

Regulate brain boosting devices so everyone can have a go

May 12 2014, by Hannah Maslen



Brain bending with fo.cus. Credit: Fo.cus

Gamers around the world are snapping up a [new device that promises](#) to give them an edge on competitors by boosting their gaming focus. It is certainly easy to see the appeal of being able to improve your levels of attention at the push of a colourful, glowing button.

The [foc.us device](#) works by electrically stimulating the brain to increase the activity of neurons. More [neuron activity](#), more focus, more winning – or so the manufacturers claim. It is just one product in a growing market of cognitive enhancement devices. All these devices affect the brain in some way, be it by improving your memory, attention, learning speed or another mental process.

Many of these devices work in a similar way to those used in clinical trials where their potential medical uses are tested. Foc.us, for example, uses transcranial direct current stimulation, which has been [investigated by scientists as a potential method for treating some neurological conditions](#). Results show that stimulating certain brain areas can improve the communication abilities of stroke patients and the moods of people suffering from depression. Scientific studies have also shown evidence that mathematical ability and working memory can be enhanced in people not suffering from any mental impairment.

But there is a crucial difference. The equipment used in research is regulated. The products being marketed to improve the brain capacities of healthy people are not.

Under the current rules, a product only has to be regulated if it is used for medical purposes. The claim that a brain stimulation device can make you a better gamer is obviously not a claim about treating any illness. This means that no formal assessment has been made about the safety of these devices or whether they really have the effects they promise.

This is worrying as there are many things that need to be done right for a brain stimulation device to be used effectively and safely. Electrodes must be in a particular place to be able to target the correct part of the brain for the desired effect to be achieved. If the electrical current is too strong or delivered for too long, users risk hurting themselves. Also,

studies have shown that in some cases improvement in one cognitive skill comes at the cost of [impairment in another](#). This means that some configurations of stimulation may actually make users worse on some tasks.

Time to regulate

Because of these dangers, it has become evident that cognitive enhancement devices [should be regulated](#) in the same way as medical devices. There is room for debate about whether these regulations should be as stringent as those that govern [medical devices](#), but this is serious equipment with the potential for serious implications if devices do not conform to certain parameters.

Whether used for enhancement, treatment or research, [brain stimulation](#) devices use the same sort of mechanisms, can have the same sort of effects and carry the same sort of risks. The only difference is in what the manufacturers say the device is for. Part of our proposal is that manufacturers must be made to provide detailed, evidence-based information about the effects, risks and side effects of their device.

Regulation is not prohibition

Our recommendations are not at all motivated by a belief that access to cognitive enhancement devices should be restricted in general. Instead, we think that consumer freedom is optimised when the products that people buy in fact do what the manufacturers claim they do, and when people have the information they need to properly assess which risks they are willing to take.

For my colleague [Julian Savulescu](#), [cognitive enhancement](#) devices are just the tip of the iceberg. We will start to see more and more

technologies that are aimed at enhancing human performance so we need to strike the right balance now. If we fall prey to scaremongering, we run the risk of over regulating but public safety is vital. The key is to inform the public properly about these devices so they can live their lives as they choose, taking reasonable risks if they want to.

The best option would be to filter the most dangerous enhancement devices out of the market. No one wants to use a device that will definitely cause them great harm and this is especially true if there are ways to make the same or similar device safer. This would also leave individuals free to choose which small-to-moderate risks they want to take in pursuit of enhanced cognitive capacities, whether that be for learning languages, mastering maths or eliminating the enemy in Call of Duty.

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