

# GETTING YOUR FIX

**I**n today's world, technology is a vital fix for many kinds of problem. But, increasingly, it is becoming another kind of fix – and problem – for probably millions of people worldwide. Technology brings with it a powerful addiction.

'Internet addiction disorder' (IAD) is coming to be recognised widely by the medical profession and governments as a serious problem to the extent that one version, relating to gaming, is listed in the latest version of the psychiatrists' Bible, the *Diagnostic and Statistical Manual of Mental Disorders*, or DSM. Meanwhile, the US Academy of Paediatrics has published guidelines regarding children and use of the Internet.

Gaming is seen as the prime culprit, but Internet – or, more generally, technology – addiction can involve several other kinds of content supplied by today's digital technologies on various devices; for example, social media and pornography. Many academics are now studying the problem, one of them being Phil Reed, Professor of Psychology in Swansea University's College of Human and Health Sciences.

"The signs are very similar to other activities, such as gambling. People spend increasing amounts of time on the net, social media and so on – more time than they want to – and find themselves brushing off friends and family. This starts to impact their lives in a negative way."

Another sign is disrupted sleep: studies have shown people are waking up to check Facebook in the middle of the night.

"There is some evidence to suggest the addiction has a negative impact on health," Prof Reed says. "We don't understand this properly yet, but it's something to do with a lack of face to face interaction, which is known to boost your immune system. If you are spending increased amounts of time online on a solitary pursuit, then you

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don't see that immunity boost effect.

"Technology addiction can be associated with increases in depression and social isolation and, in part, that is because a lot of people who are technology addicted have an unmet need. That might be for social contact and they think the net is going to give it to them; but it doesn't. So they get more and more depressed and socially isolated, and it becomes a vicious circle."

The person credited with being the first to see the emergence of technology addiction is psychologist Dr Kimberly Young, who began to study the topic as long ago as 1995 and wrote in 1998 a book called *Caught in the Net*. She has founded [netaddiction.com](http://netaddiction.com) and the Center for Internet Addiction Recovery. She compares online addiction to drugs or alcohol, because the Internet provides addicts with the same kind of 'high' and they become dependent on it to feel normal.

Technology might be solving a lot of today's problems, but is it causing some new ones?

By David Boothroyd.

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similar to other sedatives.

"With sedatives, once you stop taking them, opposite kinds of effects occur; your blood pressure goes up and you become tense. And that is what we are seeing with the net."

Some countries, notably South Korea, are considering passing legislation to try to control harmful use of technology, for example by limiting advertising. A separate Bill proposes to take 1% of the gaming industry's revenue to create a fund to curb addiction. While the bill has found favour with the likes of parents, religious leaders and the medical profession, it has alarmed the Internet industry and enraged gamers. A law passed in 2011 already bans gaming between midnight and dawn for anyone under age 16, but is being appealed at South Korea's Constitutional Court.

One notorious case that took place in Korea in 2010 was the death of a baby girl from malnutrition, said to be the result of obsessive use of the Internet by the parents. The man was sentenced to two years in jail. This, and other events, prompted the government to study the subject of Internet game addiction and its latest survey reported that 2% of Koreans aged 10 to 19 – around 125,000 people – needed treatment for excessive gaming or addiction. This in a country where games are broadcast live on TV to audiences of millions.

Other countries, like China, Australia, Singapore and Japan, have also sounded similar warnings that Internet addiction represents a significant health threat.

Evidence is also growing that technology addiction is affecting the brain. For example, a paper published in the scientific journal *PLOS One* showed the condition is associated with structural abnormalities in the brain. "Grey matter volumes ... and white matter changes ... were significantly correlated with the duration of Internet addiction in the adolescents with IAD," said the authors.

Another academic paper, published in *Current Psychiatry*

### How big a problem is it?

"In Europe and North America, prevalence looks like somewhere around 4 or 5% of the younger population (16 to 30)," Prof Reed says. "In Asia, you might triple that figure. We don't know why that is the case.

"Internet addicts often know there is a problem but, as with most addictions, it is very difficult to own up to; there is still a bit of shame about it. We have demonstrated ourselves withdrawal effects (a study last year by Swansea and Milan University was the first to show this). When addicts come offline, they get negative mood swings, increased levels of depression and increased impulsivity.

"We have also found a wide range of physiological effects. When I first started talking about this, I used to say it was a bit like being addicted to ecstasy. I now think that was wrong; it's more like heroin in the sense that the physiological effects you get from withdrawal are somewhat

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Review in 2012, says IAD 'ruins lives by causing neurological complications, psychological disturbances and social problems'. The paper goes on to claim there is increasing evidence that there can be a genetic predisposition to addictive behaviours and that the symptoms show overlap with other behavioural addictions.

Another doctor trying to help technology addicts is Dr Henrietta Bowden-Jones, honorary senior lecturer in the Division of Brain Science at London University's Imperial College and founder and director of the National Problem Gambling clinic based in London. This is the UK's only NHS clinic for problem gambling.

Gaming is definitely the most common technology addiction problem area, she says.

"Such people are typically obsessed with the activity. They think about it virtually all the time; even when not playing. They suffer from irritability, anxiety or depression if they are stopped from playing and spend more and more time playing, isolated from other people."

One reason gaming is thought to be the worst culprit for addiction stems from the nature of the activity itself; an inherently competitive process structured to create winners, which is known to stimulate neurobiological reward mechanisms (the release of dopamine) in the brain.

Apart from gaming, the other major problem area for technology addiction is gambling, although this was obviously an activity that has caused addiction problems for many years before the Internet appeared.

## FACT:

**At Dr Bowden-Jones' clinic, around 800 problem gamblers are seen every year and, of these, some 40% are gambling online, up from 20% a few years ago.**

At the moment, there is no treatment for Internet addiction available on the NHS, although there are private clinics that provide such services.

"I think there is a need for that and the NHS should provide it at some point," says Dr Bowden-Jones. "We are developing some treatment protocols and would love to use them but, currently, there is no funding available to treat Internet gaming addicts. It would be great to see a centre of excellence established. If someone goes to their doctor today for treatment, they will probably be referred to see a psychological counsellor, who will typically offer a form of cognitive behavioural therapy."

Looking at the problem from the slightly broader view of 'technology dependence' is Remy Oudghiri, French director of the Trends and Insights Department at market research company Ipsos (Ipsos MORI in the UK). His team has researched how many people consider themselves to be dependent on it.

"The number of such people has increased over the last five years. In most advanced countries, around 80% of people need to connect every day, otherwise they cannot work, communicate or do lots of their everyday tasks."

Oudghiri feels a turning point occurred around 2010, when the smartphone revolution took off.

"A major consequence was that people became connected all the time and, in our survey, some 10% go to sleep with their mobiles, saying they 'feel more secure'."

He says the situation poses a key question for us all: how can we keep control in a society that is becoming hyper connected, where being connected is not just a possibility, but an obligation and a necessity? How to do this is the subject of a book by Oudghiri published last year.

"Our surveys show an increasing proportion of people say they are losing control due to a lack of time, concentration or creativity. There is always a 'lack' and, when you try to dig deeper, there is a direct correlation to their use of technology."

## FACT:

**"Research in the US shows people who are obsessively connected all the time are less efficient than those who take breaks from it, for example with face to face meetings or simply on their own. Companies, like automotive makers BMW and VW, are starting to acknowledge this."**

Clearly, technology addiction is a growing problem, even if the vast majority of us manage to use technology without getting addicted. But it might just be that the powerful attraction of electronic games could be put to positive use. This is certainly the view of the man whom many see as the father of gaming. Atari founder Nolan Bushnell has formed a new company, called Brainrush, to exploit the power of games as an educational tool.

Bushnell believes that combining gaming techniques with brain science will change education more in the next five years than it has in the last 3000. "It's a perfect storm," he says.

Jesse Schell, CEO of Schell Games, who has taught at Carnegie Mellon's Entertainment Technology Center, says it is already happening, with educational games being the fastest growing part of the market.

"People see the power that games hold. They see the engagement. Parents say 'I wish they were as excited about algebra as they are about Call of Duty'."

Similarly, a project targeted at girls and underway at Northeastern University in Seattle has a self explanatory acronym: GAMES – Girls Advancing in Maths, Engineering and Science. There is already something of a track record for this approach, with some hugely successful girl oriented games. For example, Seattle based Her Interactive has sold more than 9million copies of one such game.

Finally, the Center for Game Science at the University of Washington specialises in developing scientific discovery games and cognitive skill training games.

From whatever viewpoint, addiction or education, electronic game playing is clearly no longer a trivial matter.