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Study finds meditators' brains appear 'surprisingly alert'

By Anna Salleh for ABC Science Online

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People who meditate show signs they are surprisingly alert, the first study of its kind has found.



The findings support the idea that meditation is a unique state. (AAP: Yonhap 2004)

Australian PhD researcher Dylan DeLosAngeles, at the Flinders Medical Centre in Adelaide, shows that mediation produces changes in brainwaves usually associated with increased alertness.

He will present his findings at the IBRO World Congress of Neuroscience in Melbourne later this month.

"There are a lot of subjective reports of meditation benefiting subjects on a personal level," Mr DeLosAngeles said.

"I wanted to try and quantify some of that and look at how that was changing the brain on a neurophysiological level."

Mr DeLosAngeles says previous research on mediation and the brain has produced conflicting evidence about its impact on the brain, with some studies even reporting that meditators were asleep.

In preparatory research for his PhD, he studied a type of Buddhist mediation that teaches people to achieve several distinct states.

He asked 13 people in a meditation group to describe their experiences of five different states, both before and after the study.

"We found common experiences in each person," he said.

He says in the first meditative state, people focused their thoughts on breathing, and in the second state they stopped thinking and just breathed.

In the third state, they felt a loss of body boundaries and spatial orientation, and in the fourth state they felt their mind and breath became one.

In the fifth state, the meditators felt their mind expand into space.

Brain activity measured

Mr DeLosAngeles then measured brain activity in each state using an electroencephalograph.

"We were able to correlate the changes in certain brainwaves against the changes in subjective experience," he said.

He found that compared to the baseline condition - eyes closed and resting - people had distinct changes in brainwaves with each meditative state.

Also that the brains of people in the first state showed an increase in the amplitude of alpha brainwaves, which are associated with alertness, focus, attention and concentration.

Mr DeLosAngeles says there was also a decrease in delta brainwaves, ones associated with drowsiness or sleep.

He says as mediators progressed through the other four stages of mediation, their alpha brainwaves slowly decreased in a linear fashion.

He thinks this decrease is because the mind is already very alert and focused and does not have to try so hard to stay that way.

As mediators progressed into the last four states of meditation, their delta brainwaves also decreased.

A unique state

He says the findings support the idea that meditation is a unique state.

"Meditation is a finely held state of attentiveness and alertness that differs from eyes-closed resting or sleep," he said.

He says the findings add weight to the idea that meditation could be used to help people improve their ability to concentrate.

Mr DeLosAngeles will now use his PhD scholarship from the South Australian Department of Health to investigate this idea.

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