

Radioactive Radiation – Curse or Blessing?

On the Significance of Radiation for Health

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Carbon dioxide is a climate killer, it is claimed everywhere, so people believe it. Every little bit is supposed to be avoided. But carbon dioxide is a nutrient for plants, and a little extra plant fertilizer is good for their growth and thus good for food production. Therefore, avoiding CO₂ is NOT good.

Similarly, with radioactive radiation every small amount must be avoided in nuclear technology according to the law. This regulation creates the impression of a danger from radiation, with the following consequences:

- 1) Germany is moving away from its safe power supply, and
- 2) Radiation in low doses and low dose rates is good for living things.

These benefits are a blessing, but people are denied them due to incorrect legislation. Here, the goal is to present scientific evidence for the second point.

Keywords: Carbon dioxide; radioactive radiation; nuclear energy; health; lethal doses

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1. What is the right benchmark for measuring curse or blessing?

For comparison, we use alcohol, the toxic substance in beer, wine, sparkling wine, spirits, or merely a flavor enhancer in a praline. Everyone knows the effect of a small dose of alcohol: it stimulates the circulation and has a positive effect. Above an individually very different threshold, problems arise; then the person becomes incapable of functioning. Fortunately, this already occurs well below the lethal dose of several bottles of spirits. For alcohol, the legislator has set a threshold between curse and blessing at 0.5 per mille alcohol in the blood.

The dose-response curve for alcohol is shown in Figure 1 below.

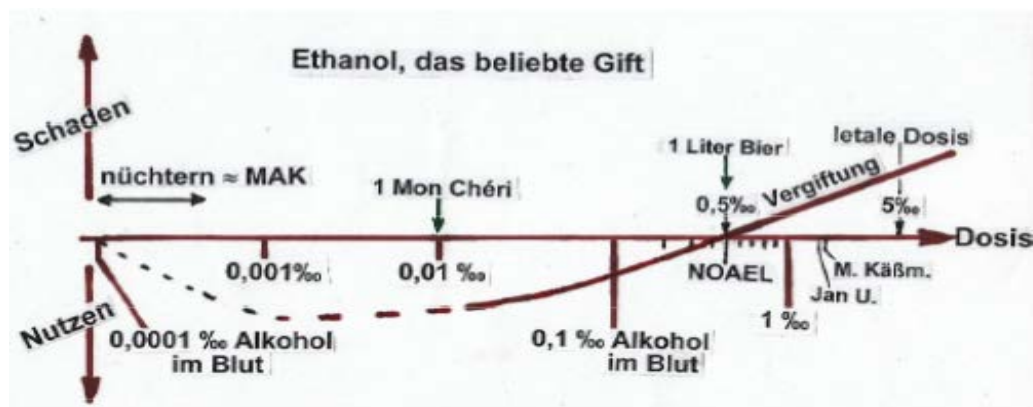


Figure 1: Dose-response curve for alcohol showing the areas of benefit and harm.

Similar dose-response curves exist for many substances, including many substances known as

poisons such as Hg, Cd, lindane, etc. There is always an area of beneficial effects at low doses. The toxicologist Edward Calabrese has written extensively about this. A beneficial range of effects can also be found for radiation; here is one example each of its effects on animals and plants:

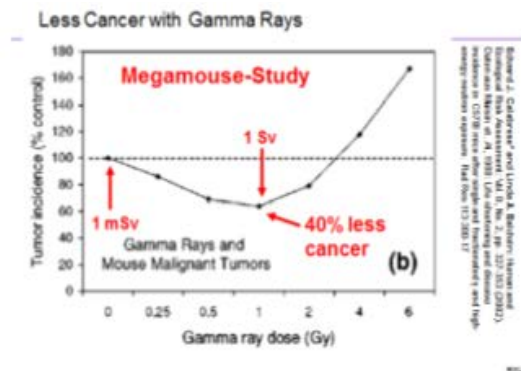
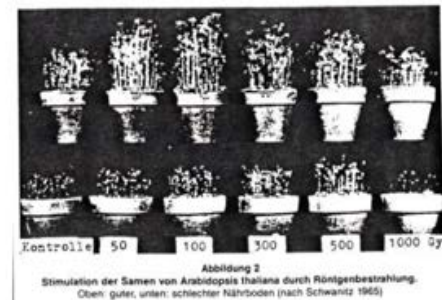


Figure 2: Less cancer with gamma rays (Walter Ruegg)



Stimulation von Samen durch Röntgenbestrahlung ergibt bei den Pflanzen kräftigeren Wuchs

Figure 3: Better growth also for plants (F. Wachsmann)

In the contaminated areas around Chernobyl, a small effect of improved health was observed from long-term exposure to low dose rates and low doses. Source: Prof. Jaworowski

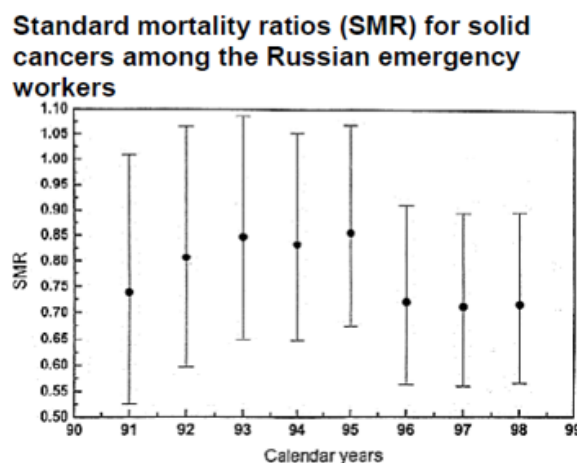


Figure 4: Emergency workers have less cancer

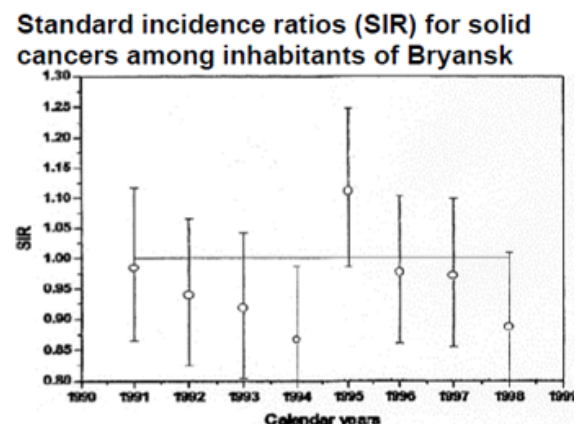


Figure 5: Less cancer in the strongly contaminated Bryansk region

It can be seen: The evacuations were carried out because the law required them. Had the evacuations not been carried out, the people would have experienced a small health benefit.

2. The Co-60 incident in Taiwan [1]

In Taiwan, structural steel was contaminated with cobalt-60, so that residents were continuously exposed to whole-body irradiation from hard gamma radiation. The elevated gamma radiation in the buildings was not discovered until 1992, after 10 years. A search was made for other contaminated buildings and more were found. Altogether, there was a cohort of 10,000 people who were exposed for 9 to 20 years to a radiation level not found either in nature or in the nuclear-technology sector.

The result: In the subgroup of 1,100 people with the highest dose, at the beginning in 1983 was

the mean annual dose 74 mSv, and the maximum was 910 mSv.

In the entire cohort of 10,000 people, there should have been **186 cancer deaths among the adults**. According to the LNT model used in radiation protection, radiation should have caused **another 56 cancer deaths**. In fact, **only 5 cancer deaths were observed**.

Thus, the positive effect of radiation on humans has been impressively proven.

3. Creating the appearance of a radiation hazard in nuclear technology through limits

A limit is understood as the boundary between danger and harmlessness. For radiation, the limit in nuclear technology is 1 millisievert per year for the general population; this was decisive for the evacuations after the Chernobyl and Fukushima accidents.

The two radiation dose-response curves in Figures 2 and 3 clearly show that at a dose of 1 mSv/y there is no effect on living organisms.

This can also be understood by comparison with alcohol: 1 mSv per year corresponds to less than one-thousandth of the lethal dose distributed over a year. For alcohol, one-thousandth of the lethal dose is less than a sip of wine distributed over a year, so it is truly insignificant.

The 1 mSv/year limit is exceeded in other areas:

- In medicine, a CT examination involves approximately 4 mSv/15 minutes of exposure.
- Lufthansa flight crews are exposed to a maximum of 10 mSv/year.
- Patients at a radon spa “suffer” a dose of approximately 1 mSv per treatment.

These examples clearly show: the radiation dose prohibited by law in nuclear technology is insignificant; in other areas, it can clearly be a blessing.

The limits applicable in nuclear technology are misleading; they create the appearance of a danger.

4. What does 1 millisievert mean for living tissue?

Radiation causes chemical changes in body cells by displacing bonding electrons from molecules. The immune system is then required to correct the resulting errors. 1 millisievert means one hit on a cell, corresponding to around 10,000 destroyed chemical bonds. Thus, 1 millisievert per year means that, in one year, the immune system is called upon once to repair the 10,000 altered molecules. If the immune system is trained only once a year, then this is insignificant.

There are proposals in the scientific community for achieving a benefit from radiation for living tissue. The forced training of the immune system appears plausible; compare it with training in sport. Here are proposals from four authors, Table 1.

Table 1: Proposed training of the immune system

	T.D. Luckey [2]	W. Allison [3]	M. Doss [4]	C.L. Sanders [5]
Dosis im Jahr	60 mSv	600 mSv	200 mSv	150 bis 3000 mSv
Dosisleistung	7µSv/h	70µSv/h	25µSv/h	20 bis 400 µSv/h
Training	1 x / Woche	10 x / Woche	3 x / Woche	3 x / Woche bis 10 x täglich

To illustrate the relationships, Figure 6 shows a logarithmic scale of the dose rate.

It shows:

- The cancer rate measured among survivors of the atomic bombings in Japan, increased by 5 to 10%, is extrapolated over up to 9 orders of magnitude toward lower dose rates; a calculation rule is then used to calculate the hypothetical cancer risk — this risk has nothing to do with reality.

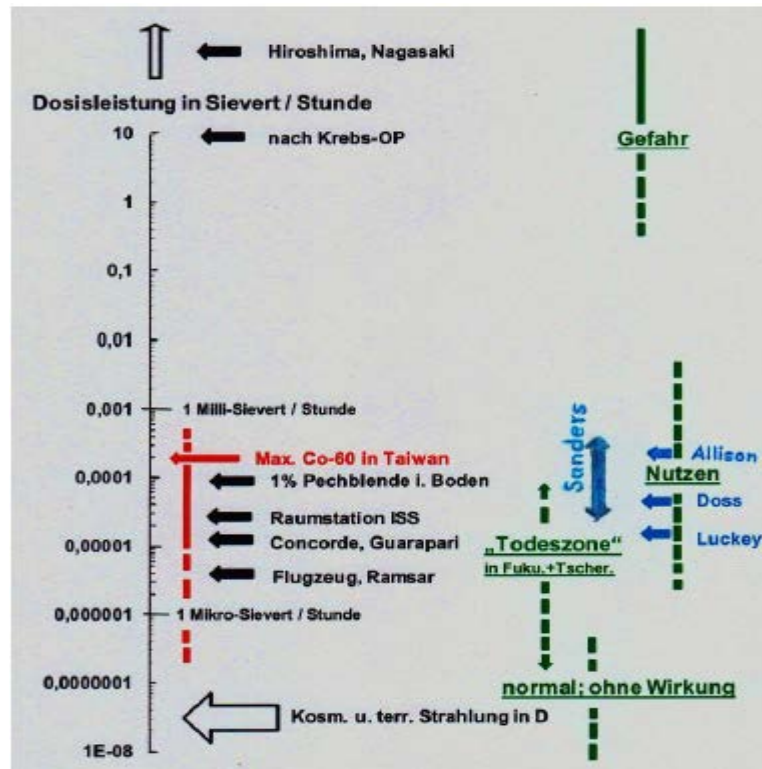


Figure 6: Radioactive doses and their effect

- The range of beneficial radiation effects is 1,000 times higher than normal environmental radiation; red (Co-60 incident in Taiwan) and blue (proposals by experts) are shown. The area around Chernobyl and Fukushima described as a “death zone” extends somewhat into this range; it was not a death zone, as Figures 4 and 5 show. The evacuations caused more than 1,000 demonstrably confirmed deaths in Japan; that was a true catastrophe.

If a radioactive release occurs in nuclear technology, then dose and dose rate show that a little additional dose can provide a small health benefit for people. The radiation-protection regulations are wrong.

5. Germany’s path into the abyss

This path began with the “energy transition” of the Schröder/Fischer government, replacing electricity from nuclear power plants at 2.4 cents/kWh with intermittent electricity from sun and wind at around 50 cents/kWh. Through the demagogic trick of concealing the truth behind the appealing term “feed-in tariff,” citizens were bribed with money. The fatal consequences:

- The replacement value of all German nuclear power plants is approximately **€250 billion**. Replacing them with solar and wind has so far consumed well **over €500 billion**.
- €2 billion** was invested in Gorleben; now the underground cavities are being refilled, which will cost additional billions of euros.
- The legally mandated retrieval of waste from ASSE requires construction of a new retrieval shaft. By the time retrieval begins, costs of **€3 billion** will have accumulated. Calculations show that retrieval could avoid an additional dose of 20 μ Sv/year for residents after 2,500 years (!!!). As everywhere on Earth, the overburden above ASSE contains 100 times as much radioactivity as the waste deep underground. The law known as the ASSE Act concerning waste retrieval is a political pseudo-problem created to generate fear and win votes.
- Spent fuel elements are called and treated as waste in Germany, although they still contain 95 % of the energy. They should be reprocessed.
- The one-meter-thick outer walls of the interim storage facility at Gundremmingen were

protected along the 100-meter-long side by a second one-meter-thick reinforced-concrete wall, because of the “danger of terrorist attacks.” For reasons of “secrecy,” there were no media reports about this.

- Depleted uranium can still be used completely for energy generation through nuclear fission in fast reactors; this technology works in Russia without problems. Fast reactors are being developed all over the world; in Germany only sparingly.

Germany is throwing its prosperity out the window. Because of high energy prices, German companies are becoming uncompetitive, moving abroad or shutting down operations altogether. A majority of citizens have not yet noticed this. Presumably, it will take a very cold winter with power outages and cold homes before citizens wake up. Only about 28% of citizens had recognized the problem according to the latest polls, but these citizens are disparaged by successfully “throwing brown dirt” at them.

6. What does the rest of the world say?

Germany is committing economic suicide with its energy policy. Through the relocation of its industry, its foreign competitors’ benefit, so naturally they remain silent. Radiation experts abroad know what is going on; here are some statements:

- The ICRP describes the danger of any tiny dose of radiation as “speculative, unproven, undetectable, phantom” — a phantom is a ghostly image or ghost. Germany is abandoning its secure electricity supply out of fear of ghosts.
- Professor Jaworowski, the Polish “pope of radiation,” called the LNT hypothesis “criminal.”
- In 2015 there was a petition to the NRC by four professors from the USA, with excellent reasons for replacing the LNT hypothesis with legislation corresponding to hormesis. In its response, the NRC agreed with the petitioners but passed responsibility to the ICRP on the grounds that it lacked jurisdiction.
- Luckey: “500,000 cancer deaths could be avoided each year in the USA if people were allowed a dose that is good for their health.”

Opinions often arise not through thought processes but are skillfully shaped by the leading media. In Jürgen Kiefer’s 2012 textbook [6], the following is written about positive radiation effects: “Naive minds might conclude from this that radiation is beneficial to health. Some do so and call it radiation hormesis”. Among the 163 sources cited by Jürgen Kiefer, all people who contradict the LNT hypothesis and ALARA are missing, including the German professors Ludwig E. Feinendegen and Klaus Becker. Since 2024 there has finally been a good book by Walter Rüegg [7] on the supposed radiation danger.

All over the world, nuclear technology continues to develop with new ideas; only Germany continues to move back toward the “good old days.”

Another topic should be mentioned in which the whole world is allegedly being misled by skillful propaganda: it is said that methane has a “30-fold climate-damaging potential compared with CO₂.” This is wrong, because the methane molecule, like oxygen and nitrogen, has no dipole moment. It has a tetrahedral structure with C in the center and the H atoms at the four corners. In my professional career at Siemens Munich, Hofmannstrasse, I was responsible for the infrared spectrometer and was trained in it (by Perkin Elmer). I never saw methane bands, and methane was not present in my extensive IR library.

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