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Chronicle and criticism of the Iodine prophylaxis

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Publisher and printer: tredition GmbH, Halenreihe 42, 22359 Hamburg

ISBN: 978-3-347-14725-6 (e-Book)

ISBN: 978-3-347-14723-2 (Paperback)

ISBN: 978-3-347-14724-9 (Hardcover)

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Content

Abridged version of the published book

Introduction

After more than three years of research, discussions with protagonists, citizens and those affected, I have now dared to take the step to the public with my open letter. The global mission of iodine prophylaxis, which was pursued so intensively in Germany, captivated me. Its history has a variety of levels of action in society, law, politics, medicine and science. It resembles a crime novel by Charlotte Link and, as in a fictional crime story, the bad guys and shadow men are of course not to be missed. However, it would indeed be critical if, after more than 30 years of iodine prophylaxis and general forced iodination, German politicians were to deny society an open debate on the results, unintended effects and consequences of this mission. Germany needs an honest and open debate on iodine prophylaxis, in which those affected by health in particular have their say.

Dr. Timo Boehme, Germany, Ludwigshafen, September 14, 2020

Chronicle and criticism of iodine prophylaxis

(Comments and interpretations by the author are presented in italics)

1970 – Start of feed iodization

Council Directive 70/524/EEC authorised 40 ppm iodine in complete feeding stuffs. This corresponds to 40 mg of iodine per kg of animal feed. *The question therefore arises as to the extent and to what magnitude this iodisation option has really been used in the European Union and in Germany?*

1971 – Iodized cattle salt is part of a proposal for an EEC regulation

A proposal of the Council (EEC) on the establishment of maximum levels of undesirable substances and products in feeding stuffs proposed a range of min. 0.0038% and max. 0.0076% iodine in iodised cattle salt. *Here, too, the question arises as to the extent and to what magnitude this iodization of cattle salt was used in the EU and in Germany?*

1983 – Beginning of iodised salt prophylaxis in the GDR

As early as 1983, the GDR (German Democratic Republic) used iodized table salt with a content of 20 mg iodine per kg of salt in the south of the country. This corresponds to 20 µg I/g salt. In 1985, iodization reached the entire GDR, with 84% of package table salt being iodized (presentation by Prof. em. R. Grossklaus - 32 µg KIO₂/g; Prof. Koehrle - 20 µg I/g).

1984 – Founding of the Working Group on Iodine Deficiency (Arbeitskreis Jodmangel e.V., Federal Republic of Germany, FRG)

1985 – Founding of the interdisciplinary iodine commission (GDR)

1986 – Start of feed iodization in the GDR

In 1986, iodine began to be added to mineral feedstuffs in the GDR (Prof. Koehrle - 10 mg I/kg). *However, mineral feed is not the same as complete feed. A cow receives only about 100 g of mineral feed per day and has thus absorbed about 1 mg of iodine at that time. The total daily ration of a cow comprises about 11 to 15 kg of dry substance, which corresponds to a fresh mass of 50 to 80 kg.*

1989 – Start of iodised salt prophylaxis throughout Germany

With the inclusion of iodised table salt in the Additives Approval Ordinance (Zusatzstoff-Zulassungsverordnung, 15-25 µg I/g), its use in community catering and food production became possible. Until then, only the Diet Ordinance regulated the use of iodized table salt in dietary foods.

1993 – Elimination of the double declaration on the front of food packaging

With the Second Ordinance Amending the Regulations on Iodized Table Salt (Zweite Verordnung zur Aenderung der Vorschriften ueber jodiertes Speisesalz), the separate labeling "With iodized table salt" on the packaging was abolished. In addition:

- the labelling requirement for loose unpackaged food was abolished
- the labelling requirement in community catering was abolished

- by the amendment to the Meat Ordinance (Fleischverordnung) the use of iodinated nitrite curing salt was enabled
- by the amendment to the Cheese Ordinance (Käseverordnung) the use of iodinated table salt in the production of cheese was enabled

The regulations adopted made it possible to make the use of iodised salt "invisible" to the consumer in many cases. This state of affairs continues to this day.

1993 – Advertising for the increased use of iodised table salt

The Federal Health Office (Bundesgesundheitsamt, BGA) and the Working Group on Iodine Deficiency e.V. (Arbeitskreis Jodmangel e.V.) launched a broad advertising campaign for the use of iodised table salt. Among other things, it was advertised for use in the food industry, the food craft, community catering and the catering industry. On October 4, 1993, a so-called round table discussion took place at a symposium of the Federal Health Office at the Max von Pettenkofer Institute in Berlin. The corresponding BGA publication 3/94 ("Necessity of iodine salt prophylaxis") contains a number of interesting information:

In Chapter 1 "Summary", for example, 30% of the population is spoken of having an enlarged thyroid gland at the time of publication. This corresponds to about 25 million people. A widespread disease "endemic goiter" is postulated. This statement refers to earlier statements by Prof. P. Pfannenstiel and is still very controversial today. It could not be proven by later studies (Melchert et al. 2002; Bruker and Gutjahr 1996). In addition, the document obviously downplays the disadvantages of iodized salt prophylaxis. Autoimmune diseases of the thyroid gland such as Graves' disease (Morbus Basedow) and Hashimoto's thyroiditis are ostensibly very rare, which probably even corresponded to reality in 1993, but of course could not represent a reliable prediction for a future with iodine prophylaxis.

However, an increase in the prevalence (frequency) of autoimmune diseases is assumed with the ongoing duration of iodine prophylaxis. Ostensibly, Graves' disease patients can be well adjusted by their doctor with thyrostatics to a higher iodine supply. *In this context, it should be mentioned that, according to later statements by Prof. Hengstmann, thyrostatics are only*

suitable as short-term medication because of their severe side effects.

However, iodisation of feedstuffs as a major source of iodine for food is completely excluded from the round table discussion and is only mentioned in passing.

In chapter 3 "Iodine deficiency in Germany ..." Prof. Scriba and Prof. Hoetzel explain that the methodology of direct detection of iodine deficiency in food is difficult and unsuitable for epidemiological studies. The iodine supply of the population can therefore only be determined with the indicator iodine excretion in the urine, whereby the target value of at least 100 µg I/litre should be achieved. *In a personal phone call in 2017, Prof. Flachowsky also informed the author that all iodine values from this time mentioned in relation to foods are subject to inaccurate and uncertain analysis, which was only improved accordingly in the first decade of the new millennium.* The World Health Organization (WHO) is quoted as recommending a daily iodine intake of 150 to 300 µg per day.

In Chapter 4 "Consequences of iodine deficiency from a paediatric point of view", Hesse explains that in the 1970s, 37% of West German pupils and 46.5% of East German pupils had an enlarged thyroid gland (goiter). *However, Hesse draws a comparison with international studies. The question therefore arises as to what is actually the correct, normal size of the thyroid gland in Germany? Obviously, there is a dependence on the regional food situation.*

Prof. R. Grossklaus explains in Chapter 6 "Basics and Necessity of Iodized Salt Prophylaxis..." states that Article 2 (2) of the Basic Law forms the basis for voluntary iodised salt prophylaxis and is to be used in a biological-physiological sense postulating physical integrity is also to be understood as freedom from diseases. *However, fundamental rights are first and foremost the rights of the citizen to defend themselves against the state and state intervention, to use them as a justification for state intervention is extremely questionable! At the same time, it is recognised that the Basic Law prohibits general or mandatory iodised salt prophylaxis. The same question arises with regard to feedstuffs iodination. The principle of the alleged "Voluntariness" must be questioned at this point. The use of iodized table salt in loose goods, in communal catering and in the catering industry is not marked, the same applies to the entire feedstuffs iodization. From the consumer's point of view,*

one cannot speak of "voluntariness" here! It is a state coercive measure. This is also the conclusion of the report of the scientific service of the Rhineland-Palatinate state parliament.

In chapter 8 "Iodine-induced hyperthyroidism with regard to Graves' disease", Prof. Mann states that there is little usable data on the influence of the alimentary iodine supply on the frequency of immunogenic hyperthyroidism. *This statement virtually requires appropriate accompanying and safety research on iodine prophylaxis, with either broad-based epidemiological studies and/or a continuous recording of all thyroid diseases!* Prof. Mann also refers to a number of studies that indicate or prove the disease-triggering effect of iodine. With regard to Hashimoto's thyroiditis, there is no significance, but further studies are recommended to clarify this! *The situation or the state of knowledge is therefore more than ambiguous at this time! In addition, the long-term effect of iodine prophylaxis cannot be estimated at this time, as such an effect cannot be presented in studies. For this reason, too, a continuous recording of all thyroid diseases over the period of iodine prophylaxis would have been urgently necessary!*

Literature reviews on iodine-related thyroid diseases can be found many years later in the dissertations of Tom Wuchter and Sholeh Mashoufi from 2007 and 2014. The present document a PubMed query was also attached, which shows current studies on the topic of iodine excess. However, publications from the 1990s also clearly showed the problems (Wiesbadener Schilddruesengespraech, Stanbury et al. 1998 "Iodine-Induced Hyperthyroidism: Occurrence and Epidemiology", Delange et al. 1999 "Risk of Iodine-Induced Hypertyroidism After Correction of Iodine Deficiency by Iodized Salt").

1993 to 1996 – Massive resistance to iodine prophylaxis in its existing form develops

In 1996, Dr. Max-Otto Bruker (Clinic in Lahnstein, Rhineland-Palatinate) and Ilse Gutjahr, Managing Director of the Society for Health Counselling (Lahnstein), published a book entitled "Disorders of the Thyroid Gland", which can be regarded as a standard work on the criticism of iodine prophylaxis. Among other things, there is talk of an iodized salt scandal.

On April 24, 1996, according to a witness, Ilse Gutjahr was forcibly dragged from the podium by the President of the Rhineland-Palatinate Medical Association, Prof. Kroenig, at an event in Trier and prevented from continuing to speak. She had previously pointed out that the proponents of iodine prophylaxis act with a wide variety of information, units of measurement and statements and described the contradictory sources of the WHO as dubious. *The battle for iodine prophylaxis had begun. However, it is largely lost by the opponents of iodining, as the professors of the Arbeitskreise Jodmangel e.V. sit at the levers of institutional power and advise politicians.* For example, Prof. Dieter Grossklaus was President of the Federal Health Office (BGA) until the end of 1993. Prof. Rolf Grossklaus has been Head of the Department of Nutritional Medicine at the BGA since 1991 and later also held leading positions at the Federal Office for Consumer Protection and Veterinary Medicine (BgVV) and the Federal Office for Risk Assessment (BfR).

A criminal complaint against Prof. R. Grossklaus at the Berlin Public Prosecutor's Office on suspicion of bodily harm and dangerous poisoning in 2004 failed. At least iodization of the drinking water could be prevented.

1997 – Start of the "rollback" to feed iodization

In 1997, Commission Directive 96/7/EC limited the maximum permitted amount of iodine in complete feeding stuffs from 40 ppm to 10 mg I/kg feed (with a moisture content of 12%) for dairy cows and laying hens and, correspondingly, 20 mg I/kg for fish and 4 mg I/kg for equine animals (report by the Scientific Service of the Landtag of Rhineland-Palatinate).

In 2005, the French Food Safety Authority (AFSSA, now ANSES) published a dossier on food iodination, which points out the risk of overiodination, especially for young children. This document explicitly calls for a reduction of 15 to 20% in the iodine content in milk (feed iodination). In addition, the use of iodized salt in all foods is rejected. *According to the author's knowledge, France has since only iodized bread and baked goods and used iodized table salt in private households, restaurants and communal catering.* The results of the German KiGGS baseline study (2003-2006), which were published in 2007, confirm high iodine levels in the urine of young children in Germany.

Also in 2005, on the advice of the respective panel, the European Food Safety Authority (EFSA) further reduced the maximum permitted levels for dairy cows and laying hens to 5 mg I/kg of feed. There were concerns that the maximum levels of 10 mg I/kg permitted to date would lead to the iodine upper limits for daily intake being exceeded with regard to adults and adolescents (worst case scenario).

In 2013, the corresponding EFSA panel produced three Scientific Opinions, in which, among other things, a further reduction of the maximum levels for feed for dairy cows to 2 mg I/kg and for laying hens to 3 mg were demanded (personal communication Prof. Flachowsky). However, the EU member states did not follow this recommendation, there was no majority.

In June 2017, a parliamentary group in the Rhineland-Palatinate state parliament submitted an inquiry for a report to the meeting of the Committee on Agriculture and Viticulture (submission 17/1483). According to the state government of Rhineland-Palatinate, the average amount of iodine used in dairy cattle feeding at that time was 1 mg I/kg of feed.

2013 – The truth is slowly coming to light!

In 2004, the German Federal Office for Risk Assessment (BfR) published a statement entitled "Benefits and risks of iodine prophylaxis in Germany" on its website. *This document can be seen as a bulwark against the critics of iodine prophylaxis and as a legacy of Prof. R. Grossklauss.* The two core statements were: 500 µg iodine per day and in the long run does not harm anyone and is also not achieved by iodine prophylaxis. *The document still adorns the BfR website.* But both statements are wrong! A large number of studies indicate that the prevalence of autoimmune diseases increases with as little as 300 µg daily intake. The World Health Organization (WHO) now sees the limit at 200 µg for people with pre-existing conditions and 300 µg for the average citizen, although it should be noted that consumers are often not even aware of pre-existing thyroid diseases!

In the document itself, on page 12, reference is made to a publication by Prof. Mann, in which he describes the earlier development of manifest hypothyroidism (underactive thyroidism) when people with a subclinical pre-existing condition are supplied with more than 200 µg of iodine per day.

Interestingly, the recommended iodine intake per day is no longer given in the document as 150 to 300 µg, but reduced to approx. 150 µg (compare Round Table Discussion Max von Pettenkofer Institute 1993). However, the 300 µg continues to haunt the document and is referred to as an "abundant intake" in connection with feed iodination.

Iodine levels in milk are given in the document as 82 to 115 µg l/l. Stiftung Warentest, on the other hand, still finds 110 to 520 µg l/l in the quality assessment of milk in 2017 when testing 18 types of milk. Seven types of milk are in the range of 170 to 520 µg (test, issue 10/2017).

The high iodine content in fruit juices, fruit, honey and chocolate is ignored in the document (Prof. Hampel and Zoellner 2004 "On the iodine supply and load with goiterous noxes in German"). In addition, the document states that the daily iodine intake via "unprocessed, natural" foods and without iodized salt is 60 µg. *This is an understatement when you consider that such an amount can be absorbed with just 200 ml of fruit juice or 100 g of chocolate. In addition, this statement also ignores the enormously increased levels in milk and eggs due to feed iodination.*

The document also claims that iodine intake in the milligram range through food is excluded by the specified maximum levels for iodised table salt and feed iodination. *This statement is also false (Flachowsky et al. 2014, Strohm et al. 2016, Hampel and Zoellner 2004).*

The document also claims that iodine-induced hyperthyroidism essentially occurs only in older people (>40 years) and with iodine excretion in the urine of 200 µg l/l or more. *This statement does not seem very credible and does not correspond to the reports of those affected. People with a low iodine supply and pre-existing conditions are particularly likely to react to high amounts of iodine with hyperthyroidism (hyperfunction) or even a thyrotoxic crisis. High iodine doses can also lead to hypothyroidism (underactive thyroidism - Wolff-Chaikoff Effect).*

In 2002, employees of the Robert Koch Institute published results from health surveys (Melchert et al. 2002 "Thyroid hormones and thyroid medications in subjects in the National Health Surveys"). The data are based on the German health surveys from the years 1984 to 1991, i.e. from a time

before or in the early phase of the nationwide iodised salt prophylaxis launched in 1989, but before the Second Ordinance Amending the Regulations on Iodized Table Salt in 1993. Overall, the prevalence of drug-treated thyroid diseases is 5.5%, with the value for men being much lower at about 1.8% and that for women at about 9%. The use of thyrostatics is 0.3% in men and 0.5% in women. The percentage of subjects with goiter is less than 3%. The results can therefore be assumed as a "starting point" before the start of a broad iodine prophylaxis.

In the following year, 2003, employees of the Robert Koch Institute again published results from a later health survey (Hildtraud Knopf and Hans-Ulrich Melchert 2003 "Contributions to the Federal Government's Health Reporting - Federal Health Survey: Drug Use - Consumer Behavior in Germany"). The data are based on the German Health Survey from 1998, i.e. from a period 4 to 5 years after the Second Ordinance Amending the Regulations on Iodized Table Salt in 1993. Overall, the prevalence of drug-treated thyroid diseases is 7.9%, whereby the value for men was again much lower at about 2.9% and that for women at about 12.6%. Compared to the "initial situation" described by Melchert et al. in 2002, however, the values have already risen, by about 2.4% on average for the sexes. The use of thyrostatics is not reported in this publication.

In 2013, employees of the Robert Koch Institute again published the results of a health survey (Knopf and Grams 2013 "Drug Use by Adults in Germany"). The information is based on the German Health Survey (DEGS1) from 2008 to 2011. Overall, the prevalence of medically treated thyroid diseases is about 11.5%, with the value for men being much lower at about 4.5% and that for women at about 18.6%. Compared to the "initial situation" described in 2002 by Melchert et al., the values have risen further. On average for the sexes, by about 6%. The use of thyrostatics is not reported in this publication.

In 2019, the state government of Rhineland-Palatinate responded to a major inquiry "Evaluation of the Drug Prescription Report and other sources with regard to the prevalence and development of thyroid diseases in Rhineland-Palatinate" (printed matter 17/9730). According to the study, the number of patients in public health insurance with a confirmed diagnosis in the ICD spectrum E 00 to E 07 (thyroid disease) rose from 491,000 to 631,000

between 2009 and 2018, which corresponds to approx. 15.5% of the population of Rhineland-Palatinate. *However, there is no data on private health insurance, so the percentage is estimated to be around 17% in relation to the total population!*

In the years 2000 to 2018, the number of medical products in the subgroup ATC H03 (thyroid therapy) dispensed by pharmacies at the expense of public health insurance in the Federal Republic of Germany rose from approx. 16.5 million packs to approx. 27.5 million packages (response to major inquiry). *However, there are no data on private health insurance, so the number is about 10% higher in relation to the total population!*

When comparing the German health surveys from 1984 to 2011 and the major inquiry from 2019, it can be seen that the prevalence of thyroid diseases has increased enormously! *In purely mathematical terms, it is about 200% plus compared to the initial situation 1984-1991!* However, it must be mentioned that the data from Rhineland-Palatinate are not assumed to be fully representative of the national average. *Nevertheless, there is a strong upward trend, which should be a cause for great concern!*

At this point, it makes perfect sense to remember the statements of Dr. Max-Otto Bruker. The author quotes from the cover of the aforementioned book: "The continuous use of iodized salt will give us an army of thyroid diseases in the long term."

Was Dr. Max-Otto Bruker right? This question must be answered seriously with regard to iodized salt prophylaxis and also with regard to feed iodination, i.e. iodine prophylaxis in its entirety. It's high time!

In 2014, Flachowsky et al. published a review of seven European feeding studies with dairy cows and found that an iodine content of 500 µg/l is achieved in milk at just 2 mg l/kg feed. *The average consumption of dairy products in Germany is currently the equivalent of approx. 1 to 1.3 litres of raw milk per person per day (German Agricultural Society in top agrar 9/2019; Statistika).*

In 2016, the German Society for Nutrition (DGE) published a study on current table salt consumption (Strohmeier et al. 2016 "Table salt intake in Germany, health consequences...").

In this scientific opinion, a median salt intake of 8.4 g for women and 10 g for men per day is found. 39% of women and 50% of men consumed more than 10 g of salt per day. 15% of women and 23% of men consume more than 15 g of salt per day. The study does not provide any information on nitrite curing salt, which is also iodized in Germany and is widely used in sausage and ham.

Here, too, the statements of Dr. Max-Otto Bruker, who wrote of up to 30 g of salt consumption daily, come true. Even if it must be assumed that only a certain percentage of salt in Germany is iodized, iodine intake via table and nitrite curing salt depends very much on the individual food basket and eating behaviour. In addition, a consistent use of iodised salt in the household, which can then far exceed 100 µg per day. The natural iodine content of foods and the enormous increase in iodine content due to feed iodization must also be taken into account.

2017 to 2020 – Politicians, ministries and higher authorities still pretend to be ignorant

Bundestag: An intensive search by the author in the Bundestag's document system in June 2019 yields just 18 documents (since 1949) related to the iodization of food and feed, despite the use of about 40 search words or search word combinations. Among them are 8 direct, small or written inquiries, which are usually answered very succinctly and stereotypically. The rest are references in reports and notices of a general nature. The search term "feed iodination" did not lead to a direct search result, but the term appeared in a response to a written query from 2008, but is not explained or quantified there. In February 2020, the Federal Government responded to a minor question from members of parliament on the use of salt and iodine supply (printed matter 19/17062), documenting widespread ignorance of the prevalence of iodine deficiency and thyroid diseases.

Bundesrat: Various amendments to ordinances and laws are related to iodine use, but iodine prophylaxis in its entirety of iodised salt prophylaxis and feed iodine has never been the subject of debate to the author's knowledge.

At the request of the author, the Federal Ministry of Health refers to the Federal Ministry of Food and Agriculture (BMEL).

At the request of the author, the Robert Koch Institute (RKI) refers to the health reporting of the federal government and the DEGS1 study (2008-2011).

At the author's request, the Federal Office of Consumer Protection and Food Safety (BVL) refers to the Working Group on Iodine Deficiency (Arbeitskreis Jodmangel e.V.), to the food control of the federal states and to the lack of competence. It cannot appoint a contact person at the Federal Office for Risk Assessment.

At the request of the author to the Federal Ministry of Food and Agriculture, the Federal Office for Risk Assessment (BfR) refers to its own website and the Arbeitskreis Jodmangel e.V.

After a seven-month delay and repeated requests, the Federal Ministry of Food and Agriculture responds and refers to answers from the state government of Rhineland-Palatinate, the report of the scientific service of the Rhineland-Palatinate state parliament and the website of the BfR and considers the facts to be "exhaustively" explained.

In answers to parliamentary questions, the state government of Rhineland-Palatinate refers to the German Society for Nutrition (DGE) and states that food control has not determined iodine levels in food. She also refers to the Robert Koch Institute and the DEGS and KiGGS studies.

On request, the Max Rubner Institute refers to the German Society for Nutrition (DGE) and announces another degenerative study, in which blood analyses will also be carried out in order to obtain more accurate results than urine tests. According to the Federal Government (printed matter 19/17062), this study called the "germ study" was launched in March 2020 and is to be completed in 2022.

From the answers from ministries and higher authorities, it is clear that there is only limited awareness and expertise on iodine prophylaxis. This is also unofficially confirmed by an employee of the Federal Office for Risk Assessment.

Iodine prophylaxis in Germany was and is initiated, controlled and rather less monitored by two registered associations (e.V.). The Arbeitskreis Jodmangel e.V. and the German Society for Nutrition e.V.

The legislatures of this country, as well as the majority of citizens, know very little about iodized salt prophylaxis. Knowledge is essentially limited to their existence. There is little knowledge about the actual extent of iodination. In particular, feed iodization is largely unknown. There is virtually no involvement of the legislatures in the decisions on iodine prophylaxis, and if there is, then only with the influence of "experts" from the environment of the Arbeitskreis Jodmangel e.V. or the German Society for Nutrition e.V. Decisions on iodine prophylaxis, unless simply left to the market, are initiated by the registered associations mentioned. In the author's opinion, there has been no significant safety research on iodine prophylaxis, which focuses primarily on unintended effects. The accompanying research is partly contradictory in its statements.

2020 – Science, Security and Accompanying Research without a Data Basis?

In their 2004 publication "On the iodine supply and load with goiterous noxes in German", Prof. Rainer Hampel and Helmut Zoellner describe a discrepancy that they allegedly could not explain: "There is a discrepancy between the stagnating consumption of iodised salt since the mid-1990s and the iodine supply of the population as a whole, which is now sufficient according to the WHO criteria." They had noticed that despite a no further increase in iodized salt use from 1995 (large containers) and 1996 (package salt), iodine excretion in the urine of children massively increased from 1996 to 1999 (83 µg I/l to 148 µg I/l) and then again significantly decreased to 125 µg I/l in 2003. They then suspected an "iodine input into the food from incalculable sources".

At that time, however, the scientists were well aware that there was a feedstuffs iodization, which was propagated in the 90s as well as iodized salt prophylaxis. The increase in iodine excretion is most likely due to this feedstuffs iodination, as is the decline in iodine excretion after 1999, which was probably due to the limitation of iodine additives in feedstuffs to 10 mg I/kg in 1997 due to the correction of the corresponding EU Directive. However, the publication is also an indication of the great effect of feedstuffs

iodination, because it must not be forgotten that the figures mentioned are median values. The excretions of 27% of the children were in the range of 200 µg I/I and more, 11% had excretions of more than 300 µg I/I.

On September 3, 2018, the author had invited members of the Arbeitskreis Jodmangel e.V. to a discussion. The meeting took place in Mainz. It lasted almost five hours and Prof. em. R. Grossklaus and Prof. Gaertner gave and handed over two presentations. Another exchange took place by e-mail.

In the author's opinion, it became very clear in this conversation that the professors of the Working Group on Iodine Deficiency e.V. also consider the data available to assess the effects of iodine prophylaxis to be insufficient. Above all, there is a lack of comprehensive epidemiological studies, not only incomparable due to different experimental setups/methodologies. A comparison with countries in which no such intensive iodine prophylaxis has been practiced, such as Ireland and the Netherlands (very low or no feed iodization), is therefore not possible.

Meta-studies on iodization and thyroid diseases would be urgently needed, but there is no money available for this. There are also structural problems, for example the Robert Koch Institute is subordinate to the Federal Ministry of Health, but the funds for studies would have to be made available by the responsible Federal Ministry of Food. Responsibility for iodine prophylaxis is left to the scientists; politicians are not involved!

The professors express that an interdisciplinary working group would be urgently needed, but does not come into being. Monitoring the requirements in the context of iodine prophylaxis is a matter for the federal states, so it is difficult to come to a common approach. Access to statistical data also appears to be difficult, as it is not sufficiently available. Health insurance companies could have more information at their disposal.

According to statements by the Federal Government, the State Government of Rhineland-Palatinate and the Robert Koch Institute, there is no continuous recording of thyroid diseases (statistics). A direct assessment of the success or unintended effects of iodine prophylaxis is therefore not possible (answer to minor inquiry in the Bundestag, printed matter 19/17062, answer to minor inquiry in the state parliament of Rhineland-Palatinate, printed matter

17/2750 and personal communication with the RKI). Only health surveys and consumption studies, some of which are listed in this document, provide indications of the development of the prevalence of thyroid diseases.

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