MEDICAL APPLICATIONS FOR WIRELESS CHARGING

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WHAT IS WIRELESS CHARGING?

- Wireless power transfer
- Electromagnetic resonance
- Impedance Matching Network (IMN)

CURRENT WIRELESS CHARGING APPLICATIONS

- Cellphone wireless charging
  - New Samsung phones
  - New iPhones
- Smart watch wireless charging
  - Samsung smart watches
  - Apple smart watch
  - Several other smart watches

https://www.theguardian.com/technology/2017/sep/13/apple-iphone-8-iphone-x-what-is-wireless-charging-do-i-need-it
CURRENT MEDICAL TECHNOLOGY

- Internal Defibrillator
- Internal Pacemaker
- Internal Insulin Pump
- Cochlear Implants
- Neuro-stimulators
- Gastric Stimulators

https://rahulmittal.wordpress.com/2014/03/31/wireless-charging-do-we-need-this-technology-in-its-current-form/
WHAT CAN WIRELESS CHARGING DO TO HELP?

- Allow for less frequent surgery to replace batteries
- Allow comfort for the patients
- Less Expensive
- Smaller chance of infection
- No harmful side effects

WHAT DEVICES ARE ALREADY STARTING TO USE WIRELESS CHARGING

• Several companies are beginning to explore wireless charging technology for internal defibrillators and pacemakers (WiTricity)
• There is also research being done for using this technology to create wireless Automated External Defibrillators (AEDs)
• Many applications are possible

https://fossbytes.com/witricity-will-allow-use-wireless-electricity/
DISCUSSION

• Still has not become the mainstream for medical devices
• Technology still is not perfect (Minor charging issues)
• If technology is perfected it could improve the lives many people
• Current implementations for Apple and Samsung devices are proof that the technology can prove to be affective
The technology is growing extremely fast and will soon be the mainstream when it comes to electronic charging.

This means that all medical devices even besides the implantable ones could soon take advantage of wireless charging.

Technology may even go as far as wireless charging in an entire room or even an entire building (going completely wireless).

Could revolutionize medical technology in and out of hospitals.


QUESTIONS?