


# Methylation, mood and the depression link

Approximately  
**43%**  
of Australians have experienced a **mental health disorder in their lifetime**




**1 in 5 Australian males** and **1 in 4 females** suffered from a **mental health disorder**

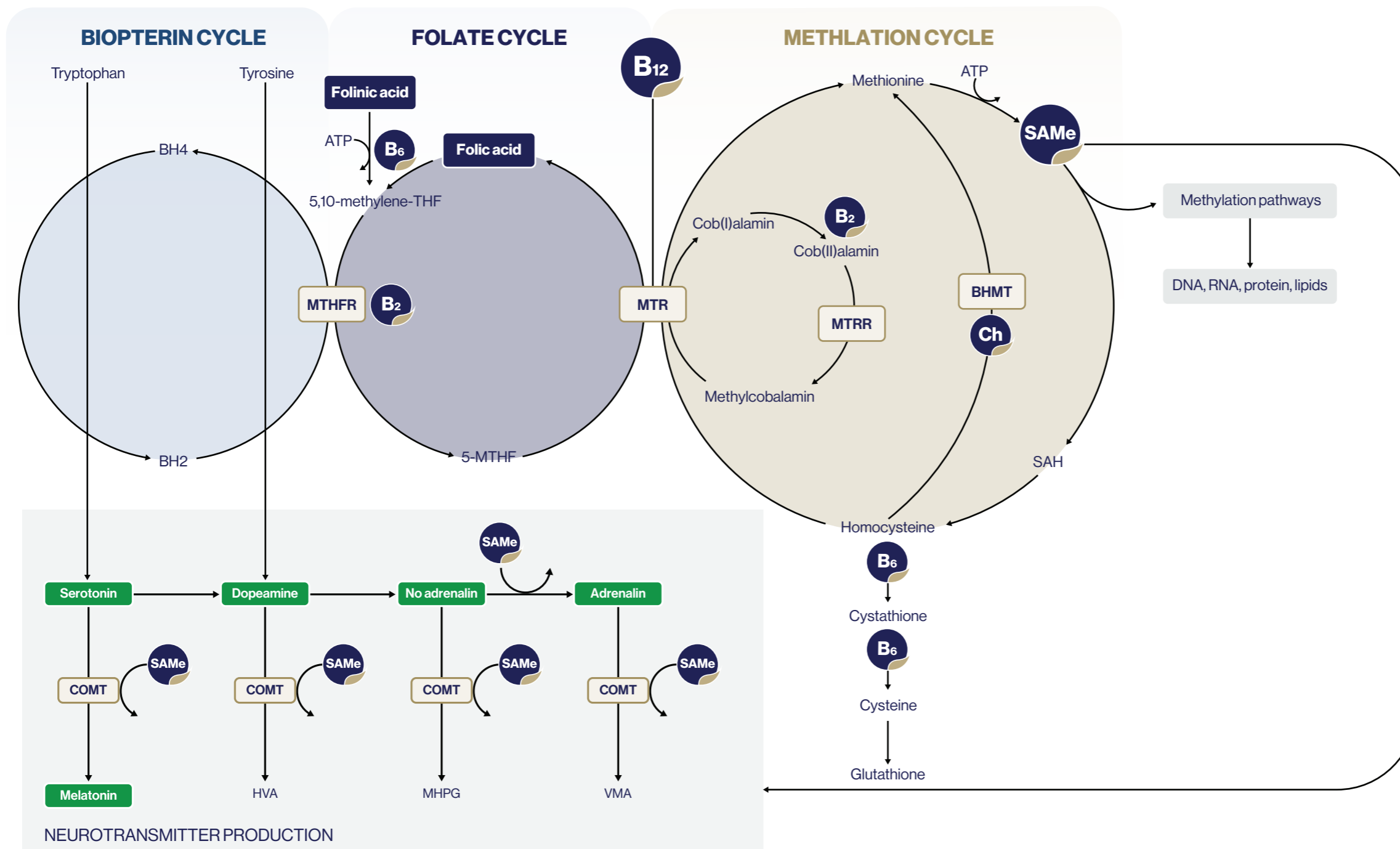


**METHYLATION** supports neurotransmitter synthesis and regulates gene expression, **POTENTIALLY INFLUENCING MENTAL HEALTH**<sup>1</sup>

**METHYLATION** Methylation and mood are **significantly impacted** by nutrient deficiencies such as **B6, B12, folate, and choline**<sup>3</sup>



## The role of nutrients in methylation<sup>2-10</sup>



### Nutritional support for depression

**SAMe (s-adenosylmethionine)**  
Provides methyl groups essential for neurotransmitter production like serotonin and dopamine, essential for mood regulation. It supports gene expression related to emotional stability and cognitive health.<sup>5,9,10</sup>

**Ch Choline**  
Supports brain health by aiding in neurotransmitter synthesis and regulating homocysteine, associated with cognitive impairment.<sup>5,8</sup>

**B12 Vitamin B12 (Cobalamin)**  
With folate, B12 is required to regenerate methionine from homocysteine in the methylation cycle to produce SAMe. B12 is crucial for the synthesis of neurotransmitters impacting mood and cognitive function.<sup>5,7</sup>

**B2 Riboflavin (Vitamin B2)**  
Riboflavin is responsible for the conversion of folate into its active form (5-MTHF) helping maintain neurotransmitter production and gene expression.<sup>5,8</sup>

**Methionine**  
Amino acid and direct precursor to SAMe, essential for mood regulation and cognitive function.<sup>5</sup>

**B6 Vitamin B6 (Pyridoxine)**  
B6 helps convert homocysteine back into cysteine during methylation, reducing neurotoxic effects and supporting neurotransmitter balance.<sup>6,7</sup>

**KEY<sup>5</sup>**  
ATP - adenosine triphosphate  
SAH - S-adenosyl homocysteine  
SAMe - S-adenosyl methionine

**Essential nutrient**

**Neurotransmitter**