

Live chat: The potential health hazards of radiation with Keisuke Iwamoto

Worried about the health effects of radiation exposure? Get answers during a live chat on Thursday from 1 to 2 p.m. (3 p.m. Central time, 4 p.m. Eastern) with Keisuke Iwamoto, on the faculty of the Division of Molecular and Cellular Oncology at UCLA.

Iwamoto is also an adjunct associate professor of experimental radiation oncology. His research interests include how the body responds to radiation exposure and how it can lead to cancer.

He also studies ways to improve the use of radiation for medical therapies. Iwamoto also analyzed donated tissue samples from Japanese atom bomb survivors. Email your questions in advance to chat moderator Jeannine Stein at jeannine.stein@latimes.com.

Thursday March 17, 2011

12:32 Jeannine Stein: Hi, everyone, and thanks for being part of our web chat today on the health effects of radiation exposure. We'll be back in about half an hour (1 p.m. Pacific time, 3 p.m. Central and 4 p.m. Eastern) with our guest, Keisuke Iwamoto, who is on the faculty of the Division of Molecular and Cellular Oncology at UCLA. In the meantime, please begin posting your questions and we'll be live soon!

Thursday March 17, 2011 12:32 Jeannine Stein

1:00 Jeannine Stein: Welcome to our live web chat on the health effects of radiation. Our guest is Keisuke Iwamoto, an adjunct associate professor of experimental radiation oncology. His research interests include how the body responds to radiation exposure and how it can lead to cancer. Welcome, Dr. Iwamoto, and thanks very much for being here today.

Thursday March 17, 2011 1:00 Jeannine Stein

1:01 kei: hi everyone, thanks for being here. i hope i can answer some of your questions.

Thursday March 17, 2011 1:01 kei

1:01 Jeannine Stein: I'll start off by asking something that's on a lot of people's minds: Radioactive isotopes are headed toward California after being released from the nuclear plant in Japan. We've been told that there's nothing to worry about, that the radiation levels are very low and not potentially harmful. Still, many people are worried. From what you know about this, is there any cause for alarm at this point?

Thursday March 17, 2011 1:01 Jeannine Stein

1:02 kei: there should be no alarm from the radiation because it will be so diluted and negligible by the time it gets here.

Thursday March 17, 2011 1:02 kei

1:02 [Comment From JohnJohn:]

Should I buy Iodine tablets?

Thursday March 17, 2011 1:02 John

1:04 kei: hi john, there should be no need to buy the tablets except for nutritional purposes; i.e., you are deficient in iodine

Thursday March 17, 2011 1:04 kei

1:04 Jeannine Stein: Would there be side effects if people did take them without needing them?

Thursday March 17, 2011 1:04 Jeannine Stein

1:06 kei: there are studies that excessive iodine can be unhealthy; for example there can be allergic reactions and in some cases it can actually cause goiter, which is ironic because deficiency is usually connected with goiter

Thursday March 17, 2011 1:06 kei

1:06 [Comment From Joyful DiligenceJoyful Diligence:]

What are 'harmful levels' of radiation in the short run and long-run? Can't even the slightest exposure to radiation require cancer in a person?

Thursday March 17, 2011 1:06 Joyful Diligence

1:08 kei: hi joyful, this is actually a complicated question defining dose as high and low does not really describe the real situations...

Thursday March 17, 2011 1:08 kei

1:09 kei: the range that we use in the radiation field generally runs from microsieverts to tens of sieverts; one sievert is a million microsieverts...

Thursday March 17, 2011 1:09 kei

1:09 kei: background, from the rocks around us , the radiation from space, etc. give us about 3000 microsieverts a year....

Thursday March 17, 2011 1:09 kei

1:10 kei: even pilots can get an extra 1000microsieverts a year from flying...

Thursday March 17, 2011 1:10 kei

1:11 Martin Beck (@latimesbeck): Note to readers: Thanks for all the great questions. We'll try to get to as many as possible.

Thursday March 17, 2011 1:11 Martin Beck (@latimesbeck)

1:12 kei: the amount of radiation from japan will be very much below the above doses i've just described, so the cancer risk will be negligible.

Thursday March 17, 2011 1:12 kei

1:13 Jeannine Stein: How does the amount of radiation people may get from Japan compare to what people may be exposed to every day from flying in airplanes, getting an X-ray, etc.?

Thursday March 17, 2011 1:13 Jeannine Stein

1:15 kei: a medical x-ray like from a CAT scan is around 1000microsieverts, and the amount you might expect from japan might be a thousand times less than that

Thursday March 17, 2011 1:15 kei

1:17 [Comment From ConcernedConcerned:]

I am in the very early stages of pregnancy -- 6 weeks -- living in Los Angeles. Do I need to take any precautions?

Thursday March 17, 2011 1:17 Concerned

1:18 [Comment From NiravNirav:]

Should pregnant woman and kids stay inside during the forecast weekend rain?. I am concerned that the radioactive materials will come down with rain.

Thursday March 17, 2011 1:18 Nirav

1:19 [Comment From elliotelliot:]

My wife is 10 weeks pregnant. Any extra steps she should be taking?

Thursday March 17, 2011 1:19 elliot

1:20 kei: the amount of radiation expected should be so negligible that there should be no effects on pregnant women and their children, in the womb or running around on the playground...

Thursday March 17, 2011 1:20 kei

1:22 kei: the risks from air pollution should be a greater one than that from any fallout from Japan.

Thursday March 17, 2011 1:22 kei

1:22 Jeannine Stein: Dr. Iwamoto, is there a precedent for radiation arriving here from bombs or earlier accidents, such as Chernobyl? Do you know how much reached here? Did anything happen in terms of people's health?

Thursday March 17, 2011 1:22 Jeannine Stein

1:24 kei: i do not know the exact numbers but i do know that the radiation from the 1986 accident was negligible from a health standpoint; i know of not evidence that that accident caused any increase in cancer in this country.

Thursday March 17, 2011 1:24 kei

1:25 [Comment From DimitriDimitri:]

I have several retired Japanese business associates in Tokyo how hard should I encourage them to hop a plane and come stay in out guest room till all this problem is resolved one way or another.

Thursday March 17, 2011 1:25 Dimitri

1:27 kei: the current reports for radiation levels in Tokyo suggest that they are still very low (in the microsieverts per hour range) so i doubt if there will be any health effects from the radiation...

Thursday March 17, 2011 1:27 kei

1:29 kei: they should be safe for the time being staying put in familiar surroundings

Thursday March 17, 2011 1:29 kei

1:30 [Comment From V. SwaminathanV. Swaminathan:]

When you say the radiation will be diluted and negligible, can you be more specific? How solid is the science on this issue?

Thursday March 17, 2011 1:30 V. Swaminathan

1:31 kei: hi V., we can do a rather simplistic calculation that gives the rough area that the radiation will be dispersed...

Thursday March 17, 2011 1:31 kei

1:33 kei: if we take the distance from japan to the us west coast to be 5000mi and say we take the distance from canada to mexico to be about 2000mi, we can use some simple geometry to figure out the area of the triangle starting from fukushima, japan...

Thursday March 17, 2011 1:33 kei

1:35 kei: so that's $5000 \times 2000 \times 0.5$ gives 5million square miles to disperse; if we assume the area of the power plant to be around a 100th of a square mile spread out to 5million square miles, that's a dilution of at least 500million....

Thursday March 17, 2011 1:35 kei

1:36 [Comment From CACA:]

Prof. Iwamoto, thanks for your time. It's great being able to ask these questions directly to an expert.

Thursday March 17, 2011 1:36 CA

1:37 kei: so even a high dose of 1000microsieverts at the plant could be around a microsievert.

Thursday March 17, 2011 1:37 kei

1:37 [Comment From Paul CPaul C:]

For purposes of assessing risk, how many microsieverts is fatal

Thursday March 17, 2011 1:37 Paul C

1:38 [Comment From Robert MRRobert M:]

How many microsieverts would be enough to make it wise to "do something"? And by doing something in that higher level case, what would we do? Stay indoors, take something, drill 50 ft into the earth and hide out for 100 years?

Thursday March 17, 2011 1:38 Robert M

1:41 kei: hi paul and robert, generally a whole body dose of approximately 6million microsieverts will cause death within a few weeks. there is really no clear cut dose boundary for these things but you might want to become concerned if the levels get to be on the order of tens of thousands of microsieverts.

Thursday March 17, 2011 1:41 kei

1:42 [Comment From AdamAdam:]

Are these amounts of radiation still negligible for longer periods of exposure? Is there a constant plume coming from Japan into the jetstream so that people will be exposed to these levels for many days/weeks? Just wondering

Thursday March 17, 2011 1:42 Adam

1:43 kei: hi adam, you bring up a good point, in addition to dose, dose rate is important; that is, how quickly one can attain a certain dose...

Thursday March 17, 2011 1:43 kei

1:45 kei: for example being exposed to 1000microsieverts over a day is different from being exposed to over a second, because the cells in our body can repair the damage caused by the radiation and if the damage is accrued over a longer time, it's easier for them to repair it...

Thursday March 17, 2011 1:45 kei

1:47 kei: also any radioactive iodine that might come has a relatively short half-life of a week so in a week the dose will go from negligible to half of that.

Thursday March 17, 2011 1:47 kei

1:48 [Comment From ChristyChristy:]

Are you saying that if radioactive material arrives on the West Coast on Friday, that cesium, strontium, and radioactive iodide will pose ZERO health risk? If small health risk, what is the risk? What about as they accumulate in our cells/DNA over time/

Thursday March 17, 2011 1:48 Christy

1:50 kei: hi christy, certainly no risk is zero but compared to every other forms of risk that we encounter everyday, the risk would be so close to zero that zero would be a better description.

Thursday March 17, 2011 1:50 kei

1:51 [Comment From DickDick:]

How about pets, particularly dogs that need to go outside, and particularly a young puppy? I realize you're not a vet, but could a puppy nosing around the beach here get enough radioactive iodine to be a concern? Given their greater sensitivity and their noses on the ground, should young pups be kept inside until the levels are clear?

Thursday March 17, 2011 1:51 Dick

1:53 Jeannine Stein: Dr. Iwamoto has graciously agreed to stay on a little past 2 p.m. Pacific Time to continue to answer questions, so please stay tuned!

Thursday March 17, 2011 1:53 Jeannine Stein

1:54 kei: hi dick, yes your right i'm not a vet but there should be no radiological health effects judging by what we predict to be the small amount of any radioactivity coming from japan.

Thursday March 17, 2011 1:54 kei

1:55 [Comment From WayneWayne:]

I have a vacation in Hawaii in 2 weeks. Should I make other plans given that the reactors are still leaking radiation?

Thursday March 17, 2011 1:55 Wayne

1:55 [Comment From LiliaLilia:]

I am participating in LA marathon on Sunday and will be outside for over 8 hours walking in the rain. Shall I be concerned about radiation exposure during that time?

Thursday March 17, 2011 1:55 Lilia

1:55 [Comment From Steve HansonSteve Hanson:]

Is it safe for young children to play outside this weekend?

Thursday March 17, 2011 1:55 Steve Hanson

1:59 kei: there will be more radiation from our surroundings than what we expect from outdoor activities; just a sort of comparison, the uv light from the sun will produce more dna damage than any damage from radiation from japan.

Thursday March 17, 2011 1:59 kei

2:01 Jeannine Stein: We have another question from a reader: "Since we will have no bad affects here, why not talk about what the people in Japan working at the power plant are facing?"

Dr. Iwamoto, can you talk about what levels of exposure the nuclear power plant workers might be facing, and what their health risks may be?

Thursday March 17, 2011 2:01 Jeannine Stein

2:03 kei: my heart goes out to those dedicated worker and other members of the rescue team; some may be exposed to hundreds of thousands of microsieverts or greater depending on the length of time they are exposed and their positions from the source of radiation...

Thursday March 17, 2011 2:03 kei

2:04 kei: at the lower end of the hundreds of thousands of microsieveverts, they may just experience some temporary low white blood counts...

Thursday March 17, 2011 2:04 kei

2:05 kei: at the millions of microsieveverts some may feel nausea and their risk for cancer may go up in the coming decades...

Thursday March 17, 2011 2:05 kei

2:07 kei: if anyone is unfortunate enough to be exposed to tens of millions of microsieveverts, hope to save them may be small.

Thursday March 17, 2011 2:07 kei

2:07 [Comment From GuestGuest:]

kei, have you started to do anything different to protect your health since the news began?

Thursday March 17, 2011 2:07 Guest

2:09 kei: no i'm not doing anything different; we have to keep enjoying and being thankful for the life that we have here in california. thanks all of your for your comments and questions.

Thursday March 17, 2011 2:09 kei

2:10 Jeannine Stein: I'm afraid that's all the time we have today. Thanks, everyone, for being part of our chat. Dr. Iwamoto, thank you very much for being such a great guest and for taking the time to answer our readers' questions, we appreciate it.

Thursday March 17, 2011 2:10 Jeannine Stein

2:10 kei: thank you!

Thursday March 17, 2011 2:10 kei

2:10 Jeannine Stein: This chat will be available as a transcript soon on our site. Please check back to this chat in a bit to get the link.

Thursday March 17, 2011 2:10 Jeannine Stein

2:13 Jeannine Stein: Here's the link to the transcript: <http://lat.ms/dLTs70>

Thanks again, everyone!

Thursday March 17, 2011 2:13 Jeannine Stein

2:13

Writer: Kelsey Ramos