



Skeppsbron, Stockholm, Sweden

Extremely high radiation in Stockholm, Sweden

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2,648,000 microwatts per square meter in maximum value were measured most on the Ship Bridge in January 2019. This is an extremely high and hazardous level. The researchers behind the study believe that people are exposed to serious risks at these levels.

Measurements carried out on 14 January 2019 by the research group around the oncologist Lennart Hardell show extremely high radiation from low-lying base stations on Skeppsbron in Stockholm. The results were published on January 4, 2022 in the scientific journal Environmental Research.

The base stations that caused the high radiation are located low on the low buildings that house cafes and restaurants along Skeppsbron. Measuring instruments used were Narda NBM-520 and EME Spy 200. The researchers counted a total of 15 base station antennas located along the Ship Bridge, all located at very low altitudes close to where people are staying.

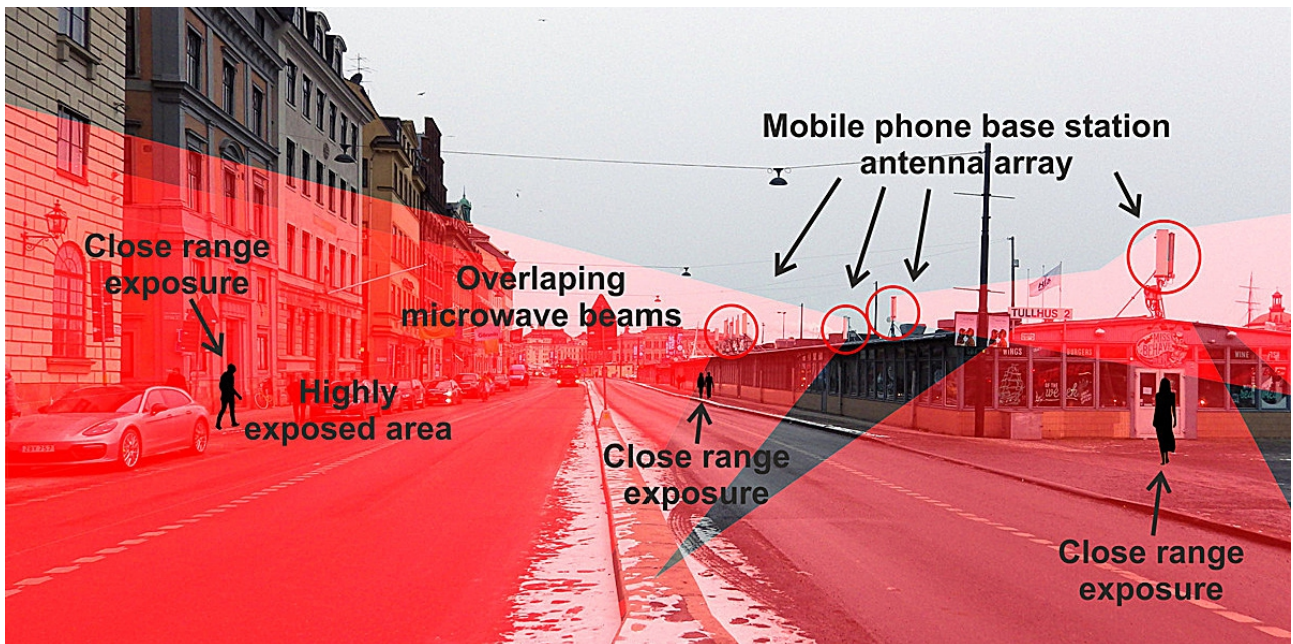


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2,648,000 microwatts per square meter

A maximum of 2,648,000 $\mu\text{W} / \text{m}^2$ was measured in maximum value, which is an extremely high and hazardous level. The highest mean value (measured as a mean value over 1 minute) that the researchers found was 388,000 $\mu\text{W} / \text{m}^2$. Very high radiation was generally measured near the base stations, but the highest levels were on the other side of the street at a distance of 26 meters in the antenna direction. Still 250 meters from the base stations, the levels were very high even though the radiation decreases with distance.

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Lennart Hardell and co-workers state that it is clear that radiation has increased a lot and rapidly in recent years. For comparison, the highest mean value measured in Stockholm in 2001 was in a study by Bergqvist et al. $180 \mu\text{W} / \text{m}^2$ in average. At Skeppsbron, the corresponding highest average value eighteen years later was $388,000 \mu\text{W} / \text{m}^2$. They also note that the Swedish Radiation Safety Authority has previously measured high levels on the Ship Bridge, at most $690,000 \mu\text{W} / \text{m}^2$ in maximum value.

A possible explanation for the extremely high levels measured in January 2019 is that the current base stations were already upgraded with new equipment for 4G and 5G.

Serious health risks

The researchers note that these levels expose people who stay longer in the area near the base stations to serious health risks. Italian researchers observed an increased risk of brain tumors and heart tumors in animal experiments at levels slightly higher than those now measured, meaning that there is not a sufficient safety margin to the levels now measured.

Although the microwave radiation from 4G and 5G base stations poses serious health risks, current legislation does not require approval from nearby residents when installing base stations on existing properties. This is despite the fact that the environment of the nearby residents is significantly affected and deteriorated.

Research has repeatedly shown that there are health risks, including the risk of cancer, with long-term exposure to radiation from base stations at levels that are far below those measured at Skeppsbron, the research group states.

Much higher than levels that cause immediate ill health

The Radiation Protection Foundation recently reported on a couple from Norrköping who got a 5G base station directly above the apartment. The levels that were measured and that caused direct ill health after commissioning were significantly lower, but at the same time the highest level measured in housing: 354,000 $\mu\text{W} / \text{m}^2$ in maximum value, compared with Skeppsbrons 2,648,000.

The symptoms experienced by the occupants of the apartment are typical of exposure to elevated microwave radiation and have been described in the scientific literature for 50 years:

- *dizziness*
- *nausea*
- *nosebleeds*
- *palpitations*
- *chest tightness*
- *headaches*
- *difficulty sleeping*
- *abnormal fatigue*

Recommended maximum values

The Bioinitiative Report from 2012 recommended that radiation should not exceed 30-60 $\mu\text{W} / \text{m}^2$ for long-term exposure. For children and other sensitive groups, the radiation should not exceed 3-6 $\mu\text{W} / \text{m}^2$.

The table below, taken from a scientific article by *Lennart Hardell, Tarmo Koppel, Michael Carlberg and Mona Nilsson*, published in 2021, shows the recommendations for the maximum permissible radiation stated in $\mu\text{W} / \text{m}^2$ submitted by various bodies. The State of Salzburg's Ministry of Health and the European EM EMF Guidelines recommend from 0.1-1 $\mu\text{W} / \text{m}^2$ as the maximum value depending on sensitivity and whether it was exposure at night or during the day. The table also shows the recommendations made by the telecom-friendly organization ICNIRP in 1998, which thus form the basis for permitted radiation in Sweden.

	Limit ($\mu\text{W}/\text{m}^2$)		
1966	100,000,000	ANSI C95.1 [149]	Based on thermal effects and 0.1-hour (or 6 minute) averaging time.
1991	10,000,000	ANSI/IEEE C95.1-1991 [150]	Based on thermal effects.
1996	10,000,000 5,800,000	FCC [151]	USA: 5,800,000 averaged over a 30-minute period (869 MHz), previously recommended in 1986 by NCRP; 10,000,000 for PCS frequencies (1.85-1.99 GHz).
1998	10,000,000 9,000,000 4,500,000	ICNIRP [53]	10,000,000 for 2–300 GHz 9,000,000 for 1800 MHz and 4,500,000 for 900 MHz averaged over 6 min.
2001	1,000	Salzburg Resolution [152]	
2001	100	EU Parliament STOA 2001 [153]	
2002	1	New Salzburg Precautionary Exposure Limit Indoor [154]	Maximum indoor exposure recommendation for GSM base stations proposed by the Public Health Office of the Government of Salzburg.
2009	See 1998	ICNIRP [54]	Confirmation of ICNIRP 1998.
2012	3-6	Bioinitiative 2012 Recommendation [44]	
2016	0,1-100	Europa EM EMF Guidelines [41]	For frequencies between GSM 900 to WiFi 5,6 GHz depending on sensitivity, night time or daytime exposure.

Source [Tabell 5, Hardell et al. 2021](#)

Applicable rules in Sweden: Only acute heating effects

In Sweden, these high levels, which are now measured at Skeppsbron and in the apartment in Norrköping and in many other places over the past two years, are permitted by responsible authorities (the Swedish Radiation Safety Authority, the Swedish Public Health Agency and the Swedish Work Environment Authority). This is because they are leaning towards the seriously insufficient recommendations from ICNIRP, which are even higher: 10,000,000 microwatts per square meter measured as an average value over 6 minutes.

ICNIRP's absurdly high reference values allow humans to be exposed to known harmful radiation levels. They are based on an outdated approach to the risks of microwave radiation established by the US military industry in the 1950s: the fact that the radiation would only cause harmful effects at such high levels that it heats up body tissue in a short time. ICNIRP's reference values only protect against these so-called "thermal" effects, which benefits the industry concerned, for example the telecom and military industries, which actively and hard lobby for better protection and reduced reference values.

This means that the Swedish authorities' so-called reference values lack protection against a wide range of shown health risks, such as microwave syndrome, cancer, neurological diseases, heart effects, impaired reproduction, DNA damage, oxidative stress, as a result of prolonged exposure at levels that do not lead to warming. so-called "non-thermal" effects. It also explains why so many people get severe ill health at levels that are far below the reference values that the authorities falsely claim would protect against all displayed health effects.

No studies show that these levels do not pose health risks

One of the researchers responsible for the outdated and severely insufficient reference values from ICNIRP is Professor Maria Feychting from Karolinska Institutet. When the Radiation Protection Foundation asked her which studies have shown that exposure to 5G, 4G, 3G in combination or separately for a longer period of time (at least one year) does not cause harmful health effects to humans during 24-hour exposure at 10 W / m² on average for 6 minutes in level with ICNIRP's reference value or at levels that are up to 1000 times lower, Maria Feychting answers that we can search for it ourselves:

"You will find the scientific basis for ICNIRP's recommendations on ICNIRP's website. The assessments are a combination of evidence from different research fields, where epidemiological studies are only a part, and which also include experimental research on cells and animals, human experimental studies, dosimetric studies, etc. If you have further questions about ICNIRP's recommendations, please contact ICNIRP. I am no longer a member of the ICNIRP Commission. "

Thus, there are no studies that show that it does not involve health risks to expose people to the body for a longer period of time at levels of ICNIRP values or even at levels that are 1000 times lower. We have not been able to find them and Maria Feychting can not refer to them either.

Nor can SSM find them. When similar questions are asked to SSM, the answer is that they do not exist:

"It is in principle impossible to show
that something is harmless,
so such studies do not exist."

Sources

1. [Koppel, Hardell et al. 2022](#): Very high radiofrequency radiation at Skeppsbron in Stockholm, Sweden from mobile phone base station antennas positioned close to pedestrians 'heads
2. [Hardell, Koppel et al. 2021](#): Aspects on the International Commission on Non-Ionizing Radiation Protection (ICNIRP) 2020 Guidelines on Radiofrequency Radiation