

Dear colleagues,

Our WHO RAD Team have been deeply involved in the response to the Fukushima nuclear accident. Our thoughts have been close to our colleagues in Japan , who have been working hard to face this challenge. We send to them our best regards.

We still are very much involved in this emergency, and this was the reason why we couldn't send these updates during a long period of time. But today we wish to inform you that at its meeting in Seoul in April 2011 the International Commission on Radiological Protection (ICRP) approved a Statement on Tissue Reactions (see attached).

The intention is to publish this Statement in the Annals of the ICRP together with the report "Early and late effects of radiation in normal tissues and organs: threshold doses for tissue reactions and other non-cancer effects of radiation in a radiation protection context"

<http://www.icrp.org/docs/Tissue%20Reactions%20Report%20Draft%20for%20Consultation.pdf>

, once consultation comments on the latter have been taken into account (more information at the ICRP website <http://www.icrp.org/page.asp?id=116>).

For occupational exposure in planned exposure situations the ICRP now recommends an equivalent dose limit for the lens of the eye of 20 mSv in a year, averaged over defined periods of 5 years, with no single year exceeding 50 mSv. This is a big change compared to the previous value (150 mSv). The statement also makes recommendation about threshold levels for cardiovascular diseases.

This will imply a new challenge for radiation protection in health care settings, in particular regarding interventional radiology where several papers have been recently published about the incidence of lens opacities in health care workers involved in fluoroscopy guided interventional procedures.

It would be therefore timely to also announce you the 5th Congress of Asian Society of Cardiovascular Imaging (ASCI 2011) to be held on 17-19 June 2011 in Hong Kong China . A Symposium on Radiation Protection will be held the first day , which will provide an opportunity to address this topic More information at <http://www.asci2011.org/welcome.php>

Best regards

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Statement on Tissue Reactions

Approved by the Commission on April 21, 2011

(1) The Commission issued new recommendations on radiological protection in 2007 (ICRP, 2007), which formally replaced the Commission's 1990 Recommendations (ICRP, 1991a). The revised recommendations included consideration of the detriment arising from non-cancer effects of radiation on health. These effects, previously called deterministic effects, are now referred to as tissue reactions because it is increasingly recognised that some of these effects are not determined solely at the time of irradiation but can be modified after radiation exposure. Previously, the Commission had reviewed various aspects of non-cancer health effects of low linear-energy-transfer (LET) ionising radiation in *Publication 41* (ICRP, 1984), high LET radiation in *Publication 58* (ICRP, 1990), the skin in *Publication 59* (ICRP, 1991b), and the skin and the eye in *Publication 85* (ICRP, 2000).

(2) The Commission has now reviewed recent epidemiological evidence suggesting that there are some tissue reaction effects, particularly those with very late manifestation, where threshold doses are or might be lower than previously considered. For the lens of the eye, the threshold in absorbed dose is now considered to be 0.5 Gy.

(3) For occupational exposure in planned exposure situations the Commission now recommends an equivalent dose limit for the lens of the eye of 20 mSv in a year, averaged over defined periods of 5 years, with no single year exceeding 50 mSv.

(4) Although uncertainty remains, medical practitioners should be made aware that the absorbed dose threshold for circulatory disease may be as low as 0.5 Gy to the heart or brain. Doses to patients of this magnitude could be reached during some complex interventional procedures, and therefore particular emphasis should be placed on optimisation in these circumstances.

(5) The Commission continues to recommend that optimisation of protection be applied in all exposure situations and for all categories of exposure. With the recent evidence, the Commission further emphasises that protection should be optimised not only for whole body exposures, but also for exposures to specific tissues, particularly the lens of the eye, and to the heart and the cerebrovascular system.

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