



CBRNE Newsletter



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Fallout's Rule of Thumb

Fallout, the latest Game-to-Show Adaptation produced by Amazon brings about the "Rule of Thumb". According to the character known as The Ghoul, during military training he was taught that if you extend your arm and raise your thumb in the direction of the blast, you can determine whether you are going to survive it. The rule says that if the mushroom cloud is smaller than your thumb you will be safe from the radioactive fallout, but is there validity to this rule?

Nuclear Fallout varies greatly on wind speed, direction, payload and height of burst; each factor will greatly affect the safe distance. While radiation might be your initial fear and most assumed risk, there are other dangers to avoid.

Nuclear blasts are composed of different energy hazards. It's been concluded that 50% is Blast Energy, 35% is Thermal, and 15% is Ionized Radiation. Too close to Radiation results in acute radiation poisoning and death. Too close to Thermal results in blindness, burns in all degrees and possibly vaporization. Too close to Blast results in blunt force trauma and soft tissue ruptures. Each energy also travels at different distances from the burst, so in order for the Rule of Thumb to work, it MUST keep you at a safe distance from each energy.

How far each energy travels is determined by both the size of the weapon and the environment the weapon is in. Radiation is most people's initial concern, but in actuality Radiation has the shortest range of all the energies involved. The Blast wave is the energy that travels the second farthest, this is because it has the most energy behind it. Finally, Thermal travels the furthest as light photons don't interact with air in the same way that high energy particles do.

The Rule of Thumb isn't just wrong, it's useless. If you're trying to avoid Thermal energy, it travels at the speed of light and you'd literally have no time to check. If you're trying to avoid Blast energy, you'll only have a second to try to take cover rather than hold out your thumb and check like a dingus. The Rule of Thumb is fun and it fits with the dark humor of the Fallout series but ultimately it's false.

U.S. Army's Nuclear testing in the Nevada desert

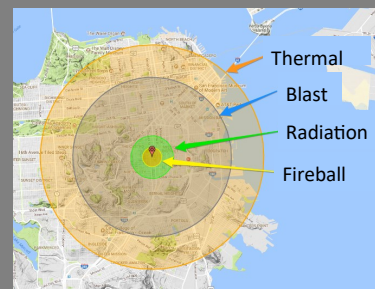
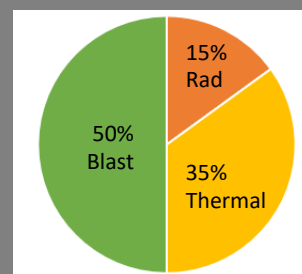
From 1945 to 1992, nuclear testing ramped up with the Cold War. In time, the military started inviting the public to come out and watch. Las Vegas became a hotspot watch party site to see nuclear bombs explode in the desert. However, atmospheric nuclear testing alone is believed to have caused 2.4 million deaths through cancer.

This is the Legacy of the Nuclear Age: the U.S. blasted itself over 1,000 times and killed more than a million of it's own people while only ever launching two at it's enemies.



Fallout, Vault Boy

Nuclear Hazards



NukeMap Interactive Map



NukeMap Interactive Map