

Air ionisers wipe out hospital infections

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Repeated airborne infections of the bacteria acinetobacter in an intensive care ward have been eliminated by the installation of a negative air ioniser.

In the first such epidemiological study, researchers found that the infection rate fell to zero during the year long trial. "We were absolutely astounded to find such clear cut results," engineer Clive Begg at the University of Leeds, UK, told **New Scientist**.

Stephen Dean, a consultant at the St James's Hospital in Leeds where the trial took place says: "The results have been fantastic - so much so that we have asked the university to leave the ionisers with us."

The ionisers produce negative air ions that collide with suspended particles and give them a charge. The scientists believe charged particles aggregate together and fall out of the air, thereby disinfecting the atmosphere and stopping the transmission of infection.

"We don't fully understand how it is working, but we suspect it is damaging or killing the bacteria," says Beggs. "But if the ionisers are cleaning the air in this way, we would expect to find more precipitation of acinetobacter on surfaces and this is exactly what we found."

Antibiotic resistant

Acinetobacter infections are often very difficult to treat as the bacterium is resistant to many antibiotics. It poses no real threat to healthy humans but can cause serious infections in people with weakened immune systems.

"Ionisers may become a powerful weapon in the fight against hospital acquired infection," says clinical microbiologist Kevin Kerr, another team member. "People had focused on getting doctors and nurses to wash their hands and had not looked at anything else."

About 10 per cent of infections in the UK's public hospitals have been estimated to be airborne, but Kerr says it may be even higher, as conventional methods to sample airborne bacteria are inefficient.

But although the results are very promising, he adds that further research is needed because acinetobacter infections tend to be cyclical. "They may not be seen for weeks or months and then you see a cluster of infections," he says.

TB target

The team is currently doing more lab studies to see if other organisms may be targeted. Tuberculosis is one promising target.

Brian Duerden, director of the UK's Public Health Laboratory Service, is encouraged by the results. "It is not the whole answer as many infections are spread by touch, but it is a potential addition to the weaponry against hospital infections," he told **New Scientist**.

Research by electronics company Sharp has shown that positive and negative ions produced by their air conditioning systems can inactivate viruses including influenza. But the new study is the first to link such an effect to reduced infections in hospitals.

Reference: <http://www.newscientist.com/article.ns?id=dn3228>