

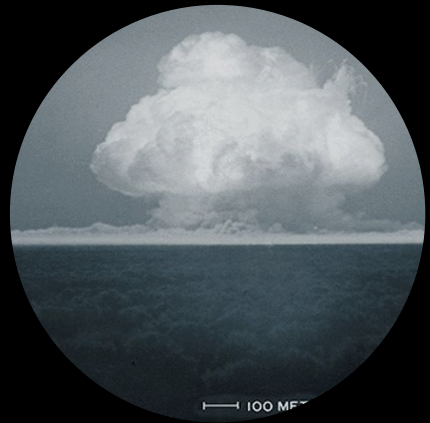


# World War II

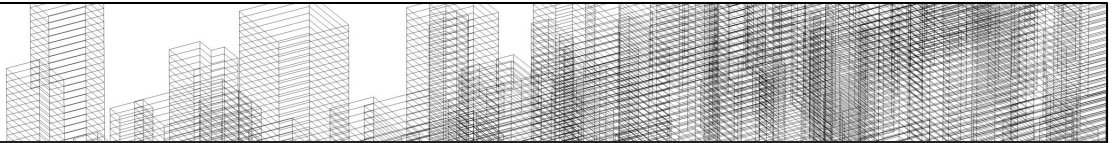
By: Sydney Grace Martin

Hello! My name is Sydney Grace Martin and today we have been discussing various aspects of the war. However, I will be discussing the after effects of the Atomic bomb.

# The Atomic Bomb's Effects



Transition to slide during intro statement  
Picture: The Trinity Test Explosion



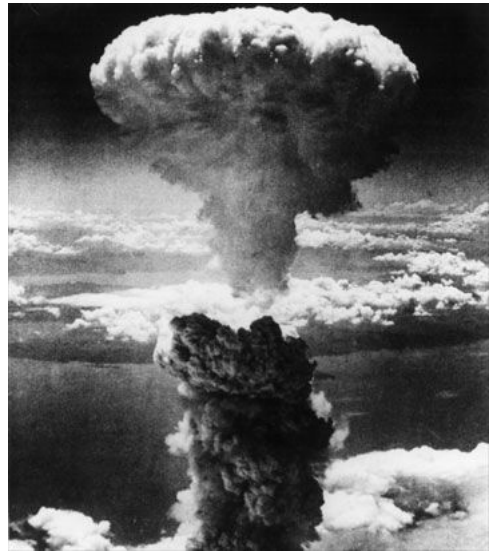
## **Some Brief Science of the Bomb**

- Nuclear Fission was discovered by Otto Hahn, Lise Meitner, and Fritz Strassman in a German Laboratory in 1938.
- The Bomb's mechanism comes from the splitting of the atoms.
- The American Atom bombs at Los Alamos.
- J. Robert Oppenheimer

So just for the sake of reminding the audience, I will start off by giving some history on the Atomic Bomb. Nuclear Fission was originally discovered in a lab in Berlin, Germany. The people credited for this discovery are Otto Hahn, Lise Meitner, and Fritz Strassman. Now nuclear weaponry gets its power from the splitting of one radioactive atom into lighter atoms. This split is what releases energy and causes the explosive power of the bomb (History.com Editors). American then decided to create an atomic bomb in Los Alamos. The head of the project was J. Robert Oppenheimer. Under him, America tests the Atomic bomb, then drops two bombs on Japan (History.com Editors).

# The Basic Effects

- Shock waves
- Thermal Radiation
- Initial Radiation
- Fallout



The effects of the Bomb can be split into two categories, long ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). term and short term. The short term effects happened immediately after the bomb was dropped. The long term effects I define as things that occurs a few days to many generations later. The first effect was a shock wave. According to a book called, *Effects of Nuclear Earth-Penetrator and Other Weapons*, "Nuclear explosions produce air-blast effects similar to those produced by conventional explosives. The shock wave can directly injure humans by rupturing eardrums or lungs or by hurling people at high speed, but most casualties occur because of collapsing structures and flying debris" ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). The book continues by talking about thermal radiation. "Thermal radiation. Unlike conventional explosions, a single nuclear explosion can generate an intense pulse of thermal radiation that can start fires and burn skin over large areas. In some cases, the fires ignited by the explosion can coalesce into a firestorm, preventing the escape of survivors. Though difficult to predict accurately, it is expected that thermal effects from a nuclear explosion would be the cause of significant casualties" ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). Then the book talks about initial radiation, "Initial radiation. Nuclear detonations release large amounts of neutron and gamma radiation. Relative to other effects, initial radiation is an important cause of casualties only for low-yield explosions (less than 10 kilotons)" ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). Finally, the book introduces the fallout. "Fallout. When a nuclear detonation occurs close to the ground surface, soil mixes with the highly radioactive fission products from the weapon. The debris is carried by the wind and falls back to Earth over a

period of minutes to hours" ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). So why is this important. We already know this from the documentary we watched in class. And yes we saw some of this, but I am going to attempt to show why these factors affected the health of the Japanese people and how doctors weren't prepared for this disaster.

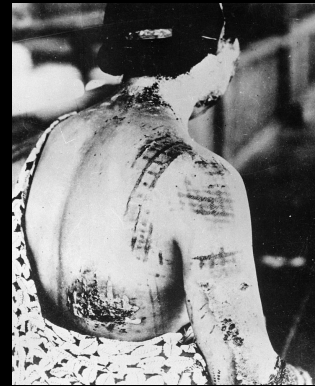
Picture: Hiroshima Mushroom Cloud

# Effects of Radiation

## On Unborn Babies



## On all people



Now radiation is something that we all know a little bit about. Radiation was a major health effect of the atomic bomb. On the Japanese people, radiation caused many serious problems. One of these occurred for the unborn babies. These babies experienced a spike in retardation due to the radiation their mothers were exposed to ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). For the adults, there was a significant spike in eye cataracts and cancer in those who were highly exposed to the radiation of the atomic bombs ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). Also, "Finally, there has been a recently confirmed finding that the Japanese survivors are experiencing a statistically significant increase in the occurrence of a number of noncancer diseases,6 including hypertension, myocardial infarction, thyroid disease, cataracts, chronic liver disease and cirrhosis, and, in females, uterine myoma" ("Read "Effects of Nuclear Earth-Penetrator and Other Weapons" at NAP.edu" 2005). So these were horrible diseases. And some of them, we can treat today. But what about then? That moves us into the next section of this topic.

Pictures: left: young child that was burned. Right: woman who was burned in the pattern of her clothing.

# Medicine at the time of the Bomb

The insufficiency in Hiroshima

*Hiroshima Ishi No Karute*

Translated means:

Hiroshima Stone

Medical Records



“...physicians who survived the atomic bombing worked hard to treat A-bomb victims with no regard to their own injuries. However, in a situation where many medical institutions were destroyed and there were not sufficient healthcare staff and pharmaceutical products left, they were unable to provide adequate medical treatment to A-bomb victims coming one after another. All that most physicians could do was to apply some zinc oxide oil to burns and injuries and to watch as they died, and they gradually became less sensitive to death. Looking back at that time, many physicians are still afflicted by a guilty conscience. Though they also experienced the bombing, they treated A-bomb victims. Nevertheless, they have suffered feelings of guilt” (*Hiroshima Ishi No Karute*). The stone medical records tell the stories of various physicians in the city directly after the bombing. One of these was Hiroshi Sawachika. He recounts some of the people he saw. “Suddenly, a middle-aged woman rushed into the office with her child in her arms without waiting for her turn, crying, “Help us, doctor!” She had already lost her sight, but she cried, “Please help my child at least!” When I separated her child from her, soothing her, the child was already dead. When I told her to leave her child to me and receive treatment, she looked relieved and fell down there, without coming back to life” (*Hiroshima Ishi No Karute* 7). What we have talked about with radiation are long term effects of the bomb. But as we saw in the documentary, there were burns, black rain, and other various life threatening ailments. In the book, the doctors recount that they quickly ran out supplies and therefore had to use deep frying oil for treatments, and drugs were very hard to come by (*Hiroshima Ishi No Karute*). I honestly did not read this entire book. I struggled to read the 27 pages I read. This is impossible for us to imagine. It was a living hell.

Picture: a makeshift hospital



## So What?

- Why is knowing about this important?
- Why did this affect the war?
- What did we do to help?

So I have briefly covered the facts that Japan did not have the medicine at the time to deal with the immediate effects of the bomb and I have also covered some of the long term effects of the bomb on health. So why is this important? First of all, as Americans who have been debating the bomb, we have to think of this side of the debate too. Why was this important in terms of the war? The dropping of the A-bomb ended the war, but also pushed the world into a new age of warfare. Therefore, it is important to understand the consequences of nuclear warfare. The bomb dropping yes urged Japan to surrender but if they had the medical means to treat more of the victims, perhaps there might have been more of a struggle. These are hypotheticals but important ones to discuss. The idea of a weapon like this shocked the world on the tail end of this war. After the War ended, America Occupied Japan in 1945 until 1952 (U.S. Department of State). We stayed in Japan and attempted to reform the government, and the economy (U.S. Department of State).

## Why does this matter to America?



Understand our  
Role

Understand the  
truth of the  
devastation

Understand  
Nuclear War

And yes, this presentation has been mostly about Japan, but it is very important for America too. The dropping of the bomb itself ended the war, but it did cause devastation. For World War 2, American caused a bloody end. The other aspect of this is that America is now a target. As we all know, history repeats itself. America will most likely receive similar devastation someday unfortunately. We need to be prepared that one day this may happen to us too. We need to continue to trust our physicians and grow in positive medical science, perhaps not science of destruction.

## Works Cited (MLA format)

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Thank you!