Journal of NEUROLOGY, NEUROSURGERY & PSYCHIATRY with Practical Neurology

BMJ | Journals

Information for patients from JNNP

Understanding the causes of ongoing brain injury

Introduction

It's not always easy to tell why some people continue to have health problems many months after a traumatic brain injury, while other people recover completely. This review looked at some of the reasons why, and how good the studies have been that have looked into this.

What do we know already?

Most people who suffer a mild traumatic brain injury, which are often called concussions, recover fully within three months. Most people who have concussions don't have any health problems in the long term.
But some people continue to have health problems many months after their concussion. It's not always easy to tell if their health problems are caused by the brain injury, or for other reasons. For example, if they were injured in an accident or other traumatic circumstances, they may still be affected by the events that caused their injury. The symptoms people continue to have after a concussion can be vague and difficult to diagnose. This can make it more difficult to tell if it is caused by brain injury, or something else.
This review looked at the evidence for some of the other explanations why some people carry on having health problems long after they have had a concussion.
It looked at different studies of how well people who had a recent concussion do on different types of tests. These tests are designed to measure things like your attention span, memory, and how well you are able to think, as well looking for signs of brain damage.

What does the new study say?

The review came up with five different categories of reasons to explain what may cause long-term problems after a concussion:

- **A person's outlook.** Your psychological beliefs, and whether you are generally an optimistic person, can have an effect on your health. Some studies have shown that people who are under stress, or have anxiety or depression, are also more likely to have health problems six months after their concussion.

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- **Effort.** Researchers can use statistics to predict how people who don't have any brain injury should do on tests of memory, for example. But people may make more or less of an effort when asked to perform certain tasks during tests, and the reasons why are not always related to brain injury.
- **Stress.** People do less well on tests for brain injury if they are under stress, or if the task is difficult or challenging. Studies have shown that when people with symptoms of concussion are given challenging tasks to test their thinking they experience more symptoms, think more slowly, and have more memory problems. So we don't know if people do less well because they have health problems caused by their brain injury, of because of the test.
- **Bias.** Some people do less well on these tests because they expect to perform a certain way. For example, people who have had problems with education or learning in the past may not expect to do well on tests of thinking. We don't know if this affects their performance on tests, or if they do badly because they have a brain injury.
- **Litigation.** People may perform differently on tests depending on whether they are involved in ongoing disputes about the cause of their brain injury. For example, if people are making claims for compensation after their injury, this can have an effect on how they perform on the tests. This also means it's not always possible to know what's causing a person to have symptoms long after their brain injury.

How reliable are the findings?

This is a review that explores some of these different reasons and flags up some studies that have looked into these different explanations. But it's not a review of all the evidence from these studies. We don't know how the author decided which studies to include and what to look at. So we can't be sure if the findings are reliable.

What does this mean for me?

There might be lots of reasons why, after having concussion, some people still have health problems many months after other people have recovered. This study has looked at some of the reasons, but the author also points out that there are many areas where doctors are still unsure. There needs to be a lot more research before we can tell why some people have problems after having concussion.

From: Silver JM. Effort, exaggeration and malingering after concussion. J Neurol Neurosurg Psychiatry 2012;**83**:836–41. http://jnnp.bmj.com/content/83/8/836.full

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