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Now that's a beefed up Wi-Fi network! Wireless signals sent through meat prove our BODIES could soon connect to the web

- **'Meat-comms' project shows potential to boost wireless signals in the body**
- **Scientists transmitted wireless signals through slabs of pork and beef**
- **Their ultrasound approach could help to develop better connected implants**
- **The team thinks that in future it might be possible to have networks of implants which communicate with each other wirelessly**

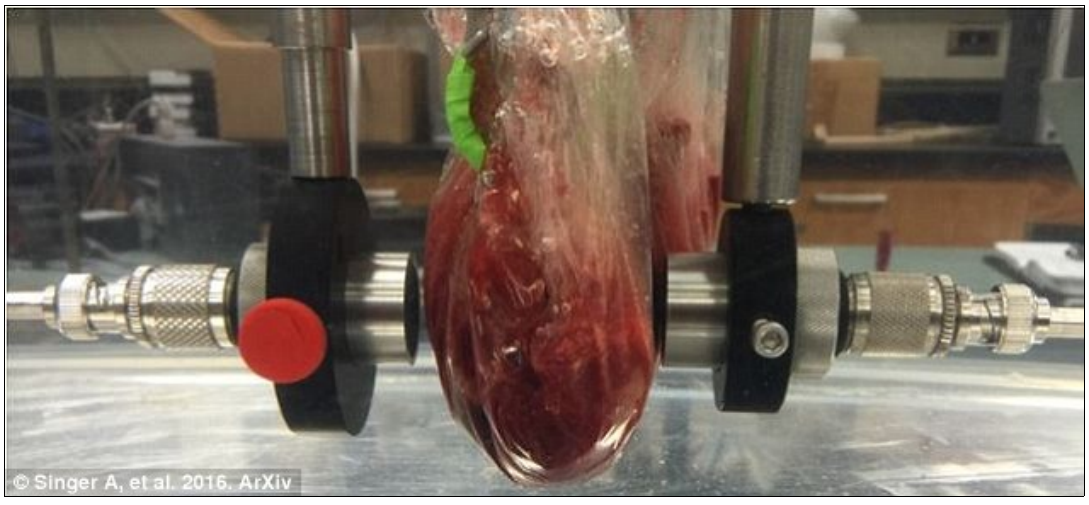
By RYAN O'HARE FOR MAILONLINE
PUBLISHED: 07:42 EST, 15 April 2016 | **UPDATED:** 08:58 EST, 15 April 2016

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Weak wireless signals are the bane of modern life, bringing a binge watching session of your favourite box set to an abrupt and stuttering end.

Now a team in the US has shown that wireless signals can be transmitted through slabs of meat in the lab - and the signals are strong enough to stream video.

Beyond streaming Netflix through a pork roast, though, the team said it could have benefits for controlling medical devices inside our bodies.



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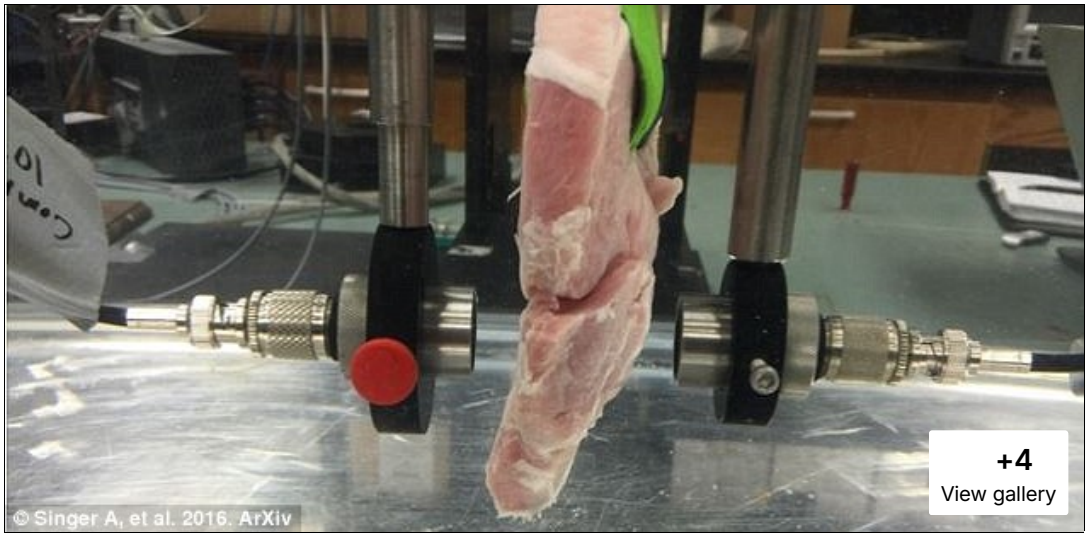
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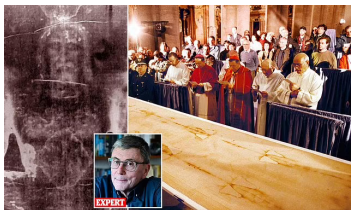
Researchers in the US have demonstrated a way to boost wireless signals which could be used for medical implants, using slabs of meat (liver pictured) in the lab- and the signals are strong enough to stream video



Currently, medical implants use radio frequencies to transmit data, but signal strength can be reduced as it is absorbed by the tissues. In trials, the group was able to send a highly targeted signal through a pork loin in a water tank (pictured top and bottom) while retaining a strong signal

Andrew Singer from University of Illinois at Urbana Champaign and colleagues demonstrated the approach using chunks of pork loin and beef liver.

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In experiments, they were able to get data rates up to 30MBps, which could remove the hurdles standing in the way of medical implants.

Patients with heart conditions make up the bulk of those with implanted medical devices, but the technology is expanding rapidly to include things such as insulin pumps for diabetes and potentially implants for monitoring brain activity.

Being able to control the devices remotely is a key consideration, avoiding additional surgery which could put the patient under more strain.

BEEFING UP THE SIGNAL

The team boosted the strength of wireless signals passing through tissue, using slabs of meat in the lab.

To overcome the issue of limited signal strength with current devices, the team looked to ultrasonic communication used by to carry signals under the ocean, which can travel long distances

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Currently, most medical devices use radio frequencies to transmit data and are limited to bandwidths of around 300KHz.

But the strength of the signal can be reduced as it is absorbed by the tissues.

Outside of the body, an easy fix is simply to boost the power of the signal, but this can mean devices give off more heat.

This is a bad thing for the surrounding tissue, meaning the power of the devices is limited.

without losing too much signal strength.

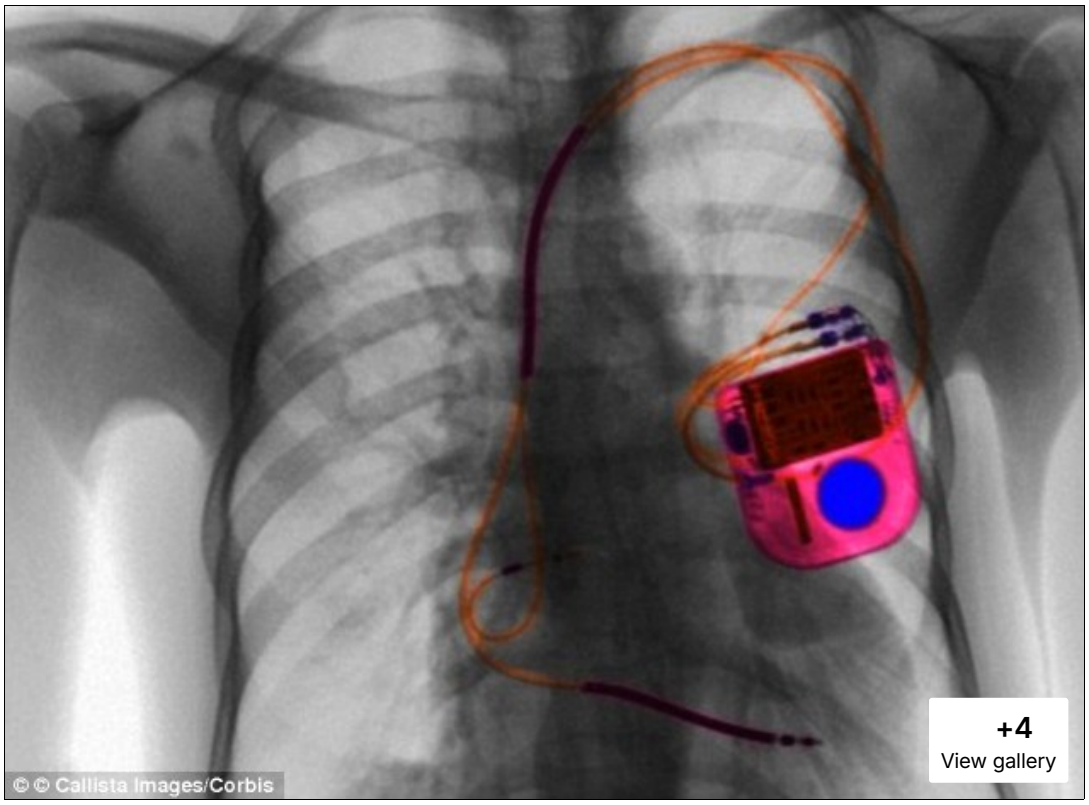
In experiments, they were able to get data rates up to 30MBps - strong enough to stream video - which could remove the hurdles standing in the way of the next generation of medical implants.

The researchers think that in future it may be possible to have networks of implants which can communicate with each other wirelessly.

Singer and his colleagues moved beyond radio frequencies to ultrasound, the same region of the spectrum used to scan a developing foetus inside the womb.

The team looked to ultrasonic communication used by to carry signals under the ocean, which can travel long distances without losing too much signal strength.

Speaking to **New Scientist**, Singer explained: 'You're a big bag of salt water, with some bones and some other tissues. Communicating in the ocean and communicating in your body are very similar.'



Researchers found they were able to send signals through the tissue at data rates of 20 to 30MBps. This could enable medical devices (stock image) to receive and transmit data, without causing heat damage to the surrounding tissues, and could prove useful in devices such as ingestible cameras

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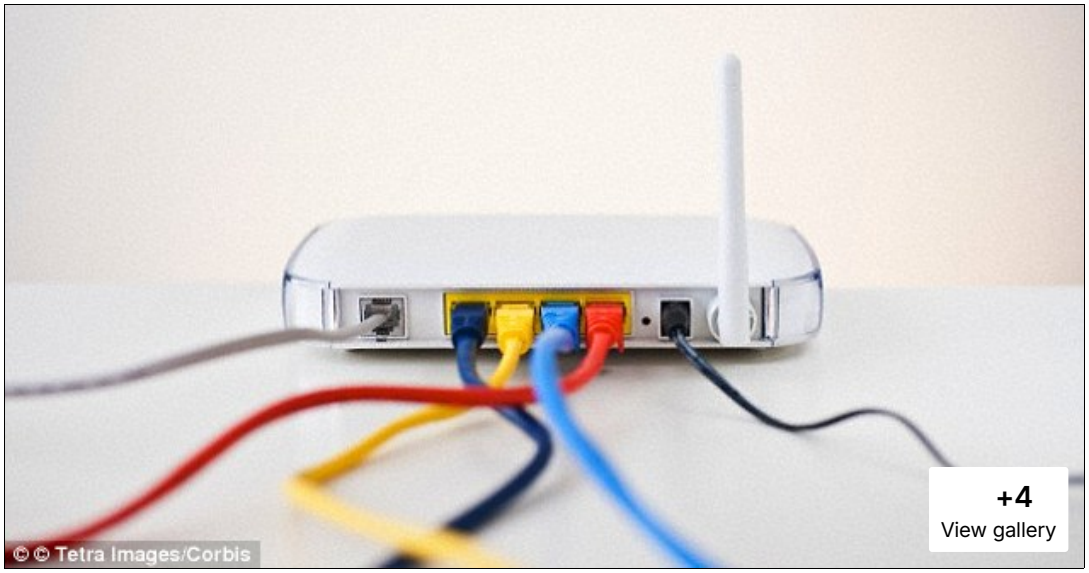
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Outside of the body, boosting the power helps strengthens wireless signals, but this can mean devices give off more heat, which is a bad thing for implants and their surrounding tissue. Stock image of wireless router

The group published the findings of its aptly named 'meat-comms' project last month in the online journal **ArXiv**, in which they explain that the tests demonstrate 'the possibility of real-time video-rate data transmission through tissue for inbody ultrasonic communications with implanted medical devices.'

In trials, the group used a 20MHz transducer to send a highly targeted signal through slabs of meat in a water tank, with a hydrophone to pick up the signal.

It found that it was able to send signals through the tissue at data rates of 20 to 30MBps over the short distance.

This could enable medical devices to receive and transmit data from inside a person's body, without causing heat damage to the surrounding tissues, and could prove useful in devices such as ingestible cameras.

But Singer also told New Scientist of the potential for a whole network of implants inside the body which can communicate with each other wirelessly.

For now, at least, the prospect remains interesting food for thought.

PORK PROXIES AND LABORATORY MEAT

The latest study is not the first time this week MailOnline has reported on a pork proxy used in the lab to replicate the human body.

In Denmark, scientists are trying to demonstrate the damage a small hobby drones can do when they collide with people and animals.

Researchers at Aalborg University's Drone Research Lab rigged a catapult to launch a hobby drone into a slab of belly pork at high speed, recording the impact with a high-speed camera capturing 3,000 frames per second.

Footage from the initial test shows one of the plastic propellers making contact with the meat before it flexes from the force and a shard of plastic breaks off.

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Sullen Jeremy Strong reacts to losing Oscar to Succession co-star Kieran Culkin at 2025 Academy Awards

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Fans go wild over tiny detail on Ariana Grande's dress as she delivers Oscars 2025 performance with Cynthia Erivo

Furious Demi Moore fans erupt over her Oscar loss to younger actress despite being favorite: 'Robbed'

It appears to puncture the slab of meat, entering by up to half way, which could make for a nasty injury.

However, the researchers said that while the initial findings are interesting, it is too early to tell anything at this stage and tests are ongoing.

Danish researchers test drone impacts using pork catapult





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