

## HEALTH

# Tin Foil Hats Actually Make it Easier for the Government to Track Your Thoughts

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*Or so says "physics."*



Getty Images

Let's say some malevolent group -- the government, powerful corporations, extraterrestrials -- really is trying to read and/or control your thoughts with radio waves. Would the preferred headgear of the paranoid, a foil helmet, really keep The Man and alien overlords out of our brains?

The scientific reasoning behind the foil helmet is that it acts as a Faraday cage, an enclosure made up of a conducting material that shields its interior from external electrostatic charges and electromagnetic radiation by distributing them around its exterior and dissipating them. While sometimes these enclosures are actual cages, they come in many forms, and most of us have probably dealt with one type or another. Elevators, the scan rooms that MRI machines sit in, "booster bags" that shoplifters sometimes use to circumvent electronic security tags, cables like USB or TV coaxial cables, and even the typical household microwave all provide shielding as Faraday cages.

While the underlying concept is good, the typical foil helmet fails in design and execution. An effective Faraday cage fully encloses whatever it's shielding, but a helmet that doesn't fully cover the head doesn't fully protect it. If the helmet is designed or worn with a loose fit, radiofrequency electromagnetic radiation can still get up underneath the brim from below and reveal your innermost thoughts to the reptilian humanoids or the Bilderberg Group.

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In 2005, a group of MIT students, prodded by "a desire to play with some expensive equipment," tested the effectiveness of foil helmets at blocking various radio frequencies. Using two layers of Reynolds aluminum foil, they constructed three helmet designs, dubbed the Classical, the Fez, and the Centurion, and then looked at the strength of the transmissions between a radio-frequency signal generator and a receiver antenna placed on various parts of their subjects' bare and helmet-covered heads.



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The helmets shielded their wearers from radio waves over most of the tested spectrum (YouTube user Mrfixitrick likewise demonstrates the blocking power of his foil toque against his wireless modem) but, surprisingly, *amplified* certain frequencies: those in the 2.6 Ghz ( allocated for mobile communications and broadcast satellites) and 1.2 Ghz (allocated for aeronautical radionavigation and space-to-Earth and space-to-space satellites) bands.

While the MIT guys' tongue-in-cheek conclusion -- "the current helmet craze is likely to have been propagated by the Government, possibly with the involvement of the FCC" -- maybe goes a few steps too far, their study at least shows that foil helmets fail at, and even counteract, their intended purpose. That, or the students are aliens who fabricated these results in an effort to get you to take your perfectly functional helmet off.

*A version of this post originally appeared on Mental Floss, an Atlantic partner site.*