



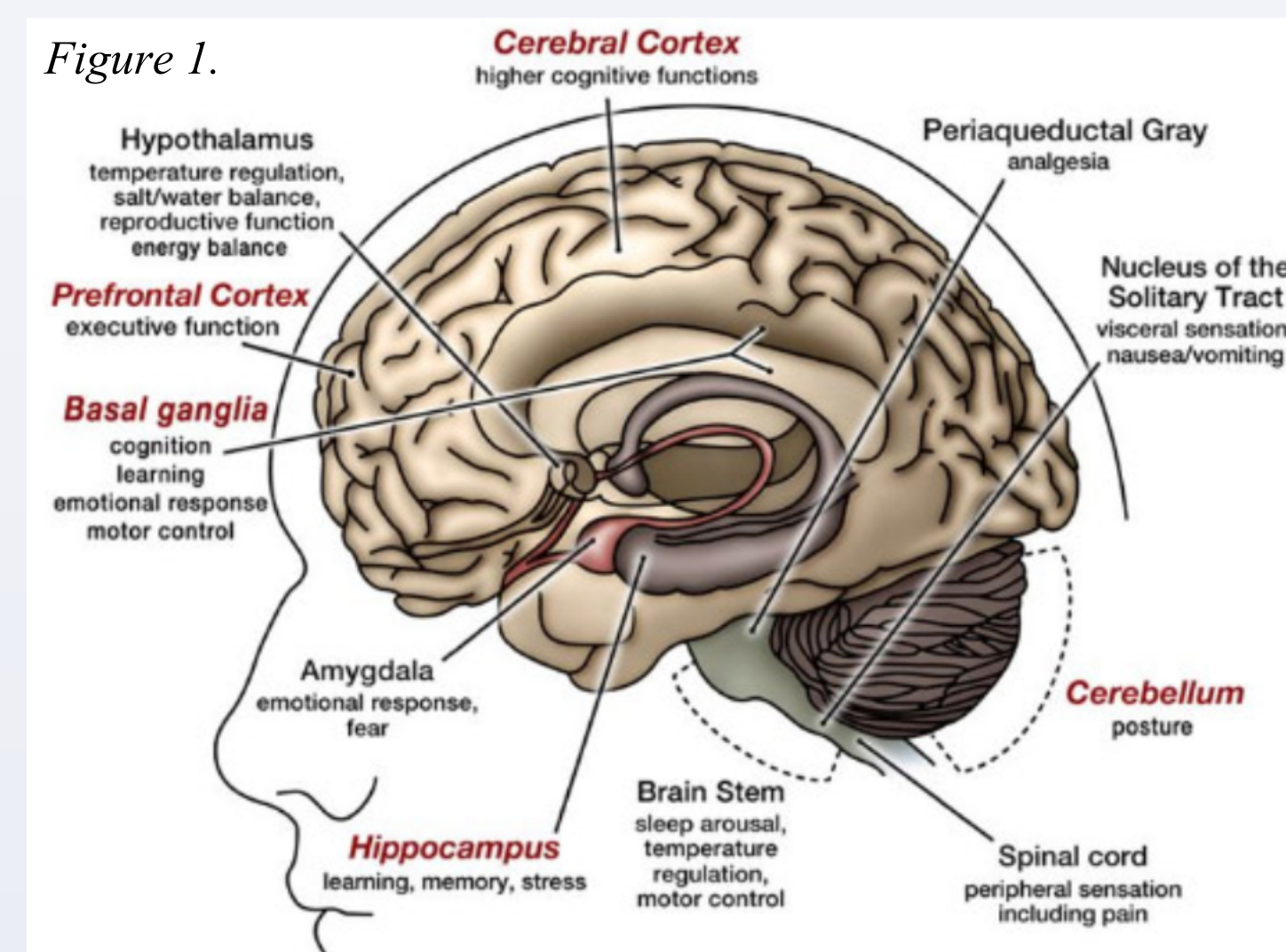
# Anandamide: The “Bliss” Molecule

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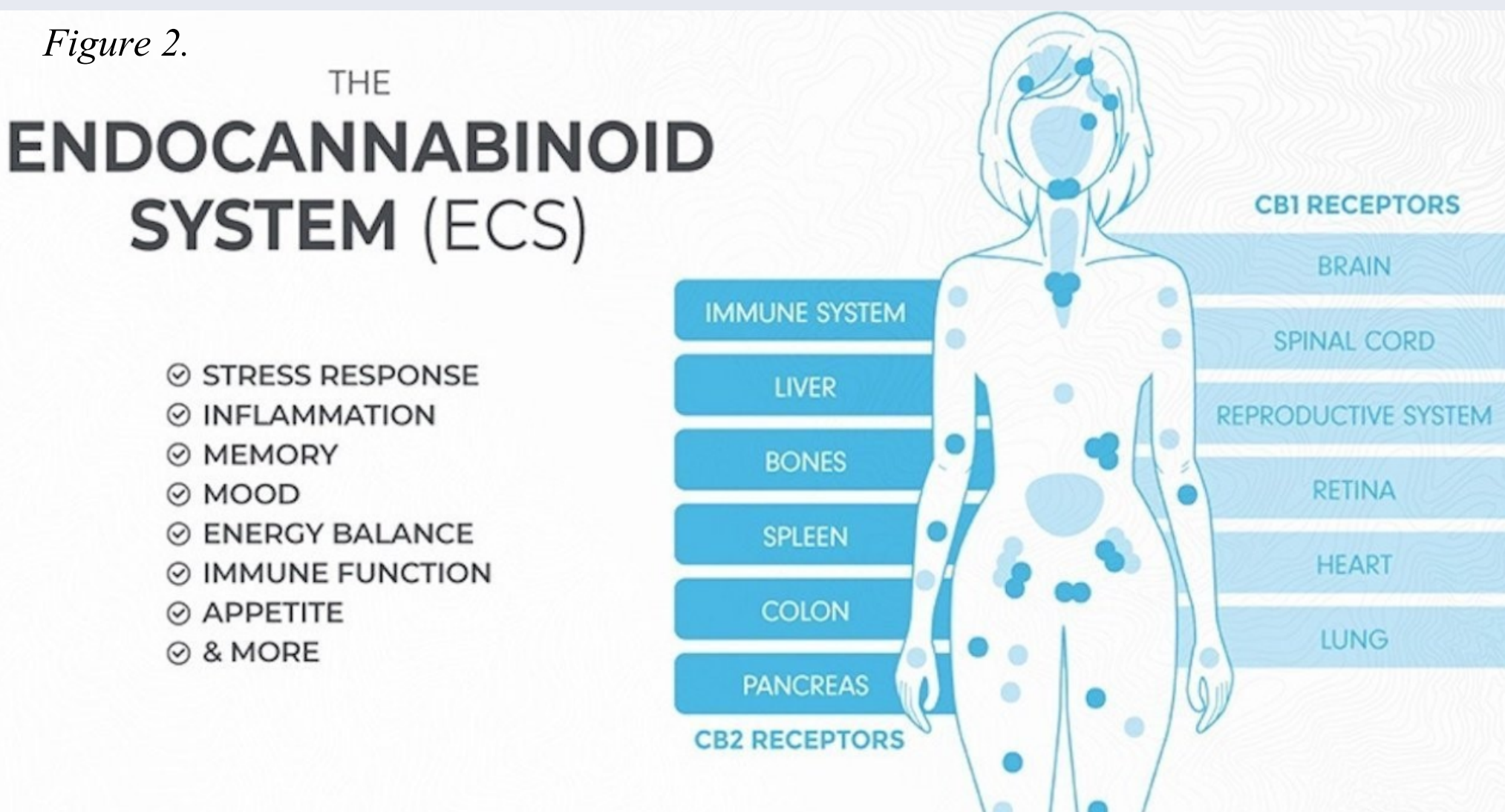


## Foundation: The ECS

- The Endocannabinoid System was found in the 1990s, 25 years after research on THC.



- ECS interacts with HPA-axis to maintain balance.

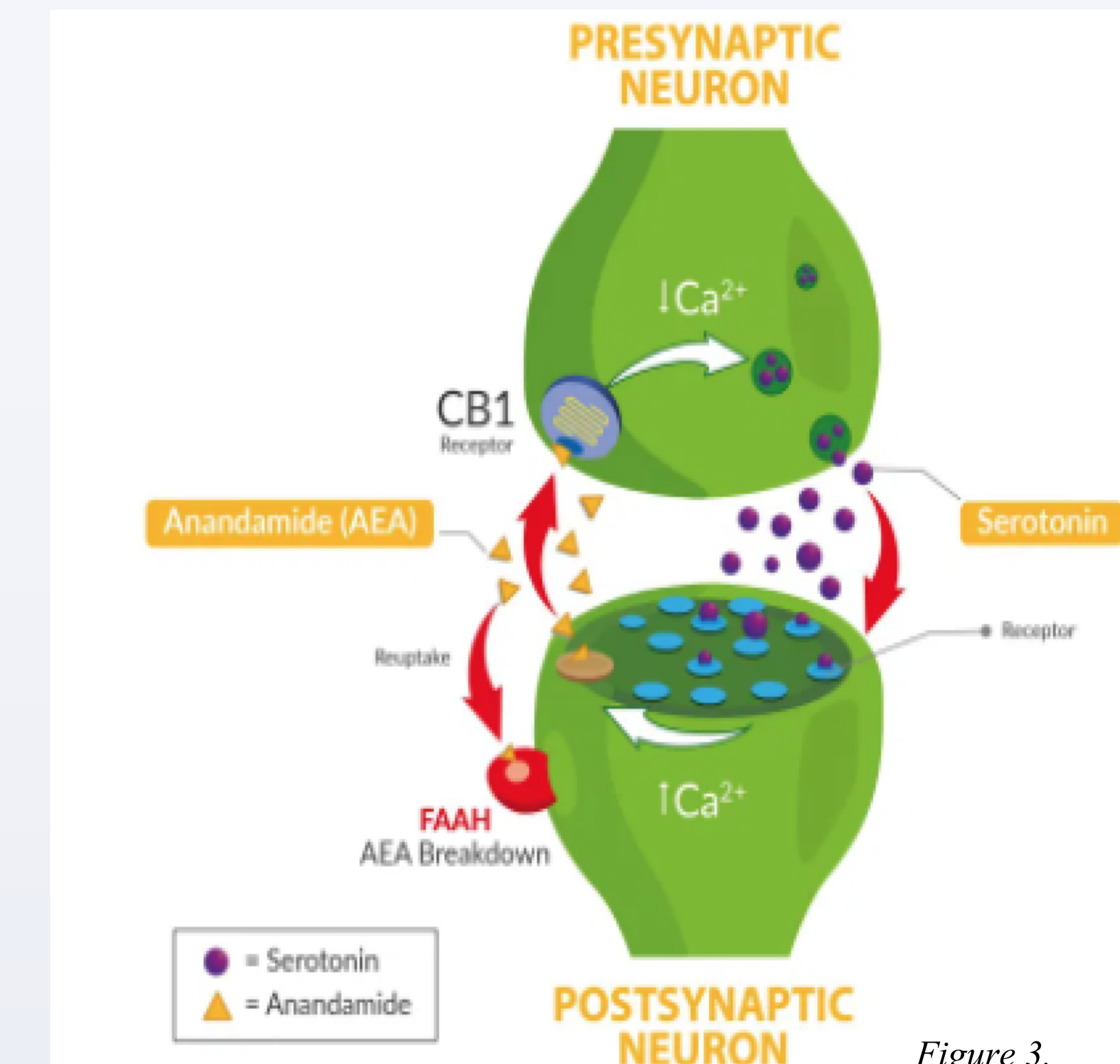


## THC & AEA

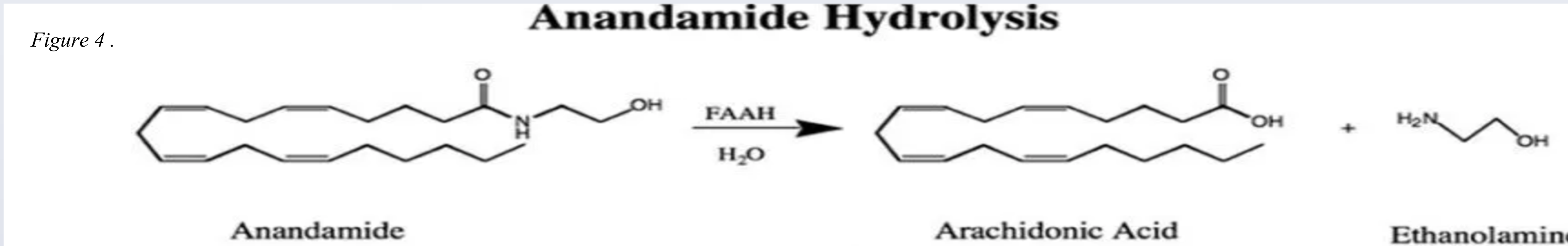
- THC, binds to specific G-protein receptor (Mechoulam, 1964).
- Researchers theorized we must have our own ligand that fits perfectly into that receptor.
- In 1992, **Anandamide (AEA)** was found by its unique size and shape.
- The more AEA present in the system, the larger the effect (Devane, 1992).
- Rat brain activity after AEA or THC both demonstrated lower anxiety (Smith, 1994).

## How does AEA work?

- AEA mostly regulates the body through retrograde signaling (Freund, 2003).
- The production of AEA is ‘on demand’ synthesizing immediately whenever required.
- AEA activates the CB1 receptor in the brain to influence production of serotonin and dopamine.
- Fatty Acid Amide Hydrolase (FAAH) quickly breaks down AEA (Boger, 1999).

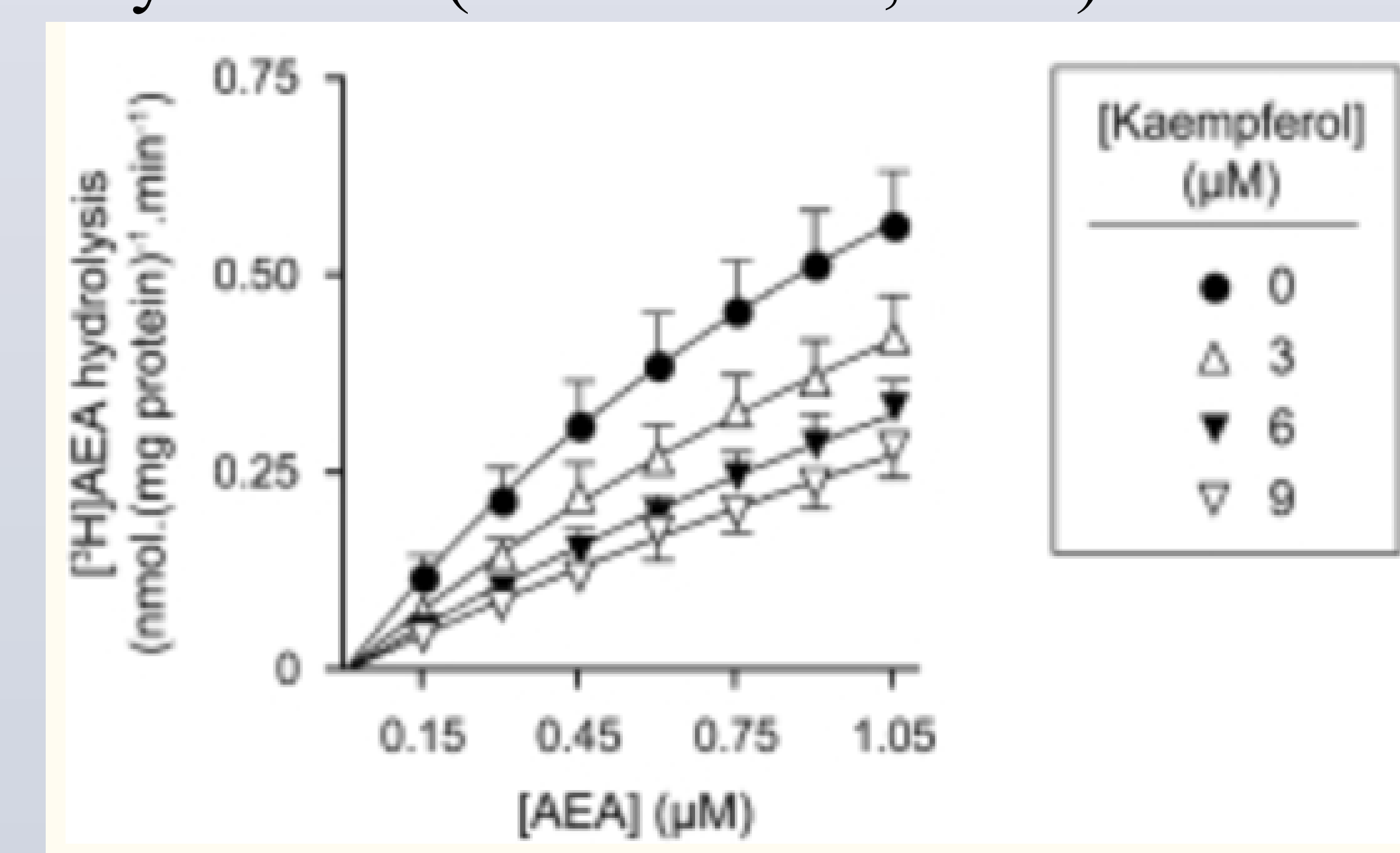


## How can we keep AEA in our



- Research focus should be on exposure to molecules that can increase production of AEA or increase sensitivity to them (Shimon et al., 1998).
- 1. Inhibit FAAH
- 2. Slow down the re-uptake of AEA

Figure 5. As Kaempferol concentration increases, less AEA is hydrolyzed in the same amount of time.



## Eat your Fruits and Veggies: Kaempferol & other Flavonoids

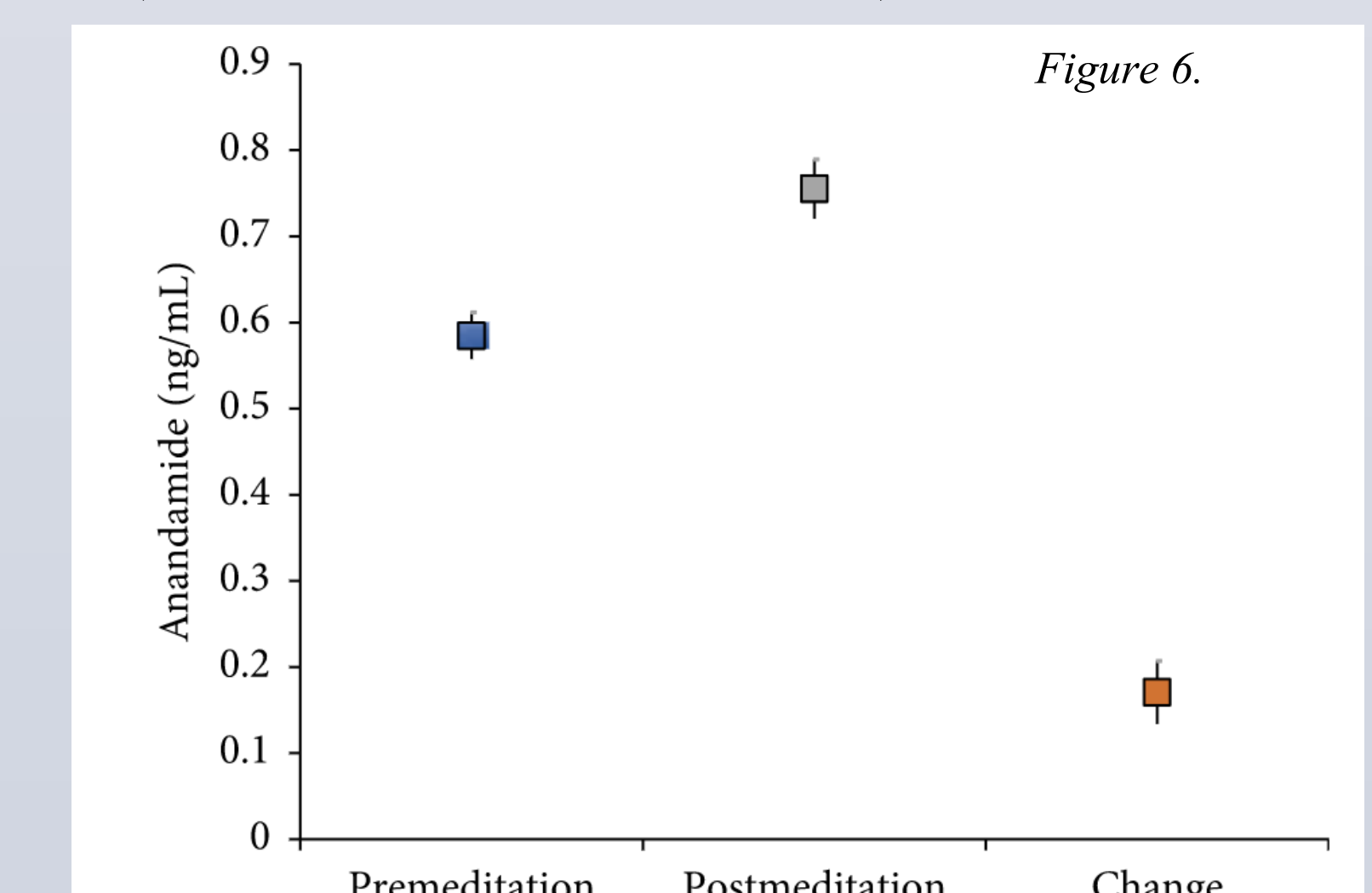
- Flavonoids, found in common foods such as Kale, Broccoli, and Blueberries have been linked as preventative measures for diseases such as cancer and stroke (Keli, 1996).
- Thors et al. conducted a study where 20 compounds were tested including Kaempferol and other Flavonoids, measuring time taken to hydrolyze AEA within intact cells (2008).

## Try a supplement: Maca, Cacao

- Maca, a Peruvian plant is a widely touted dietary supplement.
- Maca contains several strains of Macamide, which bear a structural similarity to AEA.
- Contemporary research has tested out several strains of Macamide and found many to be FAAH inhibitors (Wu et al., 2013).
- Researchers identified N-acylethanolamines in Cacao as chemically similar to AEA and to have similar observed effects (Tomaso, 1996).

## Meditation

- Participants were assessed pre- and post-meditation retreat with an array of mental health measures and a blood test.
- Blood indicated significantly higher AEA and BDNF (Sadhasivam, 2020).



## Future Research

- AEA, BDNF and neuroplasticity
- Connecting neurochemical findings to gross anatomical pathways