Movie fact check: Could Martian explorer survive radiation?

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In the newly released *The Martian*, a stranded astronaut must figure out how to survive on the Red Planet after being accidentally left behind when the rest of his crew escapes a violent dust storm. Explorer Mark Watney spends many months trying to make water, grow food and send an SOS signal back to Earth. Most of the tools he uses in the film are based on existing or in-development technology. The one major exception is the radiation-blocking material that allows Watney to spend much of his days outside his habitat, on the surface of a planet that lacks Earth's atmosphere and is thus bathed in significantly higher levels of damaging radiation.

"In the book they have this really thin, light, flexible material that blocks all radiation," says Andy Weir, author of the book *The Martian* on which the film was based. "There's nothing even remotely like that in the real world. That was the magic I gave him so the story would progress. Otherwise Mark would have different kinds of cancer."

Scientists differ on how dangerous the radiation levels on Mars would actually be for future explorers. The first on-the-ground radiation measurements came from NASA's Curiosity rover in 2013, which suggested that astronauts who spent a year traveling to and from Mars and 500 days on the surface would receive a radiation dose of about one Sievert, equivalent to a roughly five percent increased lifetime risk of cancer compared to a lifetime of exposure back on Earth.

Read full, original post: 'Martian' Astronaut Would Get Cancer if Mission Were Real, Author Says