

PEACE CULTURE



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72nd Peace Memorial Ceremony

—In July 2017, when 122 United Nations members adopted the Treaty on the Prohibition of Nuclear Weapons, they demonstrated their unequivocal determination to achieve abolition.—

On August 6 of the 72nd year since the atomic bombing, the Peace Memorial Ceremony organized by the City of Hiroshima was held in the city's Peace Memorial Park. Approximately 50,000 people, including *hibakusha* and bereaved families, attended the Ceremony, praying for the repose of the souls of the victims and eternal peace.

The Ceremony commenced at 8am. First Hiroshima Mayor Kazumi Matsui and two representatives of the bereaved families dedicated three volumes of the Register of the Names of the Fallen Atomic Bomb Victims to the shrine in the Memorial Cenotaph for the Atomic Bomb Victims. Over the past year, 5,530 people's deaths had been confirmed and their names were recorded in the Register. This brings the total number of names recorded in the Register to 308,725 people, in 113 volumes.

This was followed by an address by the chairperson of Hiroshima City Council, and a dedication of flowers by various representatives. At 8:15am, the time that the bomb was dropped, a representative of the bereaved families and the children's representative rang the Peace Bell, and all participants observed a minute of silence.

Mayor Matsui then read out the Peace Declaration. In the Declaration, the Mayor stated that the use of nuclear weapons is an act that must never be committed by humankind, and that the possession of nuclear weapons is nothing more than the spending of huge amounts of money to endanger the whole of humanity. He appealed for as many people from around the world as possible to visit Hiroshima Peace Memorial Park, learn about what

happened under the mushroom cloud, understand the wish of the *hibakusha* for the abolition of nuclear weapons, and then spread such empathy throughout the world.

Mayor Matsui also made a strong request to the Japanese government to seriously work toward bridging the gap between nuclear-weapon and non-nuclear-weapon states, aiming to promote ratification of the Treaty on the Prohibition of Nuclear Weapons that was adopted at the United Nations in July 2017. He also called for the government to provide more compassionate support to the *hibakusha*, whose average age is now over 81, and to the many others who suffer physical and emotional effects of radiation, and to expand the designated "black rain areas".

Following the Peace Declaration, the children's representatives Naonari Takemasu and Nozomi Fukunaga read out the Commitment to Peace, where they spoke about the people who struggled to survive, never giving up as they worked towards recovery of the city, even while suffering from the deep emotional and physical scars caused by the bombing.

Next was a speech by Prime Minister Shinzo Abe. He stated that in order to create a world that is truly free of nuclear weapons it is necessary for both nuclear-weapon and non-nuclear-weapon states to work together, and said that the Japanese government will work with both sides to encourage their participation. He also said that the Japanese government will promote efforts to pass down the atomic bomb experience, beyond generations and national boundaries, and will make active contributions to ensure that the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) to be held in 2020, the 50th anniversary of the Treaty's entry into force, will be a meaningful conference.

At the Ceremony this year, a message from the United Nations Secretary-General Mr. António Guterres was read out for the first time in Japanese by Ms. Izumi Nakamitsu, the UN Under-Secretary-General and High Representative for Disarmament Affairs. When speaking of the global campaign to abolish nuclear weapons that lead to the adoption of the Treaty on the Prohibition of Nuclear Weapons, the Secretary-General highly praised Hiroshima's message of peace and the heroic efforts of the *hibakusha*, saying that they have made an important contribution by strongly reminding the world of the dev-



Mayor Matsui reads out the Peace Declaration

astating consequences of using nuclear weapons. He also stated that states possessing nuclear weapons have a special responsibility to take concrete and irreversible steps toward nuclear disarmament, and appealed for all states to intensify their own efforts to this end.

The Ceremony was attended by representatives of bereaved families from 36 prefectures and ambassadors and representatives from 80 nations and the European Union, including the nuclear-weapon-states the United States, the United Kingdom, France and Russia.

The full text of the Peace Declaration and Commitment to Peace are available on the City of Hiroshima web site (<http://www.city.hiroshima.lg.jp/english/>).

(General Affairs Division)

Memorial Gathering for Nagasaki Atomic Bomb Victims

Every year on August 9, the day that the atomic bomb was dropped on Nagasaki, this Foundation holds the Memorial Gathering for Nagasaki Atomic Bomb Victims, to express the condolences of Hiroshima, also hit by the atomic bomb, for those who lost their lives to the bomb in Nagasaki, and to renew our oath to achieve peace.

2017 Memorial Gathering was held in the Foyer on Floor B1 in the East Building of the Peace Memorial Museum. Around one hundred people attended, including atomic bomb survivors and visitors from Japan and overseas.

The Gathering opened with a speech by Mr. Kazuhiro Shiro, Executive Director of this Foundation, and this was followed by live television coverage of the Nagasaki Peace Memorial Ceremony. At 11:02am, the time that the atomic bomb was dropped on Nagasaki, participants observed a minute of silence.



Speech by Mr. Shiro

This was followed by a speech by Mr. Toshiyuki Mimaki, deputy director of the Hiroshima Prefectural Confederation of A-Bomb Sufferers' Organizations. The Gathering ended with a video of a Nagasaki atomic bomb witness testimony (witness: Mr. Shigeru Aoki).

(Peace and International Solidarity Promotion Division)

Attendance at the UN Conference to Negotiate Legally Binding Treaty Banning Nuclear Weapons

Representatives of Mayors for Peace attended the conferences to negotiate a treaty banning nuclear weapons held in New York in March, June and July 2017, where they appealed through constructive and open discussions for the realization of a effective legal ban on nuclear weapons.

Open letter issued

On March 14, prior to the first negotiation conference, Mayors for Peace issued an open letter to all United Nations member states. In this letter, Mayors for Peace expressed once again their support for this historic initiative that represent a significant and essential turning point for a world free of nuclear weapons, and also requested that all nations, including nuclear weapon states and those under the nuclear umbrella, participate actively in the conferences.

This open letter was also sent to the United Nations Secretary-General and the president of the negotiation conference and others, asking for support for the Mayors for Peace activities. A request was also sent to the Mayors for Peace member cities, asking that they broadly communicate the message of the open letter to national governments and the general public.

Attendance at the first Negotiation Conference

Mayors for Peace Secretary-General Mr. Kazuyosi Komizo (Chairperson of this Foundation) visited New York and other locations from March 24 to April 2.

During the session on March 29, Mr. Komizo made a speech on behalf of Mayors for Peace. In his speech, he stated that the legal ban of nuclear weapons would be the first crucial step towards achieving a world free of nuclear weapons. He expressed his support for the initiative, and made a recommendation about how to involve nuclear weapon states and those under the nuclear umbrella to form an effective treaty for the abolition of nuclear weapons. His recommendation received a certain level of appraisal from the participating UN member states and NGOs as an idea that could give the treaty future potential to enable participation in the treaty by nuclear weapon states, and this was a major achievement.

The United States government was absent from this conference, but it was attended by Mayor T.M. Cownie of Des Moines City, Iowa, which is a Mayors for Peace leader city in America, as well as two Executive Advisers of this Foundation in America. The three attended as members of the Mayors for Peace delegation. Mayor Cownie stated to the Japanese media that he would like to implement proactive measures to achieve the abolition of nuclear weapons, while at the same time expanding the Mayors for Peace network in the United States. This statement demonstrated the fact that Mayors for Peace members are working together beyond national borders and the different positions of members.

Mr. Komizo also met with the President of the con-



Mr. Komizo meets with Conference President Ms. Whyte (right)

ference, Ambassador Elayne Whyte Gómez of Costa Rica; Permanent Representative to the United Nations Office in Geneva Ambassador Thomas Hajnoczi of Austria, one of the countries promoting the treaty; Permanent Representative of Ireland to the United Nations Office in Geneva Ambassador Patricia O'Brien; Mr. Kim Won-Soo the UN Under Secretary General and High Representative for Disarmament Affairs, and others.

The open letter from Mayors for Peace and speech by Mr. Komizo were uploaded to the website as official UN documents, and Mayors for Peace materials were distributed at the conference venue. These all show that there is now greater awareness of Mayors for Peace activities, and this has resulted in closer ties with the United Nations and other organizations at the first Preparatory Committees for the 2020 Nuclear Non-Proliferation Treaty Review Conference and the second negotiation conference held in May.

On March 31, Mr. Komizo met with members of the Obama Foundation in Washington. He spoke about the future cooperation between the Hiroshima Peace Culture Foundation and the Obama Foundation, and made a request for former President Obama to give the keynote speech at the 9th Mayors for Peace General Conference held in August. Although former President Obama was not available for the keynote speech, the two organizations have similarities, including a common awareness of the importance of nurturing young people who will be the leaders of the future, and they had a discussion on future possibilities for cooperation. It was a meaningful meeting.

Attendance at the second Negotiation Conference

Mayors for Peace President Kazumi Matsui (Mayor of Hiroshima) and Mr. Komizo visited New York from June 13-18, and attended the second Negotiation Conference.

On June 15, the first day of the conference, Mayor Matsui had the opportunity to make a speech as the first speaker of the participating NGOs, prior to substantial discussions. In



Mayor Matsui giving a speech at the second Negotiation Conference

his speech, he stated that *hibakusha* have appealed for the abolition of nuclear weapons for many long years, and requested that a legal ban on nuclear weapons be achieved while they are still alive. He also expressed his hope that a draft treaty would be adopted during this session through constructive and open discussions by state governments. Government representatives from each country listened intently to his speech, and many applauded him when he finished, showing that Mayor Matsui's intentions were well communicated.

Mayor Matsui met with Conference President Ms. Whyte, Ambassador Hajnoczi, and other representatives of the United Nations and state governments during this trip, and properly communicated the wishes of *hibakusha* to all he met. Moreover, he stated that Mayors for Peace and its member cities, with cooperation of other civic organizations, would call for nuclear weapon states and those under the nuclear umbrella to join the treaty after a draft treaty had been adopted, and would create an environment that enable the world's policymakers to muster their courage and use their insight to take action for that, by raising awareness among civic society and cultivating broad global opinion toward the abolition of nuclear weapons.

Mayor Matsui also met with Ms. Izumi Nakamitsu, the United Nations Under Secretary General and High Representative for Disarmament Affairs. At that meeting, he stated that he had heard that she would be attending the Peace Memorial Ceremony and Mayors for Peace General Conference in August, and that it was very pleasing for *hibakusha* that the head of the United Nations' Office for Disarmament Affairs would be visiting the two cities hit by atomic bombs so quickly, in the year that she was appointed to the position. They also had a frank discussion about the negotiation conferences held this time. Ms. Nakamitsu's opinion that there should be a strong focus on dialogue to involve nuclear weapon states aligned with the thoughts of Mayors for Peace on the subject, and there are expectations that Mayors for Peace will be able to forge even stronger links with the United Nations moving forward.

Through the efforts of Mayor Cownie of Des Moines City, Mayor Matsui also met with New York Mayor Bill de Blasio, and requested that New York joins Mayors



New York Mayor de Blasio (left) and Mayor Matsui

for Peace. Mayor de Blasio stated that while he believes that it is extremely meaningful for mayors throughout the United States to share common policy issues and work together, he would like a little more time to consider possibly joining Mayors for Peace.

As of June 1, 210 cities in the United States are

members of Mayors for Peace. We would like to increase the number of member cities in the US by having influential cities such as New York and Washington DC become members.

Adoption of the Treaty on the Prohibition of Nuclear Weapons

On July 7, the final day of the second Negotiation Conference, the Treaty on the Prohibition of Nuclear Weapons that legally prohibits the use and possession of nuclear weapons was adopted. Mayors for Peace will continue to work together with various partners around the world to urge national policymakers to exercise bold leadership for the abolition of nuclear weapons, to encourage all nations, including nuclear weapon states and those under the nuclear umbrella, to become signatories to the treaty.

(Peace and International Solidarity Promotion Division)

Mayors for Peace send delegation for the Preparatory Committee for the 2020 Nuclear Non-Proliferation Treaty Review Conference

Mayors for Peace sent a delegation to the first Preparatory Committee for the 2020 Nuclear Non-Proliferation Treaty (NPT) Review Conference held in Vienna, Austria, in May 2017. They once again appealed for the United Nations and state policymakers to fulfil their duty under Article 6 of the NPT to earnestly undertake nuclear disarmament negotiations, and also asked for understanding and cooperation for Mayors for Peace activities. As side events, Mayors for Peace held an A-bomb poster exhibition and a youth forum at the venue.

May 2

Mayors for Peace Secretary-General Mr. Yasuyoshi Komizo (Chairperson of this Foundation) met with Dr. Lassina Zerbo, Executive Secretary of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), and explained activities by Mayors for Peace for the abolition of nuclear weapons. Dr. Zerbo expressed understanding for those activities, and stated that he would support them in the future.

May 3

Mr. Komizo met with Mr. Yukiya Amano, Director-General of the International Atomic Energy Agency (IAEA). They had a discussion about how Mayors for Peace and the IAEA should proceed with their activities at this time, in a situation of increased antagonism over the abolition of nuclear weapons.

After this, Mr. Komizo read out a speech by Hiroshima Mayor Kazumi Matsui, President of Mayors for Peace, at the NGO session of the Preparatory Committee. In the speech, Mayor Matsui emphasized once again the importance of the obligation stipulated in the Article 6 of



Mr. Komizo reads a speech by Mayor Matsui

the NPT to conduct sincere negotiations on nuclear disarmament. He also appealed to the world's leaders to deepen mutual understanding and take the lead to build a new security framework. This was followed by a speech by Nagasaki Mayor Tomihisa Taue, Vice-President of Mayors for Peace, who communicated a message to the nations of the world that rather than deciding from the start that a nuclear weapons convention is impossible, they should have the courage to participate in negotiations.

May 4

Mayor Taue and Mr. Komizo visited the Austrian Ministry of Foreign Affairs, and had a discussion with the Secretary-General for Foreign Affairs Michael Linhart. Dr. Linhart stated that he would like to contribute to the achievement of a world free of nuclear weapons.

May 5

The delegation met with Ambassador Mitsuru Kitano of the Permanent Mission of Japan to the International Organizations in Vienna. They said that they would like the Japanese government to properly support the wishes of *hibakusha*, and to provide a proactive proposal on the abolition of nuclear weapons.

After this, the delegation met with Mr. Henk Cor van der Kwast (Netherlands), the chair-delegate of the first session of the Preparatory Committee. At that meeting, representatives of the eight high school students who supported the activities of Mayors for Peace by participating in a drive for "No nuclear weapons from Hiroshima / petition campaign", and who were sent to the Preparatory Committee by Mayors for Peace, handed Mr. van der Kwast the certificate of signatures calling for a Nuclear Weapons Convention. Mr. van der Kwast



High school representatives handed the certificate of signatures to Mr. van der Kwast

conveyed his high expectations for the young generation.

After the petition was handed over, they held a discussion with Mr. van der Kwast, where Mayor Matsui expressed his hope for the next conference to negotiate a treaty banning nuclear weapons, saying that nuclear and non-nuclear weapons states must overcome their difference and make their utmost efforts for the success of the negotiations.

This was followed by a meeting with Austria's Ambassador for Disarmament Mr. Kuglitsch, who said that deterrence is no longer a valid security policy, and that he is hoping for support from civic society to encourage as many nations as possible to participate in the treaty banning nuclear weapons.

May 6

The Mayors for Peace Executive Cities' Meeting for Exchange of Views was held. Eight cities, mainly from Europe, had an active discussion on measures being taken by various nations for the abolition of nuclear weapons and initiatives that reflect the characteristics of each region. Through these discussions, participants reaffirmed that the importance of not only abolishing nuclear weapons, but also addressing issues that the member cities are facing such as terrorism, refugees and other regional issues, in order to achieve perpetual peace in the midst of increasing global tension. It was decided that they would discuss how leader cities can further enhance and strengthen regional initiatives at the Mayors for Peace General Conference to be held in Nagasaki in August.

After the discussion, Mayor Mitsui and Mr. Komizo met with Dr. Mohamed ElBaradei, Director General Emeritus of the International Atomic Energy Agency (IAEA). Dr. ElBaradei suggested that Mayors for Peace should try to send a message in particular to the young generation. In response, Mayor Matsui said that he intends to implement peace education measures targeting the next generation, looking fifty years ahead.

May 7

Discussions were held with Ms. Laura Rockwood, Executive Director and Ms. Angela Kane, Senior Fellow of the Vienna Center for Disarmament and Non-proliferation. They spoke about the current state of efforts aimed at the abolition of nuclear weapons.

May 8

Mayor Matsui met with Ms. Izumi Nakamitsu, United Nations Under Secretary General and High Representative for Disarmament Affairs, and handed her a letter to UN Secretary General Mr. António Guterres, requesting him to give the keynote speech at the 9th General Conference of the Mayor for Peace, to be held in Nagasaki in August. Ms. Nakamitsu said that she would proactively examine together with the Secretary General the possibility of attending the General Conference.

The delegation also observed a speech by Ms. Nakamitsu at the Preparatory Committee. In her speech, Ms. Nakamitsu said the threat of nuclear weapons is the biggest factor that worsens the world security situation and nuclear and non-nuclear nations should play their roles respectively to take forward nuclear disarmament.



Mayor Matsui hands the letter to Ms. Nakamitsu

Mayors for Peace Youth Forum was held as a side event. At the forum, high school students from Hiroshima joined youth delegations from Nagasaki, Volgograd (Russia) and other Mayors for Peace member cities to give presentations on their own activities and their thoughts on peace. The young people from Hiroshima and Nagasaki overcame the language barrier to give confident presentations. Young people from member cities who had visited Hiroshima up to 2016 as part of projects such as “HIROSHIMA and PEACE” and “International Youth Conference for Peace in the Future, Hiroshima”, participated through the online conference system or sent video messages.



Mayors for Peace Youth Forum

After this, Mayor Matsui met with Ambassador Patricia O'Brien, Permanent Mission of Ireland to the United Nations and other International Organizations at Geneva, and said that it will be important to deepen mutual understanding through dialogue, rather than make threats, to achieve a world free of nuclear weapons. Ambassador O'Brien said that Mayors for Peace are continuing with meaningful and attractive activities, and that she evaluates them very highly.

May 2–12

During the time when the Preparatory Conference was held, a Mayors for Peace Exhibition was held at the venue, the Vienna International Center. This enabled conference participants to further their understanding of the realities of the damage from the atomic bomb.

(Peace and International Solidarity Promotion Division)

Peace Memorial Museum East Building reopened on April 26, 2017

The Hiroshima Peace Memorial Museum has been carrying out the comprehensive renovations to convey the reality of the atomic bombing in more accurate ways.

On April 26, 2017, the renovated east building was opened.

In the new permanent exhibition, there are new display methods combining models and videos used, large devices with touch panels installed for information searches, displays of materials that can actually be touched, and more. As a result, visitors to the museum can search independently for things that they have questions about or are interested in.

New Viewing Route

The main building was closed for renovations at the same time as the east building was reopened. Along the new viewing route, visitors can take the new escalator from the 1st floor to the 3rd floor, and view the exhibits there, starting from Introductory Exhibit and The Dangers of Nuclear Weapons and then moving to the Hiroshima History exhibit on the 2nd floor.

Exhibits

◎Introductory Exhibit

When visitors go up the escalator there are photographs of lively shopping districts and children's smiling faces along the wall, telling a living story of the lifestyle of many people in Hiroshima before the atomic bombing. However, with the bombing such scenes completely changed.

There is a model of a street scene in the exhibition room, and above the model are projected videos of the atomic bombing using films and computer graphics made from aerial photographs taken after the bombing. The exhibit demonstrates how the city that many people were living in was devastated in an instant.



East building, 3rd floor: A Lost Way of Life
Projection of a video on to a model of an area of 2.5km radius from the hypocenter

◎A-bomb Survivor Video Testimony

Following the Introductory Exhibit is a visitor's lounge, and just behind that is the Video Theater where people can watch videos of atomic bomb testimonies.

There are new individual video viewing booths, and over 1,000 testimonies available for viewing.

◎The Dangers of Nuclear Weapons

This exhibit communicates the background from the development to the dropping of the atomic bomb; the menace of the bomb from the heat waves, blast and radiation; nuclear weapon development; and the reality of the damage inflicted by nuclear weapons. In addition to exhibits using photographs and videos, there are also exhibits that visitors can touch. There are models of Hiroshima Prefectural Industrial Promotion Hall and A-Bomb Dome, and displays of tiles before and after the bombing, and by actually touching the exhibits visitors can truly understand the damage from the atomic bombing. Using the large information search devices with touch panels, visitors can also search for topics they are interested in. There are 20 displays, which means that many people can use them at the same time. In the children's version, easy-to-understand expressions and questions are used to guide the children through the screens, to encourage them to take an interest.



East building, 3rd floor: The Dangers of Nuclear Weapons
Media table

◎Hiroshima History

This section shows the situation and way of life of people living in Hiroshima during the war, including Hiroshima's recovery from the damage of the bombing and the peace initiatives of Hiroshima City and its people. Photographs are projected onto the upper part of the wall showing people recovering from the devastation and taking steps toward reconstruction of the city. At the end of the exhibits is a projection of messages from Nobel Peace Prize winners who visited the museum. There are also large information search devices on the 2nd floor, and visitors can search for petitions against nu-



East building, 2nd floor: Hiroshima History
Exhibits

clear testing and the Peace Declaration documents.

August 6, 1945—Outline of Atomic Bomb Damage exhibit on the 1st floor of the east building

The 1st floor is the zone that is free of charge, and includes an information corner, museum shop and Special Exhibition rooms. As the main building is closed, in the Special Exhibition rooms are exhibits on the reality of the atomic bombing, including items moved from the main building such as a tricycle that was bombed with children and the objects left behind by three junior high school students. As the exhibits in the main building after the renovations are complete will be focused on showing the actual damage suffered by individuals, special efforts are being made to exhibit articles in a way that evokes the sight of individual people. As well as artifacts, there will also be portraits of the deceased on display as well as the thoughts of their families, to communicate the fact that the deceased were irreplaceable for their families.



East building, 1st floor: August 6, 1945—Outline of Atomic Bomb Damage Exhibits

Work on the main building

In line with the opening of the east building, renovation work began on the main building. The newly renovated building will be opened in 2018.

(Peace Memorial Museum Curatorial Division)

Renewal of Hiroshima Peace Memorial Museum Website

[new URL: <http://hpmuseum.jp/>]

Hiroshima Peace Memorial Museum has been communicating information online since August 1995.

In line with the renovations of the east building of the museum, museum's website had also been renewed to ensure that information is communicated as clearly as possible. The new website was released on April 26, 2017, the same day as the opening of the renovated east building.

On the new website, information on opening hours and current special exhibition is displayed clearly on the top page, so that visitors to the museum can find such information easily.

Information is also classified into four major categories

(Visiting, Exhibitions & Events, Learn, and About Us), so that people can quickly access the information they need. In the "Exhibitions & Events" section, there is information on the exhibits in the newly-renovated east building, and users can browse the actual photographs and commentary that are on display at the museum. In the "Learn" section is a collection of information useful for peace studies, including A-bomb testimony talks and loaning of materials for A-bomb exhibitions.

The new website has mobile-compatible pages so that users can browse the site easily even at a place of visit.

The website contents will be further enhanced in line with the completion of renovations of the whole museum, and we encourage people to visit the site.

(Peace Memorial Museum Outreach Division)

English version of lifestyle and cultural information magazine "HIRO CLUB NEWS"

The English version of "HIRO CLUB NEWS", the lifestyle and cultural information magazine, is full of current information on Hiroshima, including excerpts from Hiroshima City government's public relations paper "*Shimin To Shisei*" (Hiroshima citizen and municipal government), as well as information on the latest events and more. In addition to the English version, this magazine also publishes versions in Chinese, Portuguese and Spanish, in which some of the articles from the English version are translated into the respective languages.

The magazine is issued at the beginning of each month (the December and January issues are merged into one issue), and is distributed at the International Exchange Lounge on the 1st floor of the International Conference Center Hiroshima and other locations. It is also uploaded to the International Relations & Cooperation Division's homepage (<http://www.pcf.city.hiroshima.jp/ircd/english/>).

"City Office Notices", the English version of excerpts from "*Shimin To Shisei*", is issued in the middle of each month.

(International Relations & Cooperation Division)

Information on Reading Sessions of Atomic Bomb Stories

The A-bomb testimonies written by the *hibakusha* and their families contain records of the truth and emotions that could only be written by someone who directly experienced the bombing, and they are moving for the people who read them.

At the Hiroshima National Peace Memorial Hall for the Atomic Bomb Victims, Readings of Atomic Bomb Stories are held. The aim of these sessions is to share the memories and thoughts of the *hibakusha* with as many people as possible and pass on their stories to the next



A reading of an atomic bomb testimony

generation by reading and reciting A-bomb testimonies and poetry.

At the Reading sessions, first there is a visual presentation to give an overview of the damage from the bombing. After this, an A-bomb testimony and A-bomb poetry is then read by a volunteer reader. At the end, the participants recite A-bomb poetry themselves. By listening to the poetry recital while imagining the scenes at the time, and by reading aloud themselves, the participants can picture the damage from the bombing as if they were there themselves. The program usually runs for an hour, but the time and content can be changed.

There are also recitals in English for overseas visitors to the Memorial Hall. On the second Sunday and fourth Friday of every month, a regular recital in English is held once in the afternoon in the seminar room on floor B1 of the Memorial Hall. The session is open to anyone who would like to join.

The readings of atomic bomb stories started in the spring of 2005, and have continued for more than ten years now. People who have participated in the readings so far have left comments such as “I want to tell my family about the atomic bombing and peace”, and “I could imagine the scenes as I listened, and it moved me. I cried”.

(Peace Memorial Hall for the Atomic Bomb Victims)

Memoir of the A-Bombing

My A-bomb experience —To communicate the atomic bombing in Hiroshima—



by **Ikuko Sado**
Atomic Bomb Witness
for this Foundation

Experienced the bombing at grandmother's house

There were four in my family—my parents, myself (seven years old) and my sister (one year old), and we were living in Matsukawa Town.

On August 6, 1945, my father was working for the national railways, and my mother was working from early morning, mobilized as part of the regional volunteer unit involved in building demolition work (to create a fire belt to prevent the spread of fires resulting from attacks by incendiary bombs).

Because my mother went to work, my sister and I had been taken to the home of our grandmother (my father's mother) in Kami-Nagarekawa Town, and at 8:15 that morning were playing in the garden, where the mid-summer sun beat down brightly. Our grandmother's house was extremely close to the Hypocenter, only 870m away.

In the very instant of the flash (of light) and the boom (blast) I lost consciousness. When I came to, both my sister and I had been thrown a far distance away. I had burns on my hands and forehead. Because the sunlight was so harsh my sister had only been wearing a thin slip. She had major burns all over her body, and the skin of her inflamed hands and legs was hanging down.

The houses around us had all either been blown away by the blast in that instant, or if they were wooden houses, had started burning when they were hit by the heat wave, said to be 3000—5000 degrees Celsius. As far as we could see, we were surrounded by ash and soot and burning flames from the blast. The scene of sinister black flames burning was eerie, and could only be called a picture of hell.

To the Eastern Drill Ground

There was nowhere to remain amongst the blazing flames and smoke, so the three of us (my grandmother, my sister and I) fled to the Eastern Drill Ground. My grandmother carried my sister on her back, and the three of us tried to make our way to Enko-bridge to get to the Eastern Drill Ground, but the road was strewn with rubble, and we had to clear away the ash and soot to get through. On the side of the road were people suffering from serious burns. People shouting “Water! Give me water!” People in the river to get water, calling for help. People in the river who had died. It was truly like passing along the path to hell. There were people everywhere groaning and asking for water, maybe because their throats had been burned by the hot blast. Many of them had stuck their head in the fire prevention water tank and just died like that. Even today I sometimes still picture the tragic sight of them.

I do not know how many hours it took, but we finally somehow reached the Eastern Drill Ground. My sister had terrible burns. Her whole body—her shoulders, neck, chest, arms and legs—was completely red and burned, and the slip she was wearing was stained bright red with blood. Even though we asked for treatment by the military doctor it was never our turn, and I will never forget my frustration at that time.

At the Eastern Drill Ground lay many charred corpses, and the place was noisy with voices of people suffering from wounds and burns saying “It hurts, it hurts”, and wailing voices and the crying voices of those who could not contain their sadness at having lost a family member. The whole scene was as if all these people were being pulled alive down into hell.

Reunion with my mother

My mother had been working in the regional volun-

teer unit, and we were safely reunited with her when she came to the Eastern Drill Ground that afternoon. Even though she had been working at a site less than one kilometer from the hypocenter, fortunately she was apparently in the shadow of a large building, and was not injured at all even though many of the other people had died. When my mother saw my sister's serious burns she was saddened, saying "She was so well when I left this morning...", but all she could do was kindly pat my sister as she slept.

After that, my mother became worried that the house she had left in a rush that morning was on fire, and she went to check on it, leaving my grandmother and I to look after my sister. It was about two kilometers from the Eastern Drill Ground to our house, but because there was no public transportation and much confusion along the way with fires everywhere, it took my mother three hours to finally get there. When she arrived the house next door was burning, and our house too had also started to burn and it was difficult to get close to it. Even so my mother was determined—she poured water over her air raid hood and ran into the house, and managed to bring out only our first-aid kit, which was near the front door.

The whole of Hiroshima City was enveloped in huge fires. The fire-fighting system was not functioning, and my mother shed tears as she said goodbye to our house, engulfed in fierce flames before her very eyes.

Farewell to my one year old sister

The day after the bombing, when I awoke my sister was crying. When I looked closely, there were maggots festering in her burns, and I do not know whether it was because they were painful or itchy but she was thrashing her legs. I used the disposable chopsticks we received from the military doctor to remove all the maggots from her wounds, and maybe this made her feel better because she fell asleep.

By around the evening of the 8th, two days after the bombing, my sister's body became gradually colder, and she died. She had a beautiful expression on her face when she passed away.

At 5pm the next evening, we placed my sister's body on a wagon that we had borrowed from a soldier together with some firewood, carried her to a nearby park, and my mother and I cremated her there. The park was being

used as a temporary cremation site, and the soldiers poured oil and cremated one by one the dead bodies that were constantly brought there. The weather was hot so the corpses rotted quickly, and the odor was so bad that I nearly collapsed with suffocation. After the cremation, my mother and I put my sister's bones in a small can we learned about from a soldier, and brought her back to the Eastern Drill Ground.

People who still had a home could return home, but we had no home to return to. After that we ended up sleeping outside at the Eastern Drill Ground in a tent we borrowed.

To communicate the atomic bombing

As someone who has had first-hand experience of an atomic bomb, I will continue to appeal for the abolition of nuclear weapons and world peace. I want to leave my testimony to the younger generations in particular, to ensure that the memory of the tragedy of the atomic bombing is not forgotten.

Profile

Ikuko Sado

Born 1937. Experienced the atomic bombing at the age of 7, when a grade 2 student at a national elementary school. She was playing with her younger sister in the sandpit in the garden of her grandmother's house in Kami-Nagarekawa Town (currently near Hiroshima Mitsukoshi Department Store) 870m from the Hypocenter when the bomb hit.

The effects of radiation on the human body

(March 2017)



by Dr. Shinya Matsuura

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Introduction

Over seventy years have passed since the atomic bomb was dropped on Hiroshima on August 6, 1945. President Obama of the United States, the country that dropped the bomb, was the first sitting US president to visit Hiroshima, and the date of his visit, May 27, 2016, became an historical date for humankind. In his speech, Obama referred to the dual nature of science and technology. He spoke of the fact that progress in science and technology needs to be accompanied by social progress, and that if science and technology move ahead alone then they may bring destruction to humankind—he said that this is what the bombing of Hiroshima taught us. The most significant feature of the atomic bomb is that large amounts of radiation, which do not occur with regular bombs, are emitted on the surface of the ground, and this causes damage to people when they are exposed to it. In this article, I aim in particular to provide a commentary on the effects of radiation on the human body.



A-bomb Drawings by Survivors "Cremating deceased family members" by Satoshi Yoshimoto
Around August 6-10, 1945, the deceased were cremated by members of their own family at a park in Takasu. This kind of scene was witnessed for over a month.

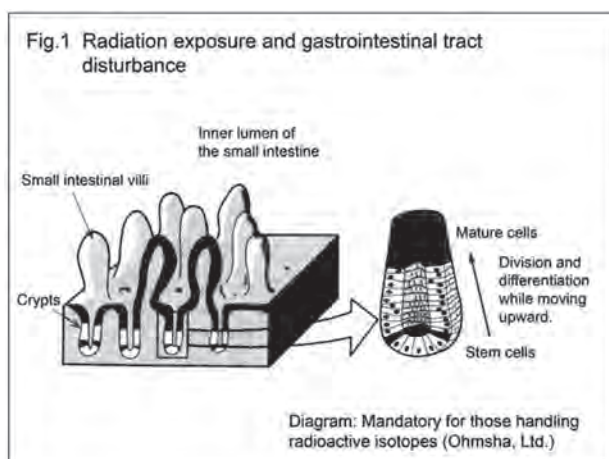
Acute damage and late-onset damage

Acute damage appears when a person has been exposed to a large amount of radiation. Acute damage is divided into four phases: the prodromal phase, the incubation phase, the onset phase and the recovery phase. Within 48 hours of being exposed to radiation, early symptoms appear via the paths of the autonomic nervous system, including whole body faintness, nausea and vomiting, and this period is known as the prodromal period. The higher the dosage of radiation, the faster the early symptoms appear, and with small dosages of radiation sometimes there are no clear symptoms. After this, a period with no symptoms other than weariness and fatigue appears—this is called the incubation period. This is because cells that have resistance to the radiation have survived and are functioning. From around the third week through to two months, there are symptoms such as hair loss, oral inflammation, and hematopoietic damage causing weakening of the immune system and a tendency to bleed, and gastrointestinal tract disturbance leading to vomiting and diarrhea. The combination of these symptoms then causes serious infections, vomiting of blood and melena. This period is known as the onset period.

Cells that have been exposed to radiation have an abnormality in the division of cells, which means that tissue or organs that have active cell division are particularly weak and highly sensitive to radiation. Some parts of tissue have particularly active cell division, and include stem cells. Stem cells are the cells that form the origin of cells that make up tissue, and when one stem cell divides, one of the two cells that is created remains as a stem cell, while the other cell becomes one of the tissue cells. Stem cells are particularly weak and sensitive to radiation.

The skin is highly sensitive to radiation. The surface of the skin is made up of three layers: the epidermis, the dermis, and the hypodermal tissue. Stem cells are found in the deepest part of the epidermis, and are damaged when the skin is exposed to radiation. Symptoms such as red patches, hair loss, blistering and skin ulcers will form depending on the radiation dosage. When the dosage is high, necrosis (dead skin) may also occur.

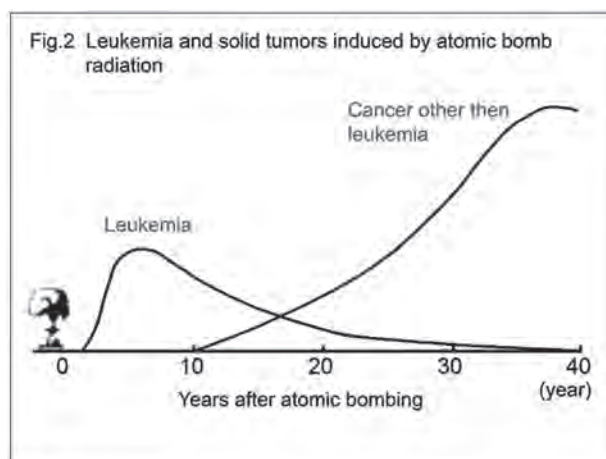
The small intestine is also highly sensitive to radiation. The inner lumen of the small intestine is covered in fine projections called small-intestinal villi. Between the small-intestinal villi are concave parts called crypts, and stem cells are found at the bottom of the crypts (Fig.1). Stem cells and the newly-born young cells divide, dif-



ferentiate into cells that control digestion absorption, and gradually move upwards to form villi. When the small intestine is exposed to large amounts of radiation, the stem cells and young cells that are in the crypts are damaged, and villi cannot be adequately formed. This leads to loss of the digestion and absorption function in the small intestine, causing diarrhea and melena.

Hematopoietic stem cells are also highly sensitive to radiation. Bone marrow has many hematopoietic stem cells, which make erythrocytes, white blood cells and platelets. When bone marrow is exposed to radiation, first the number of lymphocytes is reduced, then white blood cells and platelets are reduced. When lymphocytes are reduced, the person has weakened immunity against viruses and other diseases. When white blood cells are reduced, the person becomes more prone to infectious diseases including bacteria. When platelets are reduced, it becomes harder to stop bleeding. Three months after exposure to radiation, there are signs of recovery from radiation damage. This is known as the recovery period.

A while after the symptoms of acute damage have healed, late-onset disorders appear. A typical example is cancer. In the atomic bombing of Hiroshima and Nagasaki, there were many cases of leukemia that started after the incubation period of 6-7 years after the bombing (Fig.2). After leukemia peaked, there was an

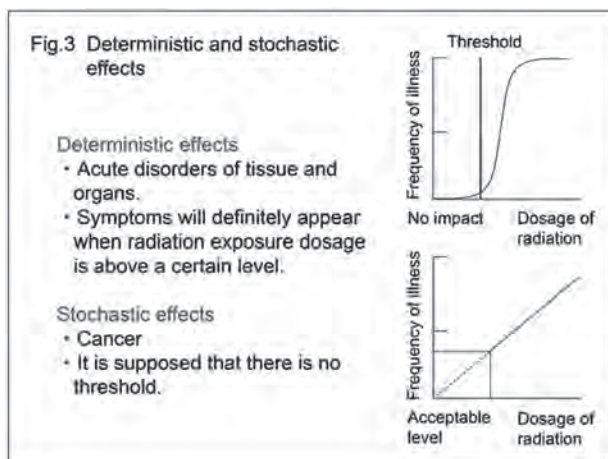


increase in solid tumors, depending on radiation dosage, with an incubation period of 10 – 40 years. Over seventy years have passed since the bombing, but even today it is well known that *hibakusha* have a high risk of developing solid tumors.

Deterministic effects and stochastic effects

The biological effects of radiation may be divided into the deterministic effects and the stochastic effects (Fig.3). Deterministic effects include radiation-caused cataracts, hematopoietic disorders and gastrointestinal tract disturbances. There is a threshold for deterministic effects, and there is no impact if the dosage of the radiation exposed to is below the threshold. Exposure to radiation above the threshold leads to illness. In a graph with the dosage of radiation on the horizontal axis and the frequency of illness on the vertical axis, the deterministic effects will form an S-curve as shown in the upper graph in Fig.3. This indicates that anyone who is exposed to radiation above a certain level will become ill.

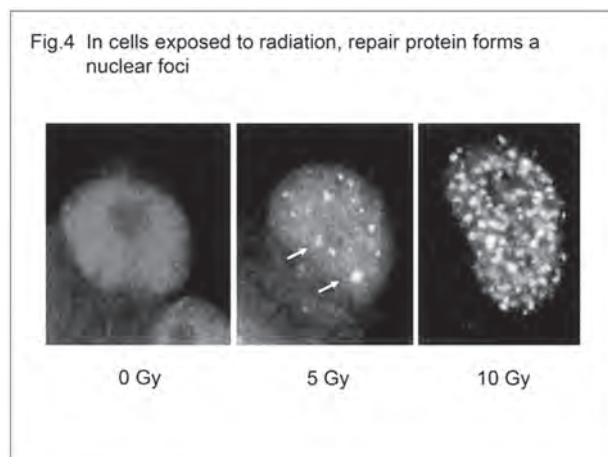
On the other hand, cancer, which is one of the typical late-onset illnesses, can be categorized as stochastic



effects. For deterministic effects, the risk of developing illness increases as the dosage of radiation increases. In the case of solid tumors, the frequency of development of symptoms increases in a straight line as indicated in the lower graph in Fig.3. When there is a threshold, the radiation dosage is controlled so that radiation damage does not occur. On the other hand, in terms of radiation protection, the International Commission on Radiological Protection (ICRP) believes that there is no threshold for cancer caused by radiation. This is known as the Linear Non-Threshold (LNT) hypothesis. The hypothesis states that even if the radiation dosage is low there is still a risk of cancer. Therefore, it is necessary to keep the radiation exposure below the acceptable level. However, as will be stated below, for the stochastic effects of cancer, there are still many issues, in particular at the low dosage level.

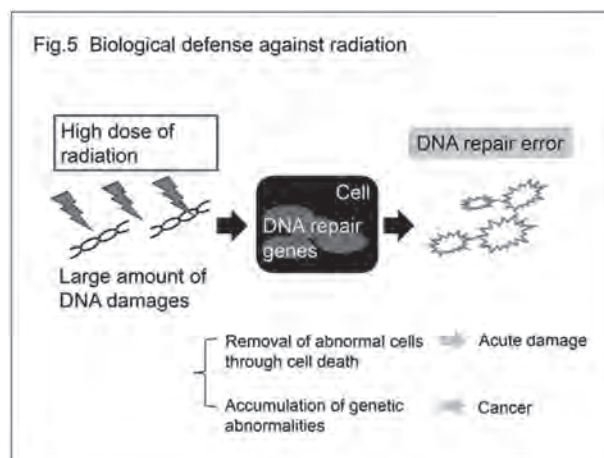
Radiation disorder mechanism

Messenger RNA is translated from genomic DNA in cells and transcribed into amino acid sequences. This is an essential process used to make the various types of protein that make up the human body. Radiation harms the various biomolecules that form the human body; in particular, when both strands of the DNA double helix are cut the cells are impacted. In response to this, cells have the ability to repair damaged DNA, which means that DNA damage caused by radiation is repaired to its original state by repair protein. Fig.4 shows nucleus of a



cell using immunofluorescent staining technique. It shows that in the cell exposed to radiation, the repair protein forms a yellow-green colored nuclear foci (on printed paper this appears as white. A color photograph

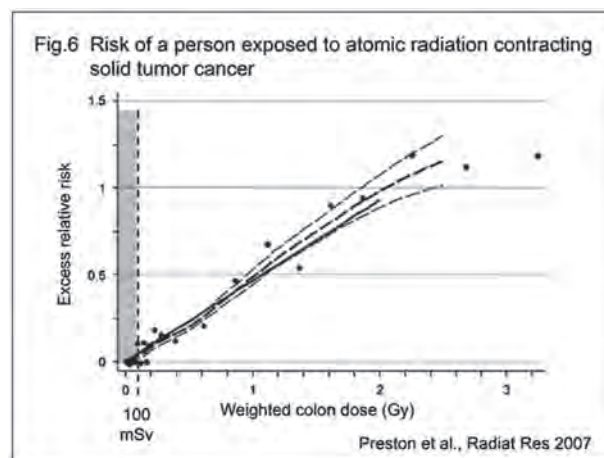
will be put in the online version). Within this foci, the damaged DNA will be repaired to its original state. DNA damage that was caused by a small dosage of radiation was repaired to its original state by the cells' repair protein and the cells are maintained normally. On the other hand, when the dosage of radiation is large, the DNA has multiple wounds, and as the multiple damages, and then DNA repair errors are accumulated (Fig.5). When



there is a build-up of DNA repair errors, the cells die. As a result, there is deterioration of the functioning of organs and tissue that are sensitive to radiation, and this causes acute damage. On the other hand, sometimes cells survive even while experiencing DNA repair errors. In such cases, there is an accumulation of abnormalities in the DNA genes, and these may become cancer cells. This is said to be the mechanism for late-onset cancer.

Effects of low dosages and low dose rates of radiation

As stated above, when there is exposure to a large amount of radiation all at once acute symptoms will definitely appear, and there is an increased risk of cancer later. On the other hand, there are different interpretations on the risk of cancer when radiation dose is lower than 100mSv (Fig.6). The ICRP proposes the LNT hy-



pothesis, which states that there is a health risk no matter how low the dosage of radiation is, and this is supported by many researchers as a protective model that stands on the side of safety in terms of protecting people. However, it has been controversial whether the actual impact would be linear. Some people believe that there would be no health risk at low dosages because of

DNA's repair ability, while the others believe that there would be a higher risk of cancer at low radiation dosages because damaged cells would also have an effect on surrounding cells that had not been exposed to radiation.

In the current approach to defense against radiation, risk to health is estimated based on the cumulative dosage of radiation to which a person has been exposed. However, we know that even if the dosage of radiation is the same, differences in the time that the person is exposed to the radiation lead to different biological effects. In other words, low dosage can be divided into two categories: low dosage at a high dose rate and low dosage at a low dose rate. A typical example of low dosage at a high dose rate is exposure to medical radiation experienced when using x-rays or CT scans. On the other hand, low dosage at a low dose rate refers to cases where a low dosage of radiation is experienced for a long period of time, which may then cumulate as a high dosage. Some examples of this are international plane flights and regions where naturally occurring radiation is high. The risk of contracting cancer from radiation has been estimated based on epidemiological surveys conducted in Hiroshima and Nagasaki, but there are different opinions as to whether the high dosage, ultra-high dose rate data should be applied uniformly to low dosages of radiation. Just as the extent of landslides differs depending on whether the rain is torrential or light, it is thought that there is also a possibility that biological effects differ depending on whether it is low dosage at a high dose rate or low dosage at a low dose rate. This is the one of the important issues that needs to be resolved in the future.

Even in large-scale research on atomic bomb epidemiology, the biological effect of low radiation dosage of less than 100mSv has not been clarified. For this reason, a breakthrough is needed on the assessment of the effect of low radiation dosage at low dose rates based on scientific evidence. The Hiroshima University Institute for Radiation Biology and Medicine, the Nagasaki University Atomic Bomb Disease Institute, and the Fukushima Medical University Fukushima Global Medical Science Center applied jointly to the Network-type Joint Usage/Research Center for Radiation Disaster Medical Science, and received certification from the Ministry of Education, Culture, Sports, Science and Technology. The three universities (Hiroshima University Institute for Radiation Biology and Medicine is the hub) started joint usage and joint research activities from April 2016, and are working on research topics together, including the effect and risk of low dosages of radiation.

In conclusion

As a university that operates in Hiroshima, a city hit by the atomic bomb, Hiroshima University has as its

mission the development of human resources who strive for peace. To this end, the university provides Hiroshima University students with opportunities to think about peace through its Peace Science Courses. I teach one of the classes in this course: War and Peace from the Viewpoint of Medicine. As a new initiative, Hiroshima University works together with Hiroshima Peace Culture Foundation to conduct academic surveys and research, and in December 2016, Hiroshima University President Mitsuo Ochi and Hiroshima Peace Culture Foundation Chairperson Yasuyoshi Komizo signed an agreement at Hiroshima University. According to this agreement, both organizations will work towards strengthening their ties, by enhancing peace education for Hiroshima University students, increasing the collections of A-bomb-related materials at the Hiroshima Peace Memorial Museum, conducting joint research and more. The agreement also states that the organizations will examine initiatives to share A-bombed artifacts held by Hiroshima Peace Culture Foundation and Hiroshima University Institute for Radiation Biology and Medicine, and jointly create digital and archived records of A-bombed artifacts that are severely deteriorated, aiming for a reevaluation of such artifacts. Hiroshima University Institute for Radiation Biology and Medicine would like to convey its desire for peace to the people of the world through such activities.

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Profile

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