

A BEGINNER'S GUIDE TO NUCLEAR WEAPONS



PRINTABLE GUIDE · HUMANITARIAN CONSEQUENCES AND SOCIAL JUSTICE

Nuclear weapons cause devastating destruction and lasting toxicity—but the problem begins long before they explode. Building and testing of these weapons causes real harm to the health of living things and the environment, with women, children, and people of color bearing the brunt. Read on to understand the wide-reaching impacts of nuclear weapons.

NUCLEAR WEAPONS ARE A HUMANITARIAN ISSUE

Nuclear weapons are uniquely harmful to human health. In addition to the mass casualties caused directly by their explosions and the subsequent highly lethal fallout, nuclear weapons also release radioactive materials as they're being built or tested. These unstable atoms can linger in the soil and atmosphere for centuries, and even millennia in some cases. No level of exposure is safe.

Nuclear weapons are made from uranium or plutonium, which is derived from uranium. Uranium miners and those living near mining sites suffer health impacts such as tuberculosis and lung cancer. In the United States, these people are primarily [Native American](#)¹.

Underground and above-ground testing of these weapons has created generations of “downwinders” — people who became ill from living downwind of testing sites. Workers in the U.S. nuclear weapons complex also suffer from exposure to radiation and harmful chemicals. Although [compensation programs](#)² for downwinders and nuclear workers exist, they are often limited and elusive; many who apply for these programs have had their claims denied.

One of these programs is the [Radiation Exposure Compensation Act \(RECA\)](#)³, which has provided more than \$2.6 billion to people who have developed specified illnesses like cancer from nuclear weapons testing or production. When RECA was enacted in 1990, it notably did not cover downwinders in Utah, Idaho, Mohave County, Arizona, and New Mexico — including those affected by the Trinity Test. [Activists worked for many years](#)⁴ to fix these gaps and extended the program as it neared expiration in 2024. RECA lapsed for over a year before it was [reinstated and expanded in 2025](#)⁵.

To learn more about the human impacts of nuclear weapons production and testing, read “[Unknowing, Unwilling, and Uncompensated](#)”⁶ by the Tularosa Basin Downwinders Consortium.

NUCLEAR WEAPONS ARE A RACIAL JUSTICE ISSUE

The nuclear era has been inextricably tied to racism from day one. As nuclear weapons have been produced, tested, and used, communities of color have borne the brunt.

In 1945 the Trinity Test, the first ever detonation of a nuclear weapon, occurred in South Central New Mexico, an area populated with Indigenous and Latinx communities. Residents were neither informed nor protected from the effects of this explosion, and fought for nearly 80 years to receive compensation before finally becoming eligible for the Radiation Exposure Compensation Act in 2025.

While scientists involved in the Trinity Test took precautions against radiation exposure for their own staff, science historian Alex Wellerstein notes

there was a [lack of comparable concern](#)⁷ for the Japanese civilians who would later be exposed. According to the book “[African Americans Against the Bomb](#)⁸” by Vincent Intondi, African Americans were among the first to criticize Truman’s decision to drop the bomb. Some activists believe that racial bias played a role in the decision to bomb Japan, rather than Germany, and viewed nuclear weapons as a [threat to freedom](#)⁹ everywhere.

Throughout history, nuclear armed-nations like the U.S. continued to test nuclear weapons in areas inhabited by ethnic minorities. Over the course of nearly two decades, the U.S. conducted over 100 nuclear tests in the Marshall Islands and surrounding areas, known as the Pacific Proving Grounds. Inhabitants of these islands were forcibly removed from their homes, and experienced both acute radiation poisoning and long-term health consequences from this exposure.

All the while, the U.S. government was actively conducting biological and radiation exposure tests on Marshall Islanders. To this day, the U.S. government refuses to provide Medicaid to those affected.

The uranium used in U.S. nuclear weapons was mined both by forced labor in Belgian-occupied Congo, as well as by Navajo miners in the U.S., who were neither informed of nor protected from the health effects of working in radioactive mines. To this day, it is extremely difficult or impossible for these victims to get compensation.

Colonialist and hegemonic thinking continues to guide nuclear weapons policy today, with the United States and other nuclear armed nations holding the threat of nuclear violence over majority non-white countries, rather than through diplomacy, international cooperation and an understanding of global interdependence.

Working class communities of color would likely bear the brunt of a nuclear attack against the U.S., as weapons are more often designed to be used against urban areas, which contain higher proportions of communities of color. And even though a nuclear war would ultimately be a global catastrophe, western countries retain enormous sway over who has nuclear weapons and how many.

To learn more about nuclear weapons’ ties to racism, read “[The Ultimate Coloniser: Challenging](#)

[Racism and White Supremacy in Nuclear Weapons Policy Making](#)¹⁰,” from BASIC.

NUCLEAR WEAPONS ARE AN ENVIRONMENTAL ISSUE

Since resource scarcity is the primary driver of political instability and conflict, climate change drastically increases the likelihood of a nuclear weapon being used. As regimes around the world attempt to grasp onto power in these unstable times, the temptation to develop nuclear weapons of their own in order to demonstrate their strength will only increase.

If even a small fraction of the world’s nuclear arsenals were to be used at the same time, the released soot and smoke would block sunlight from reaching the Earth’s surface for years, drastically reducing average global temperatures and [leading to famine](#)¹¹ that would likely kill billions of people worldwide. A full scale nuclear war between the U.S. and Russia could put enough soot in the upper atmosphere to [chill the ocean](#)¹², alter sea currents, and cause an ice age lasting at least a decade, killing off most, if not all, of humanity.

Scientists have also found that even a single nuclear explosion could trigger [ecological consequences](#)¹³ that reach far beyond where the bomb went off. The radiation would spread through the air and water, affecting plants and animals by causing habitat loss, contaminating food resources, and disrupting reproduction. All of this could lead to species extinctions that disrupt the food chain and reverberate through the ecosystem.

Even if a nuclear war doesn’t happen, current methods for handling radioactive waste from testing and producing nuclear weapons are incompatible with the realities of climate change. The Runit Dome was constructed in the Marshall Islands to store 31 million cubic feet of nuclear waste collected from America’s Cold War-era nuclear weapons tests. That waste will remain hazardous for tens of thousands of years. Sea-level rise induced by climate change threatens the low-elevation islands, causing many to fear that the radioactive waste will begin leaking into the surrounding waters.

No one country can tackle either climate change

or the threat of nuclear weapons alone. But both issues are existential threats to humanity, requiring us all to work together to mitigate the damage caused and prevent further harm.

To learn more, read “[Potential Environmental Effects of Nuclear War](#)¹⁴” by the National Academies of Sciences, Engineering, and Medicine.

NUCLEAR WEAPONS ARE A WOMEN'S RIGHTS ISSUE

When nuclear weapons are used or tested, women and girls are disproportionately harmed. Research has shown that women exposed to radiation are more likely to experience cancer, heart disease, and stroke, compared to men. Studies on the bombings of Hiroshima and Nagasaki suggest women may be up to twice as likely to develop and die from solid cancer due to ionizing radiation exposure.

After various nuclear accidents where radioactive material was released into the environment, mental health problems were more prevalent in women, and especially mothers. These psychological impacts can exacerbate existing patterns of misogyny.

Despite all this, women are conspicuously under-represented when it comes to making decisions about nuclear weapons. While awareness of this disproportionate harm is growing, there is still a lot more to learn. Research on radiation exposure has historically been based on White men, excluding most people on Earth. Recent studies aiming to correct this oversight suggest that the greater percentage of reproductive tissue in the female body may contribute to the greater rate of radiation harm.

To learn more about how women are uniquely harmed by nuclear weapons, read “[Gendered Impacts](#)¹⁵” by UNIDIR.

NUCLEAR WEAPONS ARE A CHILDREN'S SAFETY ISSUE

Nuclear weapons are designed to kill indiscriminately. This unfortunately means that, in a nuclear attack, innocent children will be among the many casualties.

Children are also more vulnerable to the impacts of a nuclear weapon for many reasons. Their bodies are smaller and frailer, making them more likely to die from the blast itself or to get trapped under collapsing rubble. Because children have thinner skin, they are also more susceptible to deadly burn injuries. In a growing body, cells are also growing and dividing more rapidly, increasing the odds of a child dying from radiation sickness or suffering from cancer and other diseases as a result of radiation exposure.

The children in Hiroshima and Nagasaki who survived the 1945 bombings often went on to lead difficult lives. They could be orphaned, carry psychological scars, and have a greater risk of developing cancer later in life.

In the Marshall Islands, where the United States tested powerful nuclear weapons during the Cold War, local children and infants became sick from the ionizing radiation and nuclear ash that rained down across the Islands. The fallout resembled snow and children, unaware of the danger, played in it and developed acute radiation sickness.

To learn more about how nuclear weapons are uniquely harmful to children, read “[The Impact of Nuclear Weapons on Children](#)¹⁶” by The International Campaign to Abolish Nuclear Weapons.

Links

HUMANITARIAN CONSEQUENCES AND SOCIAL JUSTICE

1. https://d3n8a8pro7vnm.cloudfront.net/oregonpsrorg/pages/24/attachments/original/1567113941/The_Unequal_Impacts_of_Nuclear_Weapons_factsheet_%28FINAL%29.pdf?1567113941
2. <https://www.ucs.org/resources/nuclear-frontline-communities>
3. <https://sgp.fas.org/crs/misc/R43956.pdf>
4. <https://thebulletin.org/2025/03/radiation-exposure-victims-fight-for-compensation-as-nuclear-weapons-funding-soars/>
5. <https://ploughshares.org/article/reca-passes-in-reconciliation-bill/>
6. https://2da8c03d-74f5-4bef-aa16-a6b9c4cb1631.filesusr.com/ugd/2b2028_8e221b26ode7468bb-cb67cbddc498dbe.pdf
7. https://www.nytimes.com/2020/07/15/us/trinity-test-anniversary.html?unlocked_article_code=1.Uk8.YAJN.fInJyu6GdEcy&smid=url-share
8. <https://www.sup.org/books/history/african-americans-against-bomb>
9. <https://www.armscontrol.org/act/2020-07/features/reflections-injustice-racism-and-bomb>
10. https://sgs.princeton.edu/sites/default/files/2023-10/The%20Ultimate%20Coloniser_2023.pdf
11. <https://www.ippnw.org/programs/nuclear-weapons-abolition/nuclear-famine-climate-effects-of-regional-nuclear-war>
12. <https://nautil.us/what-nuclear-war-means-for-the-ocean-286893/>
13. <https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2022.1099162/full>
14. <https://nap.nationalacademies.org/catalog/27515/potential-environmental-effects-of-nuclear-war>
15. <https://unidir.org/files/publication/pdfs/gendered-impacts-en-620.pdf>
16. <https://assets.nationbuilder.com/ican/pages/4076/attachments/original/1722507148/Impact-Nuclear-Weapons-Children-web.pdf?1722507148>



Scan for the latest
links and actions.

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.

This publication was made possible in part by a grant from Carnegie Corporation of New York. The statements made and views expressed are solely the responsibility of the author.