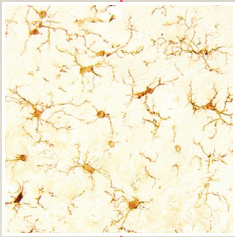


## Links between microglia and cognition

### Microglial hyper-activation or priming

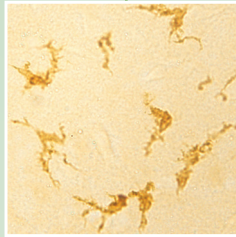
(as occurs with aging or high-fat diet)



**Cognition impaired**

### Microglial activation

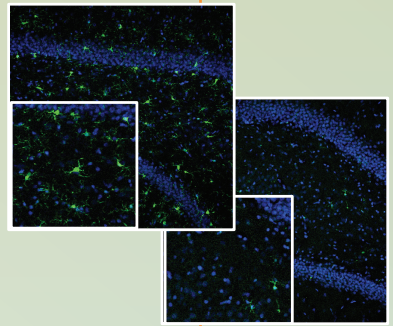
(as occurs with a learning stimulus or repopulation after ablation)



**Cognition enhanced**

### Suppression of microglial activity

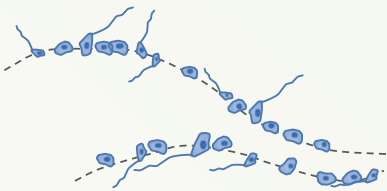
(as occurs with pharmacological or genetic models)



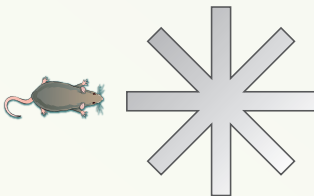
**Cognition unaffected**

## Suggested mechanisms for microglial regulation of cognition

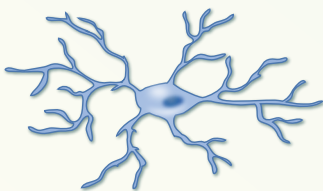
### Basal turnover of new neurons



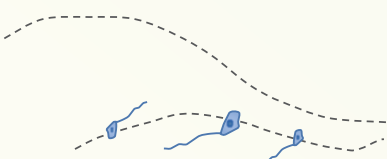
### Learning stimulus



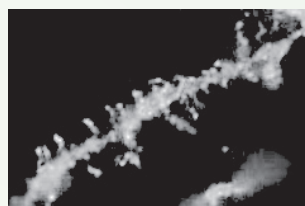
### Microglial activity



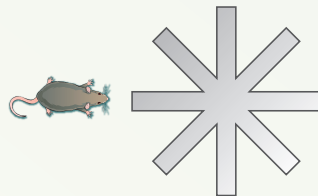
### Survival of "mature" new neurons



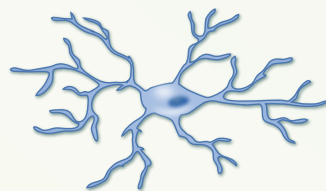
### Unstimulated dendritic spines



### Learning stimulus



### Microglial activity



### Strategic remodeling of dendritic spines

