

Early Morning May Not Be the Best Time of the Day to Study: Hypothesis

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Abstract

Since childhood we have been advised by the to study or revise the assignments early morning. But the recent studies indicate that level of stress hormones is highest at the time of wakening. Stress hormones affect memory negatively. As the cortisol level is the highest in the morning just after awakening (in day workers) and because the excess of cortisol can impair the ability of the hippocampus to both encode and recall memories, thus it is hypothesised that morning time may not be the best time to study and revise assignments..

Keywords: Stress Hormones; Cortisol; Memory; Study Assignments.

Introduction

Since childhood we have been advised by the to study or revise the assignments early morning. But the recent studies indicate that level of stress hormones is highest at the time of wakening. Stress hormones affect memory negatively. In particular, the hippocampus, prefrontal cortex and the amygdala [1][2].

One class of stress hormone responsible for negatively affecting memory is the glucocorticoids (GCs), the most notable of which is cortisol [3][4][5]. Glucocorticoids facilitate and impair the actions of stress in the brain memory process[6]. Cortisol is a known biomarker for stress[7].

Under normal circumstances, the hippocampus regulates the production of cortisol through negative feedback because it has many receptors that are sensitive to these stress hormones. However, an excess of cortisol can impair the ability of the hippocampus to both encode and recall memories[4]. These stress hormones are also hindering the hippocampus from receiving enough energy by diverting glucose levels to surrounding muscle[4].

Hypothesis

As the cortisol level is the highest in the morning

just after awakening (in day workers) and because the excess of cortisol can impair the ability of the hippocampus to both encode and recall memories, thus it is hypothesised that morning time may not be the best time to study and revise assignments.

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