

# Could humans be infected by computer viruses?

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Dr Mark Gasson

(PhysOrg.com) -- A scientist at the University of Reading has become the first person in the world to be infected by a computer virus.

Dr Mark Gasson, from the School of Systems Engineering, contaminated a computer chip which had been inserted into his hand as part of research into human enhancement and the potential risks of implantable devices.

These results could have huge implications for implantable computing technologies used medically to improve health, such as heart pacemakers

and [cochlear implants](#), and as new applications are found to enhance healthy humans.

Dr Gasson says that as the technology behind these implants develops, they become more vulnerable to computer viruses.

"Our research shows that implantable technology has developed to the point where implants are capable of communicating, storing and manipulating data," he said. "They are essentially mini computers. This means that, like mainstream computers, they can be infected by viruses and the technology will need to keep pace with this so that implants, including medical devices, can be safely used in the future."

Dr Gasson will present his results next month at the IEEE International Symposium on Technology and Society in Australia, which he is also chairing.

A high-end [Radio Frequency Identification](#) (RFID) chip was implanted into Dr Gasson's left hand last year. Less sophisticated RFID technology is used in shop security tags to prevent theft and to identify missing pets.

The chip has allowed him secure access to his University building and his mobile phone. It has also enabled him to be tracked and profiled. Once infected, the chip corrupted the main system used to communicate with it. Should other devices have been connected to the system, the virus would have been passed on.

Dr Gasson said: "By infecting my own implant with a [computer virus](#) we have demonstrated how advanced these technologies are becoming and also had a glimpse at the problems of tomorrow.

"Much like people with medical implants, after a year of having the implant, I very much feel that it is part of my body. While it is exciting

to be the first person to become infected by a [computer virus](#) in this way, I found it a surprisingly violating experience because the implant is so intimately connected to me but the situation is potentially out of my control.

"I believe it is necessary to acknowledge that our next evolutionary step may well mean that we all become part machine as we look to enhance ourselves. Indeed we may find that there are significant social pressures to have implantable technologies, either because it becomes as much of a social norm as say mobile phones, or because we'll be disadvantaged if we do not. However we must be mindful of the new threats this step brings."

Provided by University of Reading

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