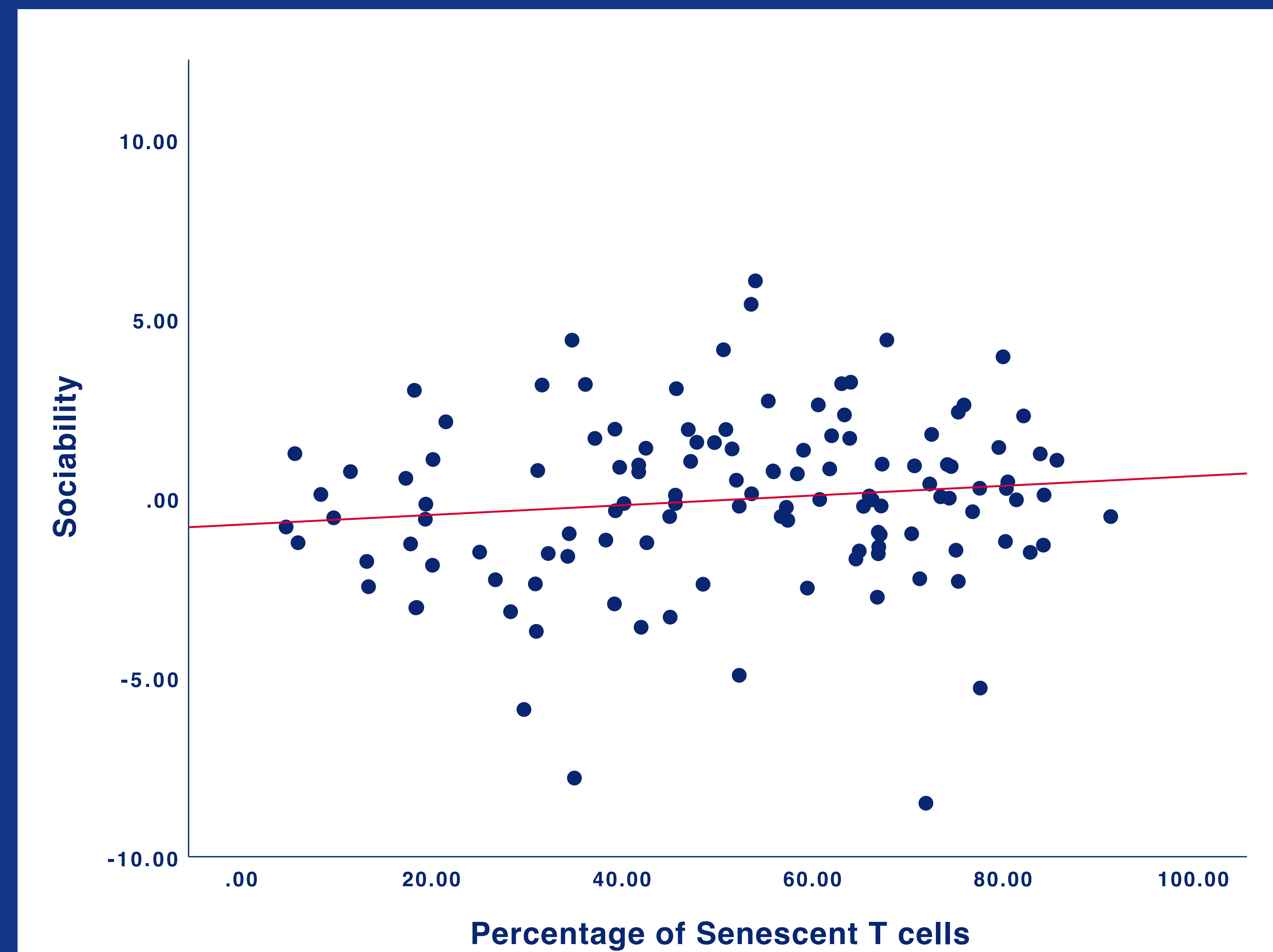
- **N = 123** – drawn from ongoing, longitudinal observational study of healthy older adults
- **Senescent T cells** identified as **CD3+** cells with **CD8+CD28-** and **CD8+CD57+** markers
- **Sociability** calculated as *sum of standardized network diversity and network size*, and *social resources scale score* from the Conservation of Resources Evaluation.
- **Cross-sectional** design

## RESULTS

Frequentist Models			
Unadjusted	$\beta$	SE	Adjusted R <sup>2</sup>
Sen. T cell %	.115	.01	.0005
Adjusted	$\beta$	SE	$r_{\text{partial}}$
Sen. T cell %	0.089	0.013	0.071
age	-0.005	0.042	-0.005
sex	0.066	0.45	0.065
race	-0.078	0.34	-0.078
CMV status	0.046	0.614	0.036

Bayesian Adjusted Model			
Unadjusted	Posterior Mean	Variance	Bayes Factor
Sen. T cell %	0.013	0.000	<b>0.185</b>
Adjusted	Posterior Mean	Variance	Bayes Factor
Sen. T cell %	0.010	0.000	<b>0.000</b>
age	-0.002	0.002	
sex	0.314	0.206	
race	-0.286	0.118	
CMV status	0.240	0.383	

# Sociability was *not* associated with T cell senescence in older adults.



**BAYES FACTOR:** ratio of likelihood of one hypothesis to the likelihood of another

## THIS STUDY:

- **Bayes Factor = .185** the null hypothesis is **5x more likely**
- **Bayes Factor = .000**, the null hypothesis is **>100x more likely**

	Descriptives	
	Mean	SD
Sen. T cell %	51.49%	21.87%
age	79.1 years	5.29 years
sex	56.4% female	
race	94.3% Caucasian	
CMV status	68% seropositive	

	Bivariate Correlations					
	Sociability	Sen. T cell %	age	sex	race	CMV status
Sociability	-	0.125	-0.006	0.085	-0.079	0.093
Sen. T cell %		-	0.071	-0.065	-0.035	<b>0.600</b>
age			-	<b>-0.194</b>	-0.082	0.079
sex				-	0.102	0.056
race					-	0.078
CMV status						-

Note. Sen. T cell % = Percentage of participant CD3+ T cells identified as CD8+CD28- and CD8+CD57+; CMV Status = CMV serostatus, coded as 1 = positive, 0 = negative.

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