

## EDITORIAL

Even now, almost two years since the outbreak of the war in Ukraine, the situation in Europe and in Switzerland is still fraught. Even though a certain acclimatisation effect has become noticeable and the media has since turned its attention to other issues, there are continued fears of the threat posed by a nuclear accident, and development of the Swiss radiation accident network is as important as ever.

As part of the existing collaboration between the University Hospital Zurich (USZ) and the Federal Office of Public Health (FOPH), the Swiss Federal Nuclear Safety Inspectorate ENSI and the Swiss National Accident Insurance Fund Suva, efforts to improve understanding and awareness of this topic were continued last year. Two network events were held in 2023 at which we addressed current issues, such as the use and effectiveness of iodine tablets, their redistribution in the autumn of 2023, and the impact of nuclear weapons.

The network engages with contacts from key domestic and international organisations, such as the Coordinated Medical Services CMS and WHO's REMPAN (Radiation Emergency Medical Preparedness and Assistance Network). For example, at the network event in the autumn, there was a presentation on the restructuring of disaster medicine at the CMS. In addition, an interesting discussion took place with representatives of the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection on the policy regarding medical treatment and prevention in the event of radiation emergencies in Germany. This policy serves as a model for the Swiss national treatment policy, which is being drawn up within

the framework of the collaboration with the USZ. The dialogue also highlighted the importance of networking, not only of hospitals in Switzerland, but of all players in the healthcare sector, such as the CMS, and the cantonal directors of health, for example. These stakeholder groups will therefore be considered a key part of the network going forward and further collaboration will be sought.



In this issue of the Network Newsletter, you can read the second part of the series of introductions to key people in the network, which features the FOPH representatives, Nina Mosimann and Daniel Storch. You can also read more about the following topics:

- **Redistribution of iodine tablets**
- **Antidotes to radionuclides**
- **17th WHO REMPAN Meeting in Seoul**
- **German Radiation Emergency Medicine Handbook**

## VORSTELLUNG

### Daniel Storch and Nina Mosimann, FOPH



The Radiological Risks Section is part of the Radiation Protection Division, which falls under the Health Protection Directorate at the Federal Office of Public Health FOPH. The section's tasks include preparedness and response for nuclear or radiological emergencies. This covers areas such as supervising the redistribution of iodine tablets as well as preparing concrete measures to protect public health in the event of an incident. The section also deals with other to-

pics, such as radon protection and radium-contaminated sites.

When the Radiological Protection Ordinance was last revised in 2017, the FOPH was mandated to ensure the maintenance of knowledge on the treatment of severely irradiated persons (Art. 135, para. 5 RPO). For this reason, together with Suva and the Swiss Federal Nuclear Safety Inspectorate (ENSI), the FOPH has worked closely with the University Hospital Zurich (USZ) since 2019.

Daniel Storch (Section head) and Nina Mosimann are your two contacts for any questions relating to the partnership with the USZ and the work on maintaining knowledge on treating people affected by radiation accidents. If you would like to get in touch or have any questions, you can contact us at [daniel.storch@bag.admin.ch](mailto:daniel.storch@bag.admin.ch) and [nina.mosimann@bag.admin.ch](mailto:nina.mosimann@bag.admin.ch)

## NEW IODINE TABLETS FOR SWITZERLAND



A campaign to distribute iodine tablets by post as a precautionary measure to people living within 50 km of the active Swiss nuclear power plants Beznau 1 + 2, Gösgen and Leibstadt started on 16 October 2023. It was completed on 19 November.

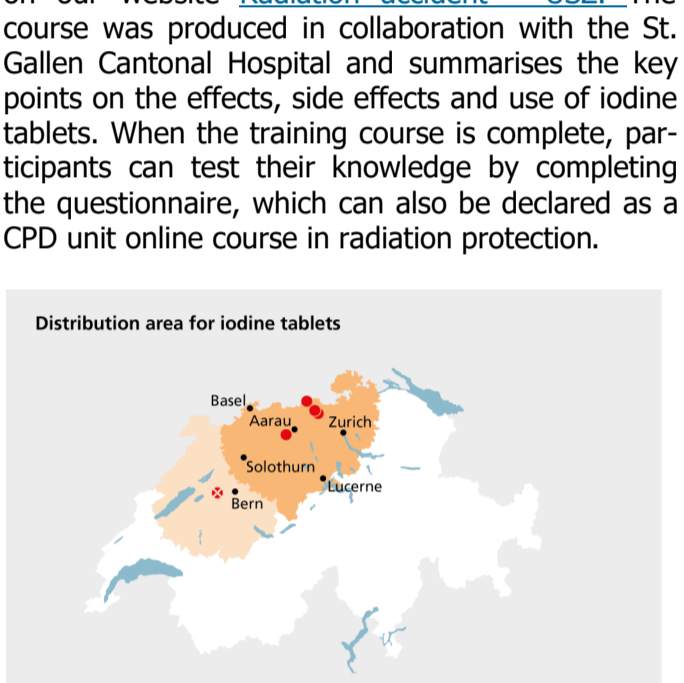
In the first quarter of 2024, iodine tablets will also be distributed to workplaces (e.g. commerce, industry, companies) and public facilities (e.g. schools, daycare centres, hospitals, authorities) in the distribution area.

This redistribution is now necessary as the iodine tablets distributed in 2014 will soon reach their expiry date.

The public has already been informed about this campaign in the media. Further information is also available on the website of the Federal Office of Public Health [Redistribution of iodine tablets \(admin.ch\)](https://www.admin.ch) and the Swiss Iodine Tablets Office ([website | Potassium iodide \(jodtabletten.ch\)](https://www.potassiumiodide.ch)).

paings raise many questions, both from healthy people and from patients. The CPR has therefore published **additional specialist information on iodine tablets** for medical professionals.

To coincide with the start of the iodine tablet distribution campaign, we have launched an **online course** on the topic of **Radiation protection – iodine tablets and antidotes to radionuclides** on our website [Radiation accident – USZ](https://www.usz.ch). The course was produced in collaboration with the St. Gallen Cantonal Hospital and summarises the key points on the effects, side effects and use of iodine tablets. When the training course is complete, participants can test their knowledge by completing the questionnaire, which can also be declared as a CPD unit online course in radiation protection.



Iodine tablets protect the thyroid from exposure to radioactive iodine and therefore help to prevent thyroid cancer. According to the recommendation of the Federal Commission for Radiological Protection CPR issued in the autumn of 2022, iodine prophylaxis is effective for children, adolescents and pregnant women; however, it is no longer recommended for persons aged over 45. Experience has shown that these distribution cam-

## ANTIDOTES FOR RADIONUCLIDES

In the event of a serious nuclear power plant accident or explosion of a nuclear bomb, radioactive substances may be released. These 'radionuclides' are unstable and decompose, potentially emitting ionising  $\alpha$ ,  $\beta$  and/or  $\gamma$  radiation. If they enter the body through the respiratory system, the gastrointestinal system or wounds (internal contamination), they may be taken up by specific organs (incorporation) and either damage them directly or subsequently cause cancer due to their mutagenic effect. Antidotes for radionuclides are intended to reduce or completely prevent uptake in the body or deposition in specific organs and/or increase rates of elimination from the body. Thanks to the recent distribution of iodine tablets (that contain stable iodine), most people are aware of this antidote to radioactive iodine. If taken at the right time, it prevents exposure of the thyroid to radioactive iodine through competitive antagonism.

In addition to this well-known antidote, there are a host of others, most of which are only known to a small number of experts. These antidotes are presented in the FOPH Bulletin, on a twice yearly basis, most recently in November 2022 (FOPH Bulletin 45/2022, [FOPH Bulletin \(admin.ch\)](https://www.admin.ch)). While the tabular overview is clear and the specialist information has been compiled by a group of experts, these long tables may be very confusing and difficult to read for non-experts, even those with a medical background, which could complicate and delay use of these antidotes in emergency situations.

The document published by WHO in January 2023 **National stockpiles for radiological and nuclear emergencies: policy advice (National stockpiles for radiological and nuclear emergencies: policy advice (who.int))** provides a clear and

concise overview of the five most important antidotes that can and should be used in emergency situations, as well as information on how and when they should be used. The international experts propose the following antidotes:

- **Iodine tablets** (antidote to radioactive iodine)
- **Prussian blue** (antidote to caesium and thallium)
- **Ca-DTPA and Zn-DTPA** (antidotes to transuranium elements such as plutonium)
- **Aluminium-containing antacids and alginate** (antidote to strontium)
- **Sodium bicarbonate** (antidote to uranium)

**These five antidotes cover all the key radionuclides that are released following a nuclear plant accident or nuclear bomb explosion.**

It is important to refer back to the full list described in the FOPH Bulletin for specific individual cases.

We offer an **online course** on the topic of **Radiation protection – iodine tablets and antidotes to radionuclides** on our website [Radiation accident – USZ](https://www.usz.ch).



## THE 17TH WHO-REMPAN COORDINATION MEETING, 13-15 SEPTEMBER 2023 IN SEOUL, REPUBLIC OF KOREA

Last September, WHO's REMPAN (Radiation Emergency Medical Preparedness and Assistance Network), of which Switzerland is also a member, held its 17th coordination meeting since it was founded



Dr Zhanat Carr, WHO, Radiation & Health Program, REMPAN coordinator, opening the conference

in 1987. The conference was held in hybrid form in Seoul, the capital of the Republic of Korea. As a consultant in the treatment of irradiated persons working on behalf of the FOPH, Urs Schanz took part in the meeting virtually and gave a presentation on the current role of stem cell transplantation in radiation accidents. This and the other virtual presentations were recorded beforehand as participating live was difficult for Switzerland due to the eight-hour time difference. Fortunately, all presentations were made available to participants in PowerPoint format after the event.

The scientific programme covered a wide variety of topics. The first of a total of ten sessions spread over three days was organised by the host country,

South Korea. It showcased its famously high level of preparedness due to the permanent nuclear threat from its northern neighbour and the fact that it has a remarkably large number of nuclear power plants (25).

In another session, individual network members provided updates on their own countries and programmes.

A significant block was dedicated to the topic of Fukushima 12 years on. This featured only speakers from Japan.

There was of course also a session on diagnosing and treating radiation victims. The Swiss presentation on stem cell transplantation was part of this block. The importance of the little-studied area of diagnosis and treatment of internal contamination was highlighted in its own session. And naturally there was also a session dedicated to presenting research findings and advancements in radiology. Every expert who attended the conference would have found something of interest in the programme.



On-site participants at the 17th WHO REMPAN Coordination Meeting in Seoul, September 2023

## RADIATION EMERGENCY MEDICINE HANDBOOK FOR MEDICAL CARE AND EDUCATION PUBLISHED BY THE GERMAN COMMISSION ON RADIOLOGICAL PROTECTION

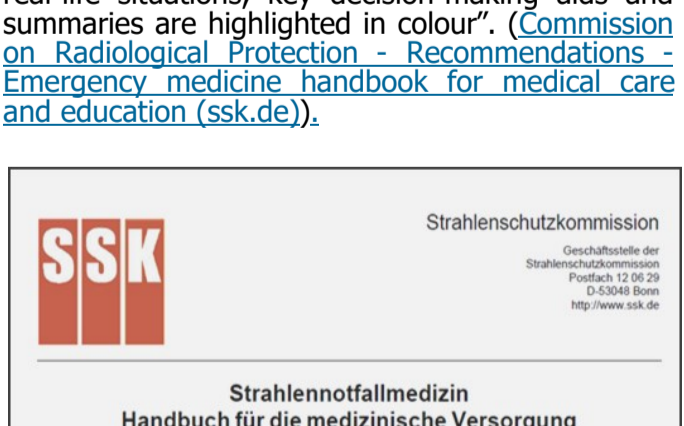
The German Commission on Radiological Protection (SSK) is an advisory board for the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). In August 2022, it published a handbook on **radiation emergency medicine**. It is available as a PDF in German and English on the SSK website ([Commission on Radiological Protection - Recommendations - Emergency medicine handbook for medical care and education \(ssk.de\)](https://www.ssk.de)).

Apart from some Germany-specific content, such as legislation, facilities and emergency organisations, the handbook is also suitable for training and education purposes for people in other countries, or as a practical guide for medical professionals working in this field in Switzerland. It seems to have already become well established within the emergency medicine community.

The SSK itself summarises the key points below: "This handbook considers both the provisions of the new German Radiation Protection Act and the radiological and nuclear accident scenarios for which the German federal government and *Länder* are preparing. It examines incidents that could damage the health of both individuals and large numbers of people due to actual or suspected radiation exposure.

This handbook should be used as a practical guide. It can be used both for training purposes for doctors specialising in radiation accidents and other staff employed in such situations, as well as for anyone working in radiological emergency preparedness and response. The handbook can support frontline staff in acute

emergency situations and provides important information on clinical treatment. Besides the radiation basics, it also deals with medical and psychosocial care and organisational/technical aspects around the various (accident) scenarios. For ease of use in real-life situations, key decision-making aids and summaries are highlighted in colour". ([Commission on Radiological Protection - Recommendations - Emergency medicine handbook for medical care and education \(ssk.de\)](https://www.ssk.de)).



We would advise anyone interested to download the comprehensive document (at just over 200 pages) and at least to browse through it. The handbook is of course also available on our website – [Radiation accident – USZ](https://www.usz.ch).

There are plans to create a Switzerland-specific handbook in future, which will subsequently be sent to the individual network centres for comment and input. We will provide more details in due course.

## COMING EVENTS

**Seminar of the Federal Commission for Radiological Protection** on the topic of 'Just culture in radiological protection', **22 March 2024**, Hotel Sorell Ador, Bern: [Announcement](https://www.admin.ch)

**Network Event 7: 07. Juni 2024** in Bern

**Network Event 8: 25. Oktober 2024** in Bern

## CONTACT

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