

## AIM

- To investigate whether the hippocampus plays a role in navigational experience
- To investigate whether the healthy human brain can undergo structural changes in response to extensive navigational experience

## METHOD - design

- Natural experiment
- Independent measures design

## METHOD - IV

- Whether the person was a taxi driver or not

## METHOD - DV

- Volume of the hippocampus (anterior, posterior, body sections)
- A correlation was also conducted on taxi drivers between the amount of time as a taxi driver and the hippocampal volume

## METHOD - Participants

- Taxi drivers - 16, right handed, male, healthy, around 44 years old, average of 14.3 years as a taxi driver
- Controls - matched for health, handedness, sex average age range

## PROCEDURE

Structural MRI to see the hippocampus structure.

## RESULTS

- VBM results - Taxi drivers had increased grey matter in the right and left **posterior** hippocampus compared to controls
- Pixel counting - taxi drivers had a larger **posterior** hippocampus while the controls had a larger **anterior** hippocampus
- Correlations - A significant correlation was found between the time as a taxi driver and right posterior hippocampus volume (but negative one for the right anterior section)

## DISCUSSION

- Correlations indicate -
- Human spatial representations are stored in the posterior hippocampus
- Structural rearrangement in taxi drivers reflects the amount of navigational activity
- The healthy human brain can change structure in response to navigational ability
- Study doesn't show how these brain changes occur



By **Scubaani**  
[cheatography.com/scubaani/](https://cheatography.com/scubaani/)

Not published yet.  
Last updated 9th May, 2017.  
Page 1 of 1.

Sponsored by **Readability-Score.com**  
Measure your website readability!  
<https://readability-score.com>