International Commission on Radiological Protection

Committee 1 (C1): Radiation Effects

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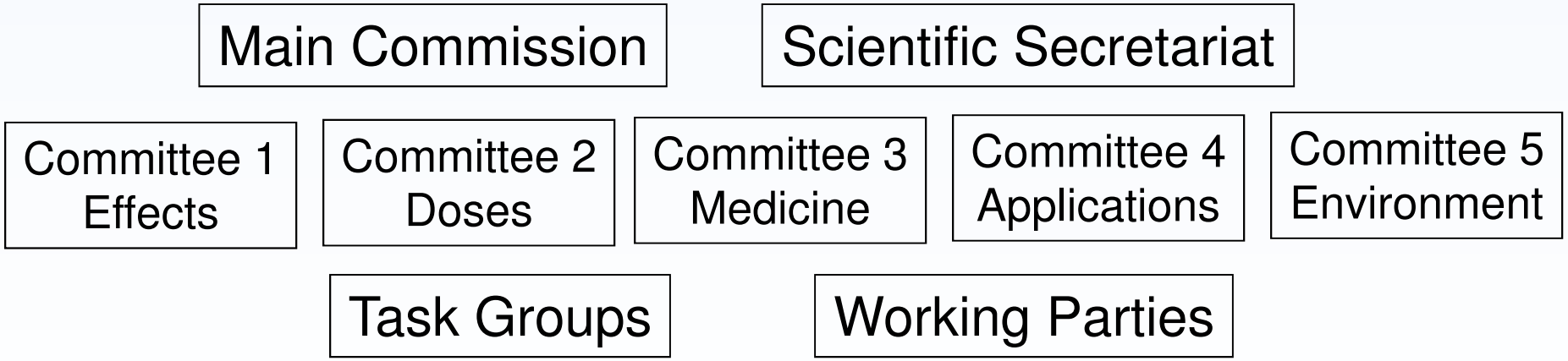
ICRP Mission

Advance for the public benefit the science of radiological protection by providing recommendations and guidance on all aspects of protection against ionizing radiation.

ICRP Structure



C1 considers the risk of induction of cancer and heritable disease (stochastic effects) together with the underlying mechanisms of radiation action

C1 also considers the risks, severity and mechanisms of induction of tissue / organ damage and developmental defects (tissue reactions; deterministic effects)

Fortunate to have a congenial and interactive committee

C1 Responsibilities & Activity

Continue to monitor data from the atomic bomb survivors (LSS) for both stochastic and deterministic effects, particularly for incidence.

Consider the use of biologically-based dose-response models for assessing effects at low doses (<100 mSv).

Be aware of international programs: US (NCRP), EU, Japan, Korea, India etc.

C1 Responsibilities / Activity

Follow dosimetry and exposure discussions, DREF, DDREF.

Advances in radiation induced damage recognition, DNA repair, and impact of epigenetic effects.

Long term inflammatory responses and non-cancer effects (CVD, CNS)

Dialogue on heritable effects

Keep abreast of technology

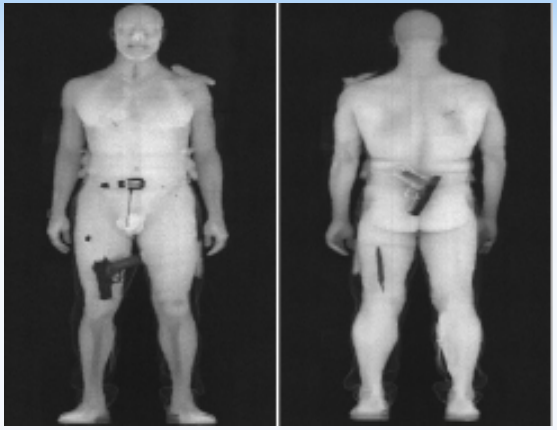
Emphasis on low dose, low dose rate

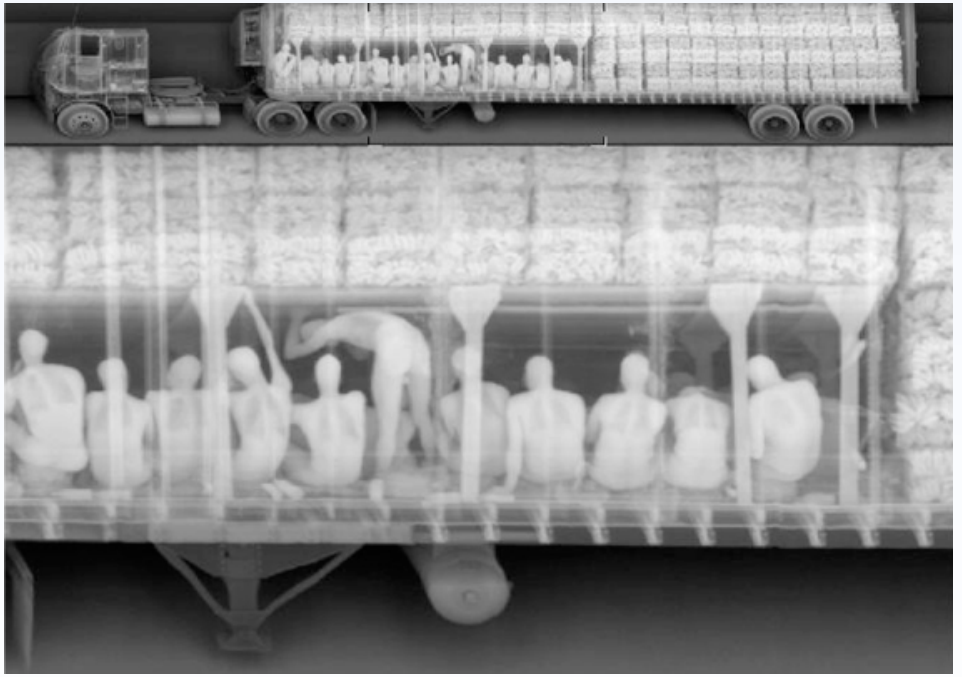
CT – the biggest contributor to low dose radiation exposure

Approximately 80 million in the USA this year

X-ray Backscatter:

A powerful detection tool





TG 75: Stem Cell Radiobiology

Chair: Ohtsura Niwa

Established to review current state of knowledge of stem cell radiobiology and potential impacts on cancer risk.

An increase in knowledge of stem cell biology but little new information on radiation effects on stem cells.

Emphasis is on stem cell radiobiology in relation to carcinogenic radiation risk.

Document has been reviewed and approved by the Main Commission. Currently *in press* as Publication 131.

TG 75: Stem Cell Radiobiology

ICRP acknowledges the leadership of chair O. Niwa, and their hardworking committee: J.H. Hendry, M.H.Barcellos-Hoff, R.K. Golbus, J.D., Harrison, P. Jacob, M.T. Martin, T.M. Seed., J.W. Shay, M.D. Story, K. Suzuki and S. Yamashita, plus the numerous consultants, readers and reviewers who all had a significant impact on this document.

TG 64: Cancer Risk from Alpha Emitters

Chair: Margot Tirmarche, (France).

Originally this TG was responsible for ICRP Publication 115. This is now being expanded to report on potential risks from plutonium, uranium, thorotrast and radium.

Project delayed due to closure of West Lakes (UK) awaiting joint analysis of Sellafield and Mayak workers. Now back on schedule.

The dosimetry contributions of C2 essential

TG 91: Radiation Risk Inference at Low-dose and Low-dose Rate Exposure for Radiological Protection Purposes

Chair: Werner Ruehm (Germany)

Members

Tamara Azizova, C1 (Southern Urals)
Simon Bouffler, C1 (UK)
Roy Shore (former C1, Japan/USA)
Gayle Woloschak (USA)

Corresponding members

Bernd Grosche (Germany), Linda Walsh (Germany)
Michiaki Kai, C4 (Japan), Kaz Sakai, C5 (Japan)
Kotaro Ozasa (Japan), Mark Little (USA)
Quanfu Sun, C1 (China)

Consultant

Abel Gonzalez (Argentina)

TG 91: Radiation Risk Inference at Low-dose and Low-dose Rate Exposure for Radiological Protection Purposes

The Task Group will review the estimation of risk coefficients and recommend:

1. Whether to continue to estimate risk at low doses by assessing the slope of the dose response at high doses and then applying a DDREF reduction factor.

1.Whether such coefficients are applicable to acute, protracted and prolonged exposure or need correction.

1.Separate dose (LDEF) and dose rate (DREF)

In conjunction with TG 91 there is the Working Group on Circulatory Disease Detriment

Chair Nobuhiko Ban (Japan)

Goal – determination of circulatory disease detriment.

1.Detriment calculated separately for heart disease and stroke

1.Analysis of the meta-analysis from the A-bomb survivors

1.Focus on nominal risk estimates, then adjust for severity

No formal meetings, teleconferences and conference meetings.

Task Group 92: Terminology & Definitions

Chair: Wolfgang Doerr (Austria)

Members

Jai-ki Lee, Main Commission (Korea)
Dominique Laurier, C1 (France)
Frank Wissman, C2 (Germany)
Pedro Ortiz Lopez, C3 (Austria)
Anne Nisbet, C4 (UK)
Almudena Real, C5 (Spain)

Corresponding member

Derek Delves (Austria), Ted Lazo (France)
Cecile Ronckers (Netherlands), Michiya Sasaki (Japan)

Consultant

Abel J. Gonzalez (Argentina)

Task Group 92: Terminology & Definitions

(under the auspices of the Main Commission)

Over many years the terminology and definitions of specific terms used in ICRP publications have evolved, and in some instances have been used inconsistently. This Task Group will review the terminology and definitions from Publication 103 onward and update/revise as required.

1. Definition unequivocal
2. Definition clear, but requires harmonization
3. Definition unclear/missing
4. Definitions conflictive.

It is envisaged that the updated terminology and definitions will be a web-based resource for future use.

2016 C1 meeting

Chennai, India. In conjunction with the "International Conference on Radiation Biology" (ICRB-2016) and "14th Biennial Meeting of Indian Society for Radiation Biology". On or about Nov. 11-13.

Co hosts

Preetha Rajaraman

Mansoor Ahmed & Pat Prassanna (NIH/NCI)