

Brain

Plasma/Serum Lycopene and Disease Risk

This section critically evaluates the relationship between plasma/ serum lycopene concentrations and cognitive function.

Main findings

- Data suggest declines in cognitive function with lower plasma lycopene concentrations.
- Area of potential research with increasing evidence supporting oxidative-inflammation relationship with cognitive impairment (in vitro and in vivo animal).
- Prospectively designed clinical trials are warranted.

Summary of studies and outcomes

- Number of studies = 8
- Risk estimates (RE) = 8
 - (-) = 7
 - N = 1
 - (+) = 0
- Risk estimates by Tomato or Lycopene category
 - $\sqrt{\text{GT G. Tom}}$ =
 - $\sqrt{\text{PT P. Tom}}$ =
 - $\sqrt{\text{FT F. Tom}}$ =
 - $\sqrt{\text{Lyco Lyco}}$ = 7 (-), 1 (N)

Table: Relationship between plasma/serum Lycopene and Brain Health

Study Type	N= studies	NEGATIVE ASSOCIATION (protective)					NEUTRAL ASSOCIATION (no associated risk or benefit)					POSTIVE ASSOCIATION (risk factor)				
		Sample size, n=					Sample size, n=					Sample size, n=				
Brain		≤100	101-200	201-500	501-1000	≥1000	≤100	101-200	201-500	501-1000	≥1000	≤100	101-200	201-500	501-1000	≥1000
RCT	0															
Interv	0															
PC	0															
CC	5		$\sqrt{\text{Lyc}}$ $\sqrt{\text{Lyc}}$ $\sqrt{\text{Lyc}}$ $\sqrt{\text{Lyc}}$ $\sqrt{\text{Lyc}}$													
Cross Sec	3		$\sqrt{\text{Lyc}}$		$\sqrt{\text{Lyc}}$						$\sqrt{\text{Lyc}}$					
Eco	0															

$\sqrt{\text{Lyc}}$ – Represents plasma/serum lycopene.