

# A BEGINNER'S GUIDE TO NUCLEAR WEAPONS



## PRINTABLE GUIDE · MISCONCEPTIONS & MYTHS

*You have questions, we have answers. The topics of nuclear war and weapons can quickly feel overwhelming and confusing, so here's our take on some of the most common concerns we hear.*

### **MYTH: NUCLEAR WEAPONS MAKE US SAFE. THEY DETER OTHER COUNTRIES FROM ATTACKING US.**

Nuclear weapons are inherently destabilizing. By threatening massive harm to millions of people in a matter of minutes they introduce a high-stakes element to any conflict.

Claims that nuclear weapons make us safe are based on the [theory of nuclear deterrence](#)<sup>1</sup>, which suggests that adversaries will not risk attacking a nation that may retaliate with nuclear weapons. But this is nothing more than a theory. Although nuclear weapons haven't been used in war since the U.S. bombed Hiroshima and Nagasaki in 1945, it is impossible to prove that this is because of deterrence. More likely, it's a fragile equilibrium sustained by luck and restraint—not a guarantee.

Meanwhile, we make the very dangerous gamble that deterrence is enough to keep countries from using their nuclear weapons. If the theory fails, it could very well mean the end of [life on Earth as we know it](#)<sup>2</sup>.

But do nuclear weapons keep us safe from conventional attacks? We already know that the answer is no. The [U.S.](#)<sup>3</sup>, [Britain](#)<sup>4</sup>, [Israel](#)<sup>5</sup>, [Pakistan](#), and [India](#)<sup>6</sup> have all been attacked despite possessing nuclear weapons.

### **MYTH: THE THREAT OF NUCLEAR WAR IS A THING OF THE PAST.**

After 80 years of nuclear weapons and no further nuclear use in war, it is tempting to think the risk has faded. But many experts say that, in reality, the world is closer to the nuclear brink than it ever has been.

Tensions are rising globally, due in part to climate change, and provocative rhetoric is becoming commonplace. This, plus the fact that there are 9 nuclear powers that each bring their own interests to the table, makes the geopolitical landscape increasingly unstable. Leaders of countries possessing nuclear weapons have been threatening to use them in recent years.

An estimated 2,100 nuclear weapons around the world are kept [ready to launch in an instant](#)<sup>7</sup>, building pressure for hasty or irrational decision-making. This means if there's a misunderstanding or false alarm, it would be all too easy for a decision maker to order the launch of nuclear weapons without thinking it through. In fact, there have already been dozens of incidents—that are publicly known—where the United States has nearly triggered a nuclear disaster by mistake. While we are fortunate that each error was caught in time, the record shows that nuclear weapons systems – and the human beings that control them – can and do fail.

### **MYTH: WE CAN STOP A NUCLEAR ATTACK.**

It is highly unlikely that there will ever be a fully effective system to defend against a large scale nuclear missile attack. Intercontinental ballistic missiles are incredibly fast, giving defenders only minutes to calculate the missile's trajectory and

shoot it down. The warhead, the part of the missile with the nuclear weapon, [is a small and difficult target to hit](#)<sup>8</sup>. Additionally, adversaries launching missiles have several tricks to evade interception, like launching decoy missiles or even deploying several warheads on the same missile.

Even though the U.S. has spent [\\$400 billion](#)<sup>9</sup> in the last 70 years on ballistic missile defense projects like former President Ronald Reagan's "Star Wars" initiative, there is still no effective missile defense against a large scale missile attack. In 2025, the Trump administration proposed a massive increase in strategic missile defense funding known as the "[Golden Dome](#)"<sup>10</sup>, intended to protect the United States by detecting and destroying threats like ballistic and cruise missiles. More effective than any missile defense system would be for countries that possess nuclear weapons to negotiate arsenal reductions and eventual elimination.

In the event of a large-scale missile attack, it is unlikely there could ever be an effective defense system that could stop such a barrage. But by pretending that effective defense systems exist, nuclear conflict might seem more manageable or winnable to decisionmakers and military planners. It also provides cover for world leaders to rattle their sabers in place of diplomacy, putting millions - if not billions - of lives in danger as they test the limits of nuclear deterrence theory.

#### **MYTH: WE'RE SAFE AS LONG AS WE MAKE SURE NUCLEAR WEAPONS DON'T FALL INTO THE WRONG HANDS.**

No matter who has them, nuclear weapons pose a threat to humanity. There are no "good guys" with nuclear weapons or "bad guys" with nuclear weapons. The weapons themselves are the problem. They are unlike any other weapon— exponentially more lethal than conventional bombs, indiscriminate in who they kill, and destructive on a landscape-altering scale. Every time nuclear weapons factor into a conflict, tensions skyrocket. In such situations, nobody is guaranteed to think or act rationally. It's all too likely that a [miscalculation or misunderstanding](#)<sup>11</sup> could quickly escalate into a full-fledged nuclear war. In fact, the world has come alarmingly close to an accidental nuclear launch more than a few times. Each time, it was only through luck that the

errors were discovered before someone launched a nuclear weapon that can't be taken back.

#### **MYTH: I DON'T NEED TO WORRY ABOUT NUCLEAR WEAPONS RIGHT NOW**

While funding for programs that provide basic human needs and security keep getting slashed, the United States spent [\\$110.344 billion](#)<sup>12</sup> on nuclear weapons in 2024. Instead of investing in feeding people and keeping them safe, those tax dollars were spent on weapons we hope never to use. We already have enough nuclear weapons to destroy the world many times over.

What if, instead of fueling a global nuclear arms race by spending hundreds of billions on a new generation of nuclear weapons, we freed up those resources to fund things like public infrastructure, housing, and healthcare?

Even if nuclear weapons are never again used in war, simply building and testing them has caused real harm to both people and the environment. Tests above ground produce dangerous nuclear fallout that cannot feasibly be contained, contaminating the environment and sickening living things as it scatters in the atmosphere. Underground tests, which became the norm after 1963, also pose risks through groundwater contamination and accidental venting. The spent nuclear fuel, which stays highly radioactive for [tens of thousands of years](#)<sup>13</sup>, needs to be securely stored—a task much [easier said than done](#)<sup>14</sup>.

People of color have long borne the brunt of these consequences. In the U.S., [Navajo miners](#)<sup>15</sup> collecting uranium for the weapons, and those who live near the mines, have higher rates of illnesses like tuberculosis and lung cancer. Historically, nuclear tests have disproportionately affected Indigenous and Latinx communities, both in the U.S. and abroad. The radiation released during these tests has created generations of "downwinders" — people who became ill from living downwind of the sites.

Most countries ceased nuclear tests [in the 1990s](#)<sup>16</sup>. North Korea is the sole exception, having carried out six tests between 2006 and 2017. Advisers to the Trump administration, however, have expressed interest in [resuming nuclear tests](#)<sup>17</sup>, risking a new era of environmental harm and impacts to human health.

## LINKS

1. <https://carnegiecouncil.org/explore-engage/key-terms/nuclear-deterrence>
2. [https://www.nature.com/articles/s43016-022-00573-0?utm\\_medium=affiliate&utm\\_source=commission\\_junction&utm\\_campaign=CONR\\_PFo18\\_ECOM\\_GL\\_PHSS\\_ALWYS\\_DEEPLINK&utm\\_content=textlink&utm\\_term=PID100085446&CJEVENT=f2f5a8c5924111ee821a04800a82b824](https://www.nature.com/articles/s43016-022-00573-0?utm_medium=affiliate&utm_source=commission_junction&utm_campaign=CONR_PFo18_ECOM_GL_PHSS_ALWYS_DEEPLINK&utm_content=textlink&utm_term=PID100085446&CJEVENT=f2f5a8c5924111ee821a04800a82b824)
3. <https://www.history.com/articles/9-11-attacks>
4. <https://www.iwm.org.uk/history/a-short-history-of-the-falklands-conflict>
5. <https://www.history.com/articles/yom-kippur-war>
6. <https://armscontrolcenter.org/countries/india-and-pakistan/>
7. <https://fas.org/initiative/status-world-nuclear-forces/>
8. [https://www.nytimes.com/interactive/2024/11/02/world/middleeast/missile-defense-israel-iran.html?unlocked\\_article\\_code=1.Rk8.ixOa.obqDcdtwat81&smid=url-share](https://www.nytimes.com/interactive/2024/11/02/world/middleeast/missile-defense-israel-iran.html?unlocked_article_code=1.Rk8.ixOa.obqDcdtwat81&smid=url-share)
9. <https://www.aps.org/publications/reports/strategic-ballistic-missile-defense>
10. <https://armscontrolcenter.org/fact-sheet-golden-dome/>
11. <https://www.ucs.org/sites/default/files/attach/2015/04/Close%20Calls%20with%20Nuclear%20Weapons.pdf>
12. <https://preventnuclearwar.org/2025-tax-calculator/>
13. <https://www.gao.gov/nuclear-waste-disposal>
14. <https://www.energy.gov/sites/default/files/2024-08/Congressional%20Report%20on%20Climate%20Change%20Runit.pdf>
15. <https://www.epa.gov/navajo-nation-uranium-cleanup/aum-cleanup>
16. <https://www.un.org/en/observances/end-nuclear-tests-day/history>
17. <https://thebulletin.org/2025/02/why-it-would-be-a-bad-idea-for-the-trump-administration-to-conduct-a-rapid-nuclear-test/>



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links and actions.

[www.preventnuclearwar.org](http://www.preventnuclearwar.org)

Back from the Brink is a national grassroots campaign of committed individuals, organizations, and elected officials advocating for common-sense policies to prevent nuclear war and abolish nuclear weapons from the planet.

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