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Subject:

Contribution to the public feedback process on the following "Health Canada" Document for public comment: Fluoride in Drinking Water (the following text is also attached to this mail as a MS Word 2000-2003 document: "Contribution to the public consultation Fluoride in Drinking Water - by Rudolf Ziegelbecker jr.doc")

Dear experts, ladies and gentlemen,

within the public consultation on "Fluoride in Drinking Water" which is open until November 27, 2009, I would like to send you comments and widely unknown information and scientific papers which are most relevant to assessing fluorides and fluoridation with respect to efficacy and health risks and has not been regarded in the document for your consideration.

Author of this submission:

Rudolf Ziegelbecker jr. (= R.C.Ziegelbecker)

Academic titles: Mag.rer.nat., Dipl.-Ing., Dr.techn.

Profession's title: Professor

Profession:

Former (theoretical) physicist, actually teacher of physics (and mathematics) at a technical college in Graz/Austria and member of a ministerial working group for Austrian education standards in science education, multiple prize winner at science competitions for schools, in 2003 received the EU-promoted "EIROforum science teaching award" at "Physics on Stage" for one of Europe's best science projects with students.

About the author's occupation with fluoridation:

From about 1976 to 1993, on a voluntary, extra-professional and absolutely unsalaried basis, I assisted my scientifically working father*1)*6) as a "critical thinker" at his professional fluoride research (which he did for the Styrian (=regional) government and for the government-owned Research organization). I also did some scientific work on my own, mainly in order to find out - sine ira et studio - the true magnitude and sort of an eventual rest of benefit of fluoridation, after the **conclusions in/from all basic fluoridation studies had been scientifically disproved*2)*3)*5)**, but no clear data for the size of an eventual remaining positive effect were available in my eyes until 1987. This is why, at that time, in extending my father's work, I developed a mathematically abstract **ab-initio** rationale for an **ab-initio** suitable coordinate frame for investigating benefits and harm (=changes) caused by additional influences in general and by fluoridation in special.

*4) Using this coordinate frame and existing data of dental fluorosis, **harm by fluoridation is obvious even far below the recommended concentration (=even below 0.5 ppm fluoride in water)*4)** and the usefulness/correctness of the model is confirmed by the distribution of those "random fluorosis data" as well.

Applying the same, **ab-initio** best-suited coordinate frame to "**random dental caries data**", **absolutely no (eventually even a negative) "benefit" of fluoridation is obvious** a) from the entity of data from fluoridation studies (known at that time, 12 - 14 years old children, including all "pro fluoride" studies) at least above 0.35 ppm*4) (which is far below the "recommended" or "optimal" concentration of 1 ppm of fluoride in water) which are not completely random since targeted selections at low concentrations have been proven by my father, e.g. for the famous "21 cities study" by Dean, which is included in the data set too, and b) when "scientifically repeating" Dean's study with unselected data on the dental caries of 12 years old children gathered in 1987 at the WHO headquarter in Geneva and using the same method as for dental fluorosis.

The above results and their support by the **Czechoslovak Academy of Sciences** were the main reason for the end of fluoridation in Prag (Prague) and Budweis (Ceske Budejovice), not (only) health concerns.

Moreover, I unwillingly, also by chance:

- witnessed harmful side-effects by unwitting fluoride-overdosing within my family*1),
- the drama around the death of a child in 1976 from intake of only about 200 "safe" fluoride tablets,
- the repeated unconsciousness of my (sensible) brother when cleaning his teeth with fluoridated tooth paste,
- the complaint by an other teacher (only a few years ago) about her nausea at primary school when she had to swallow fluoride tablets compulsorily before my father could stop this practice in Austria,
- as well as the fate of "fluoridation" in Europe and the true reasons for it.

-- above referenced and all of it attached to this email: --

*1) See my father's biography which contains a lot of background information on the fate of fluoridation in Europe and credible information of how fluoride's toxicity expressed itself in childrens' bodies. If you want to read more about him you may click the links
http://www.fluorideresearch.org/403/files/FJ2007_v40_n3_p160-161.pdf
http://www.fluorideresearch.org/421/files/FJ2009_v42_n1_p2.pdf

*2) ...starting with his fundamental paper in "Prophylaxe": "Gesetzmäßigkeiten im Verlauf der Zahnkaries" = "Mathematical Laws in the Development of Dental Caries" - which unfortunately in the moment is only available in German with a too short English summary and which was attached already to my "Comments on Working Mandate" and in which he managed to separate the influences of fluoride on tooth eruption delay and on the increase of the susceptibility of the teeth to tooth decay from the data which led to the recommendations of fluoridation(!).

*3) See his "compendium of summaries", which contains a lot of scientific information esp. about discovered relations between fluoride and cancer, material which partly is not easily accessible, all of the mentioned scientific work and communications having contributed to the cessation of fluoridations in Europe.

*4) See attachment "Lognormal Distributions...."

*5) See my attachment "F-Naumann..." wherein Professor Naumann (Chief of the former Institute for Water-, Soil- and Aerial Hygiene in Berlin) writes that several statisticians had declared the results obtained by my father to be "unrefutable".

*6) See the "In Memoriam Rudolf Ziegelbecker", which describes an important part of his scientific work and which recently appeared in the Fluoride journal
(http://www.fluorideresearch.org/423/files/FJ2009_v42_n3_p162-166.pdf) - this paper is attached too.

Institution: My institution (HTBLVA Graz Ortweinschule) has nothing to do with fluoride research.

Declaration of interests:

After my father's death and because of sincere sorrow for the health of people still suffering from fluoridation all around the world I only want to point to "forgotten" or not widely known facts and provide as unbiased as possible scientific and background information about specific aspects of fluoridation especially to public institutions, like recently to the EU-Commission, the EPA of the State of California and now to the Ministry of Health in Canada, which are responsible for the health of their citizens, as well as to researchers as an input to their work and to my students as an example for the "scientific method" and some of its weaknesses. I have not done any more own research since I was able to fully understand and quantitatively explain the effects of ingested fluoride on permanent teeth.

Since science must be "open", these my comments shall be open to everybody and may therefore be communicated also to other researchers and all those interested.

Ladies and Gentlemen,

the Health Canada review "Fluoride in Drinking Water" looks quite scientific, but cannot be accepted to be as scientific as necessary for being a Guideline to Public Health Officers.

When I teach Science, I tell my students that - in science - a single experiment, if it contradicts a theory, refutes/disproves this theory. If there are doubts about its validity, it has to be re-analyzed or repeated under better controlled conditions until its implications on the hypothesis or theory becomes clear. One therefore has to be aware of the key experiments which were done in a field and of their implications.

Furthermore, science is based on the natural laws which cannot be altered, and science "lives" from trying to find out these laws and relations in an unbiased way. **This implies unbiased (complete) publication - of evidence as well as of counter-evidence - in order to be able to derive reliable results.**

In the case of the Health Canada document on Fluoride in Drinking Water these **well-known requirements of science are not sufficiently fulfilled**, like they are not in most governmental activities concerning fluoridation:

In the actual case, for example, the name "Ziegelbecker" cannot be found a single time(!) among Health Canada's 98 pages dealing with drinking water fluoridation, in spite of the fact that **Rudolf Ziegelbecker's papers and his expertise in governmental decision processes were a main factor for fluoridation being banned from almost all Continental Europe until 2003** (in that year the famous fluoridation in Basle, Switzerland, was ended) - read the attached In Memoriam (http://www.fluorideresearch.org/423/files/FJ2009_v42_n3_p162-166.pdf), please.

The key experiments in the field of fluoridation were the first experiments, and Rudolf Ziegelbecker could show already from these first experiments that there is no benefit except for :

- **caries differences which cannot be attributed to fluoride**
- **caries differences caused by an eruption delay of permanent teeth**, leading to large caries differences in young children of the same age but neither being a persisting increase of resistance of the teeth against dental caries nor being a sustainable effect which would remain until high age.

The mentioned basic scientific requirements have not been met by most governmental activities concerning fluoridation, as **it has not been pure scientific research which has led to fluoridation and its maintenance**. Instead, **scientifically not tenable conclusions by dentists from observed true facts in the 1930ies and 1940ies, or conclusions drawn from**

- **selective perception while**
- **ignoring important other causal relations** (especially the relation between the proven tooth eruption retardation by fluoridation and the stringently related, but not sustainable, caries "reduction") and
- **confounders** (e.g. sugar consumption), have led to recommendations of fluoridation by highly

respected organizations.

Governments then introduced fluoridation, conducted by the hope for better tooth health and pushed by those **experts who "lived" from the research, conducted and funded for "demonstrating" efficacy and safety of fluoridation against all doubts.**

The path of science was left at the latest at that point when medical journals refused offers and wishes for publication of new analyses on fluoridation in the 1970ies and 1980ies with the "question":

"Is the paper in favour or against fluoridation? We have to ask right at the beginning, because we do not publish against it."

I still remember my father's anger about this status of science in medicine, and that **one publisher had to quit his job immediately (hours) after publication of a critical paper from my father.**

The result of this policy of medical and dental medical journals was one of the reasons why the belief in a benefit of fluoridation could grow, resulting in a **separation of fluoride research into two "worlds":**

1. The well-financed world of promoters - so-called "experts" - of fluoridation who (had) passed more and more recommendations on the basis of their own reports and, while ignoring all contradicting evidence concerning efficacy and ignoring the refutation of all basic studies which led to the recommendations, produced and provided a vast number of studies "showing" that the negative health effects of fluoride should be tolerated in view of the (euphorically asserted) "benefits" of fluoridation,
2. while the minor financed "world of independent scientists" who seriously questioned "The King's New Clothes" and couldn't find any true benefit of fluoridation (only this eruption-delay-caused caries-shift could be seen), published striking papers e.g. in the independent, peer-reviewed scientific journal of the International Society for Fluoride Research (ISFR), "Fluoride", which seem to be ignored by fluoridation promoters even if (or because?) not only a single one of them would be sufficient to stop this measure - if it were not fluoridation.

Reasons for the vanishing of fluoridation in Europe, as my father experienced it and brought it about, can be looked up (unfortunately only in German in the moment) in his authentic book

"Vorsicht Fluor" (by Dr.med. Max Otto Bruker and Rudolf Ziegelbecker, 7th edition 2005, 480 pages, emu-Verlag, 56112 Lahnstein, Germany).

Now, one would assume that all governments and health officials would try to identify where true science has been done and which of the parties is right, concerning the principal point: efficacy of fluoridation. One clever experiment would be sufficient.

It is impossible in true science, for example, that scientists claim that the "successes" of fluoridation (caries differences - called "reductions" - of up to 60% and even more), which led to the mentioned recommendations by the WHO and numerous dentists' organizations, can be explained by either eruption delay or (proven) selections of data, like for example my father did it (for one example see the attached In Memoriam, p.164 line 5), while promoters claim the same differences to be caused

(believably?) by fluoride and to be sustainable benefits. Consequently, many European institutions at that time compared the reasoning of well-known fluoride experts with the arguments of my father and other opponents of fluoridation (in hearings, discussions, papers which had been analyzed by independent statisticians) and arrived at the opinion that my father was right and the promoters' arguments (even if they could advocate them personally) are not able to prove any true benefit of fluoridation.

Some governments, especially in the English-speaking countries, however, have not yet realized that a benefit of fluoridation which they and many dentists' organizations rely on, has not yet been proven:

No randomized double-blind study has ever been done which tracks caries development and tooth eruption (which my father already demanded in 1969) until higher age, probably the best way of distinguishing between a non sustainable (seeming) benefit due to tooth eruption delay and a true increase of the resistance of the teeth against dental caries. Although promoters would have had more than half a century of time to do such a study, clarify fluoride's effects and end the discussion once for ever, such a study has not been done.

No wonder that in August 2007 one of the world's best known and highly respected experts on fluoridation, Prof.em. Albert W. Burgstahler, since decades editor of the scientific, peer reviewed journal "FLUORIDE" which is the only independent journal in this field since it accepts no advertisements, could communicate to me (I cite with his permission:

"Yes, you may use my statement as editor of FLUORIDE to illustrate how important information about F research has been excluded from PubMed and pro-F reviews, so that many sincere, well-meaning people in public health are unaware of what they should know.):

"Even now, despite no clear evidence of any real caries reduction from water fluoridation or even from topical fluorides, many researchers submitting research reports for publication in FLUORIDE still adhere to the belief that there is such evidence. But then, when asked to cite it, they bring up **outdated and disproved reports or else drop the claim.**"

This situation was only created by the fact that **around 1970 all medical journals "closed" themselves to objective publications on fluoride** thus creating a **massively biased "parallel world"** which was far off scientific discussion and which until today is able to maintain the belief in the "benefits" from fluoridation on the basis of repeating disproved pro-fluoride reports and ignoring scientific evidence.

This **"parallel world"** could be maintained until today also because many "scientific reviews" - like the **"York Review"** of 2000 - include only "original studies" in their work but exclude **exactly those studies which disproved or relativised the namely original studies.**

Such reviews - one of them the Health Canada review - also do not study the **premises of every cited study** like my father did it, which means that they will not discover:

- **implausible selections = manipulations in the raw data or their lack of validity**

- **contradictions between the summary/conclusions drawn by the author and what the data tell.**

The result must be a scientifically untenable impression which again supports this **biased "parallel world"** which is present in medical literature but not in free and responsible science, and is **based on those disproved reports.**

On the other hand, there is already so much evidence for a zero benefit of fluoride that it might not even be necessary any more to do such a randomized double-blind study. I attach my father's document "**Codex Alimentarius.doc**" in which he gives a summary of the most important scientific arguments against fluoridation, including "unpublished" ones.

When you read the following addition/addendum/comments to/on the Health Canada document on Fluoride in Drinking Water, please bear in mind that

a) the controversial discussion of tolerable side effects and a tolerable upper intake level of fluorides can be regarded/treated again in the normal toxicological way and with the normal toxicological safety margin after the inefficacy of fluoridation will have been generally accepted (see paragraph d) below!), and that

b) the **chemical properties of fluoride do not change even over centuries.** This means that results derived from the first fluoridation experiments, which are not yet influenced by fluoridated tooth pastes and excessive pollution by industrial fluorides moreover, are very valuable and still valid today and cannot be covered in whitewash by later studies which do not control for tooth eruption timing. Also, the poisonous effects of fluoride which were known before fluoridation have not changed until now.

c) since for "caries prevention" by fluoridation (= the intended incorporation of the fluoride-ion into the teeth) the silicofluorides used for water treatment have to release the ion(s) in order to get the "necessary" concentration which maintains the "desired" equilibrium during tooth formation, all evidence of adverse health effects associated with soluble fluorides like sodium fluoride (which was used for "caries prevention" in drinking water and is used in fluoride tablets) should apply also to silicofluorides at least to the same amount (**much more side-effects for SiFs than for NaF are known**, however). As consequences, all the following information has to be taken into account even when the risk potential of (silico)fluorides is assessed, and if someone claims the **lack of such an adverse health effect he would have to prove this for the used substance.**

d) When referring to the safety standards of other authorities, bear in mind, please, that since (the ion) fluoride is an acute toxin with a rating slightly higher than that of lead (According to "Clinical Toxicology of Commercial products," 5th Edition, 1984, lead is given a toxicity rating of 3 to 4, and Fluoride is rated at 4 = "very toxic") and since on December 7, 1992, the new EPA Maximum Contaminant Level (MCL) for lead in drinking water was set at 0.010 ppm, with a goal of 0.0 ppm, it is clear that the far higher upper (tolerable) intake levels "recommended" for fluoride e.g. in 2005 by the EU of 0.1 mg/kg body weight/day - which even accepts up to 5% dental fluorosis in the whole population (see Opinion of the NDA Panel of the EU of 22 February 2005) as well as USA's new EPA standards - were still established many times too high, **without any safety factor** (indeed with a safety factor smaller than 1) only **because of the widespread belief in a benefit of fluoridation which falsely interprets an adverse health effect (inhibition of enzymes and of the production of hormones, resulting in tooth eruption delay and therefore caries delay at young ages) as a**

"benefit" instead of an intoxication (All the other "caries reductions" have been proven to be scientifically not tenable since they were the results of misinterpretations, data selections etc.).

A revision of that false belief would automatically reduce the upper tolerable intake level, probably by a factor of 5 or 10. This fact is therefore directly relevant to risk assessment. In this context I attach the result of a scientific review of my father's results by many statisticians, some opinions condensed in a letter by **Prof. Dr. E. Naumann*5)** who wrote to my father in 1970 (I translate):

"Some statisticians with whom I talked about your results declared them as irrefutable. In your papers we see a decisive contribution to the objective scientific critique of drinking water fluoridation...." and

"Your results have been accepted everywhere in Germany with largest interest and have increased the grave doubts against drinking water fluoridation by dentists, hygienists, toxicologists, water experts, etc. It is regrettable that the known results on water fluoridation have not been examined earlier on the basis of mathematical-statistical methods. In this case the myth of drinking water fluoridation would have had dissolved to air long since."

I think the above and the following information has not been easily available to the authors of the Health Canada report on Fluoride in Drinking Water, but is associated with and necessary for the risk assessment of all fluorides used for addition to drinking water:

Toxicologists - who have to balance the tolerable upper intake levels between benefits and potential harm - must know the reason why fluoridation vanished almost in whole Europe (lack of a true benefit) and must know **the real nature of fluoride's "benefit" since this "benefit" - an eruption delay of teeth by fluoride – may likewise be classified as an adverse effect and as a sign of intoxication, by responsible toxicologists (just like fluorosis).**

While every true scientist should know about eruption delay, only a very very small number of studies included this important influence which can easily reach about 0.5 to 1 year and can easily produce temporary differences in the exposure (of permanent dentition) and consequently in dental caries of up to 60% in younger children. This renders most comparisons in the literature between trial and control groups worthless and **I suggest to remove all such studies from the Health Canada review in which eruption delay would make a change to the message of the paper and in which this effect has not been included into the reasoning and conclusions by the author.**

According to my experience authors ignored this factor even if they could clearly see it in order not to get in conflict with the actual dogma:

On a poster at the ISFR conference 1987 at Nyon/Switzerland there was e.g. clearly visible that eruption delay increases clearly with increasing fluoride intake at about the "recommended" intake, can therefore be expected to occur even below 0.5 ppm F in drinking water (probably like dental fluorosis behaves, see my attached paper "**Lognormal distributions**", fig. 10) and produces differences in caries findings which must be expected from this delay. However, I consider this poster and a corresponding later paper as examples for "selective publication" since the author did not publicly mention the true/main reason for the observed caries differences.

Moreover, as far as I know, **scientific committees** (e.g. those of the EU and of the USA) have not yet tracked my father's basic paper(s) in which he was able to mathematically separate - from original data

which form the basis of fluoridation and which were not yet influenced by the use of fluoridated tooth pastes - the influence of fluoride on tooth eruption (a delay) from its influence on the **susceptibility of the teeth to dental caries (which turned out to be higher(!)** for fluoridated than for non-fluoridated teeth) in his first paper already, but if you look at his compendium of summaries*3) you will see that my father found this effect more than once. (Physicists are trained during their academic studies to analyse experimental data in this way.)

In this connection a last remark in this preface:

Toxicologists' efforts to enable an "above borderline" upper tolerable intake limit for fluoride would not be necessary if people would track and understand the argumentation and mathematical methods of attachment*2) ("**PROPHYLAXE...**"), take their results as they are, and establish an **upper tolerable intake level in the classical, responsible way - like e.g. for lead - without regarding the (not existing) "benefits" of fluoridation and regarding the cancer facts (USA and Basle) listed later in this email.**

Here are my personal contributions on the hazard profile (esp. cancer at "recommended" concentration) of fluorides in drinking water, based on credible scientific material and original data which has - at least in part - not been easily accessible to Health Canada and is missing therefore: (for more and more precise information see my father's documents which I attach in part to this email, e.g. the document "Codex Alimentarius", and which I'll send later with a second email)

Summary:

This is of course not the full hazard profile, I present only relevant information which is usually not considered:

- 1) Fluoride is a "**sabotage toxin**" with the property that by inhibiting enzymes people may die from problems with other organs without fluoride being discovered as the true cause. Therefore much attention has to be paid to lowest known data on deadly doses and such values have to be regarded very seriously (one value see below).
- 2) **An inhibition response delay of tooth eruption** has to be regarded as a result of intoxication and not as a benefit even if less teeth at same age also result in less dental caries.
- 3) There are strong correlations between fluoridation, cancer (overall) and liver cirrhosis which are very likely to be causal somehow, since the known enzyme inhibitor fluoride acts on many organs, but I think that the causal chain of these strong correlations has not been looked at in detail or even clarified until now. At least until this is clarified, about 3 additional cancer deaths must be expected per 10000 newly fluoridated people. These results are supported by alarming cancer data from Basle (at "recommended" fluoride concentration in drinking water).
- 4) There is more material written for the EU scientific committees by my father Rudolf Ziegelbecker before he died - I'll send this information in a second, separate email.

1. Toxic effects of fluoride on the whole body:

- a) Observable and remarkable adverse health effects described in the attached "**Biography...**" (Ziegelbecker, 2005, biography p.4/second half of the page plus page 5 first paragraph, attached(*1)), which disappeared within weeks after avoiding all fluorides, were also witnessed by myself. Before this successful "experiment" long investigations by experts of the **Hygiene Institute of the University of Graz** stated fluoride as the most probable cause since the values of HF in air were far above the limits.
- b) Additionally to what my father wrote in his biography I remember **2 times unconsciousness of my brother during brushing his teeth with fluoride toothpaste** which did not occur any more after taking fluoride-free toothpastes.
- c) In **1976 a child died** in my home country Austria from ingesting only up to 200 fluoride tablets (his mother said: 50) which were stored at the home of a teacher family who had to distribute the tablets to their pupils. This is far below what was said by authorities to be deadly even today. The name of the boy was **Daniel Huala**, by this name more details can be found on the Web. While the responsible persons considered this amount as "safe" at that time, I remember that the possibility of dying at this dose was clear to my father already at that time because he had found out that sodium fluoride was NATO sabotage toxin number one (I am sorry that I don't know where the information came from - but what my father told was very reliable), which means that people who received too much fluoride usually died from complications of which nobody would assume that fluoride has been the cause, while the enzyme-inhibiting properties of this ion had done their "work". I attach a copy of the newspaper "**Oberösterreichische Nachrichten**" of **14 March 1978** wherein you can read that **poisoning with fluoride tablets occurred about daily at that time** (before my father could stop tablets in Austria).

See also Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 30, number 40, paragraph 7): (Ziegelbecker, 2003, Summaries of papers - attached, p. 30, number 7, in part translated):

"Fluoride is a strong enzyme-, cell- and cumulative poison. Its effects depend on concentration, duration of intake and other factors - Genannt werden Hemmung der Blugerinnung, Knochenschwund, -Erweichung, -Verkalkung, schlechte Knochenbruchheilung, Brüchigwerden der Nägel, Verstopfung, Kribbeln, Haarausfall, Zahndurchbruchshemmung und Fehlstellungen, Gefährdung von Nierenkranken, Begünstigung von Harnsteinen, Mongolismus. Danger for people suffering from kidney diseases."

The smallest letal dose which was found by my father to be mentioned in published literature was 6 - 9 mg F-/kg body weight and the **smallest dose for acute intoxication was 2-3 mg F-/kg body weight** (see attached PDF-document "**Fluorvergiftungen**" - the relevant literature is cited there - and below)."

I cite text from my father's legacy:

"There is enough literature from which a much lower acute toxic dose (2-3 mg/kg body weight) and lethal dose (6-9 mg/kg) than cited in most data banks in the Internet can be derived:

Gellerstedt: Dtsch. Z. gerichtl. Med. 19, 475 (1932)

Roholm: Klin. Wochenschr. 15, 1425 (1936)

Roholm: Fluorine Intoxication. Nyt Nordisk forlag. Kobenhavn og H.K. Lewis & Co, Ltd. London, pp. 364 (1937)

Moller or Moeller or Möller: Kariesprophylaxe im Kindesalter durch Fluoride. Landesausschuss zur Förderung der Jugendzahnpflege in Schleswig-Holstein (1972)

Schumacher: Die Wirkung chemischer Kampfstoffe - Symptomatik und Therapie. Dtsch. Stomat. 20, 197 (1970)

Fasske: Akute Fluorvergiftung. In: Gordonoff: Toxikologie des Fluors. Schwabe & Co Verlag Basel/Stuttgart (1964)"

(Daniel Huala received up to 16 mg F/kg body weight - but also vomited - this means that such a low value for the possibly deadly dose is certainly correct - see also <http://www.fluoride-history.de/huala.htm>).

Remark:

But dentists' institutions do not seem to learn from this case: An Austrian Newspaper wrote only a few years ago that 5000 tablets would not be deadly and refused a correction of this wrong information.

d) Compendium of summaries*3) (Ziegelbecker, 2003, Summaries of papers - attached, p. 5, number 7,):

"It has to be remarked that also the threshold for harmlessness postulated by DEAN and graphically depicted by HODGE and SMITH and the "optimum" fluoride concentration of 1 ppm F in drinking water cannot be perpetuated." - translation

("Bemerkt muß noch werden, dass auch die von DEAN postulierte und von HODGE und SMITH graphisch dargestellte Unbedenklichkeitsschwelle für Fluoride und die „optimale“ Fluoridkonzentration von 1ppm F im Trinkwasser nicht aufrecht bleiben können.")

e) My attached paper "**Lognormal distributions...**"*4) (=material not easily available; only the WHO data were published in 1993 in the peer-reviewed "Fluoride" journal: Ziegelbecker, Fluoride 26 263-266 1993 - if not available in suitable form ask for a copy please - size 0.6 MB - email: htl-zb@utanet.at) figs. 10, 12, 13, 14:

Since dental fluorosis does not vanish even below 0.5 ppm fluoride in drinking water ("no dose or concentration seems to be harmless") and actually (at least before 1987) there is no caries preventing effect (fig. 13, 14), even from fluoridation studies' data (which contain also selected data) at least not above 0.35 ppm (fig. 12), it can be concluded that there is no "optimal dose" at all.

f) Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 6,

number 8,):

The threshold for harmlessness postulated by DEAN and graphically depicted by HODGE and SMITH cannot be maintained also because intake from other sources was/is not regarded at all in this way.

g) Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 24, number 34,):

The threshold for harmlessness postulated by DEAN and graphically depicted by HODGE and SMITH cannot be maintained also because there is no toxicological safety margin.

h) Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 50,51, number 66): Critical Review of the "Review of Water Fluoridation and Fluoride Intake from Discretionary Fluoride Supplements. Review for NHMRC. Melbourne, 1999" and the "Recommendations to the Health Advisory Committee (HAC)", Submission to the National Health and Medical Research Council (NHMRC). Melbourne, 1999":

The total intake of fluoride by people from other sources such as food, minerals and drinks, and environmental sources is unknown and cannot be controlled. For this reason, and because of possible side effects, it is impossible to define an "optimal dose" of 1.0 ppm of fluoride in drinking water and the small standard deviation of 0.1 ppm F (1.0 +/- 0.1 ppm F).

The conclusions in the Executive Summary in the "Review for NHMRC" (p. ii) are scientifically invalid and false.

2. Toxic effects of fluoride via metabolism, on the teeth

a) Tooth eruption inhibition resp. delay of up to 6 or 7 months in fluoridated areas compared to areas with low or very low fluoride content in drinking water, proven by the attached paper by Ziegelbecker R. in "PROPHYLAXE" *2).

b) Tooth eruption delay (I remember 3 groups of about 6 or 7 years old children who received well-defined amounts of fluoride from 0, 1 and 2 sources - I already mentioned it above), presented as "caries reduction" on a poster at the ISFR Conference 1987 in Nyon/Switzerland, from which data it was easy to calculate that the differences in dental caries have been caused by tooth eruption delay and not by an increase of resistance against dental, and when the calculation was presented by myself during the poster discussion in front of all fluoridation experts in the full auditorium of a fluoride tablet producer, not a single expert opposed my clearly expressed opinion that **causing such a tooth eruption delay is probably nothing else than an intoxication of the children (clearly visible already at the "recommended" intake!!).**

I am sorry not to be able to cite the paper now, but on request I would try to find out and get the original paper (it was a thesis done in former East Germany) and repeat this calculation.

3. Very high probability for fluoride to cause cancer and/or to accelerate death from cancer

a) Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 30, number 40, paragraph 8, in part translated):

"Statistically there exist highly significant relations between the addition of fluoride to drinking water at the dosage recommended by dentists and the cancer death rate and the liver cirrhosis death rate. A possible causal relation cannot be excluded until today."

Remark:

This problem has not been investigated in more detail since that time. A causal relation would mean that even today's "recommended" intake of fluoride is far too high!

b) Compendium of summaries*3), attached (Ziegelbecker, 2003, Summaries of papers - attached, p. 32, number 43):

"Analysis of a relation between drinking water fluoridation and cancer mortality rate and cirrhosis of liver mortality rate from 1949 to 1970 in the USA. The increase of cancer mortality rates in 10 fluoridated US cities is by 115%, in 10 unfluoridated US control cities only by 10% above the US mean. Regression analyses show highly significant relation between the rate of the US population fluoridated by drinking water on the one hand and the cancer mortality rate, the age-adjusted cancer mortality rate and the cirrhosis of liver mortality rate on the other hand. A causal relation between drinking water fluoridation, cancer and cirrhosis of liver must be considered." (This paper is attached as "F-Cancer-gwf 1987")

c) Attached Compendium of Summaries number 47, p.34+35, also numbers 49, 50, 53;
The original paper is attached as "Nyon 1987 Fluoride-Cancer-USA": R. Ziegelbecker*, R. Ch. Ziegelbecker**, Graz On Water Fluoridation and its Relation to Cancer

Abstracts. International Society for Fluoride Research, XVIth Conference, ZYMA Auditorium, NYON, Switzerland, August 31 - September 2, 1987, p. (20)

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ABSTRACT (Poster Session)

The establishment of water fluoridation in a limited area suddenly changes living conditions of the inhabitants of this area by one factor (=systematic influence). Based on the authentic data of water fluoridation and cancer mortality in the USA, the increase of the cancer deaths is analysed in relation to the increase of fluoridated inhabitants. The analysis shows that there exists a significant connection, which is not correlated with the change in the number of population. **Within a short time, about three additional cancer deaths per 10,000 newly fluoridated inhabitants must be expected.**

SUMMARY OF THE PAPER:

Fig. 1 shows the increase of the cancer mortality rate in the USA between 1949 and 1970 ("Measured CMR"). A regression analysis shows that the measured CMR can be almost totally explained by only

two quantities: Rate of Cirrhosis of liver + Fluoridated percentage of US-Population. The problem is now to isolate the possible influence of water fluoridation and the influence of other factors, for example such as time trends, on the cancer mortality.

This possible fluoride effect may consist of a long-term effect as well as of a short-term effect. It is likely that it will be difficult to separate long-term effects of fluoride on the cancer death rate from all other influences. If there is a short term effect it can show up if there are sufficiently large (and quick) discontinuities in the amount of fluoride supply. Such discontinuities existed during the spreading of drinking water fluoridation in the USA 1950 to 1969.

In 9 different years we observe increases in the fluoridated population from 2% up to 6% of the total population. Fig. 4 shows that there is a significant dependence of increase in the number of cancer deaths on the increase in fluoridated people. There is no substantial time trend recognizable. There is also no influence due to changes in the total population number. There seems to be no other reasonable interpretation of Fig. 4 than a causal relation between putting fluoride into drinking water and observing an additional number of cancer deaths already in the same year. The increase of CD (Cancer Death) by about 4000 cancer death per year is not caused by fluoride.

The relation between the number of newly fluoridated people and additional cancer death does not change essentially if we consider the 2-years-average or if we include even smallest changes in fluoridation. Both is done in Fig. 5. This method indicates about 3,3 additional cancer deaths per 10000 newly fluoridated people (at the "recommended" concentration of fluoride in the drinking water!) which agrees quite well with the result of fig. 4.

Important: These results are not identical with the statement that fluoride would cause cancer, which we can not conclude from these diagrams. However, even if fluoride would not cause cancer diseases, this would not be a contradiction to our conclusion since the observed relation may also follow if fluoride would only be able to accelerate existing (cancer) disease.

Note that this investigation has not got the nature of an epidemiology study but that of a big experiment which is a premise for statements concerning causality.

d) Attached Compendium of Summaries number 56, p.44, paragraph 3:

The above findings are supported by a similar effect of fluoride in the Swiss City of Basle: (published in Soziale Medizin (SMZ) 17, No.3/90, 1990, p. 25-26; I am sorry that I cannot provide a copy in the moment)

3. Erhöhte Krebszuwächse in Basel nach Einführung der Fluoridierung: Auch die Basler Wasserfluoridierung ist nutzlos, wie von KREUZER und mir auf der Basler SGSG-Tagung am 2. Dez. 1989 gezeigt wurde. Der Kariesrückgang in Basel hat andere Gründe als die Fluoridierung. Wohl aber ergab die Analyse der mir vom Sanitätsdepartement zur Verfügung gestellten Krebsdaten (in Übereinstimmung mit den Ergebnissen aus weit umfangreicheren Daten aus den USA) einen besorgniserregenden Zusammenhang zwischen der Fluoridierung und den Krebstodesfällen in Basel. Das nachfolgende Diagramm zeigt die zeitliche Änderung des Anteils der weiblichen Krebstoten an der weiblichen Bevölkerung vor und nach Einführung der Wasserfluoridierung in Basel. In den 13 Jahren vor der TWF (1950-1962) lag der Zuwachsfaktor des Anteils weiblicher Krebstoter bei 2,38. Nach Einführung der TWF (im Mai 1962) erhöhte sich der Zuwachsfaktor in den folgenden 21 Jahren (1963-

1983) nahezu schlagartig auf 39,74; also um das 16-fache. Bei den Männern ist es ähnlich: Der Zuwachsfaktor stieg in der gleichen Zeit von 23,58 auf 49,7 an. Fazit: Die falschen Lehrmeinungen über die Fluoridierung gehören dringend korrigiert, die Zensur der Kritik und der Boykott durch die Zahnärzteorganisationen und "Fluorkommissionen" abgeschafft. Die Fortsetzung der nutzlosen und Fluorose- sowie Krebs fördernden, gesundheitsbelastenden Trinkwasserfluoridierung in Basle erscheint unverantwortlich.

Translation:

3. Elevated cancer increments in Basle after introduction of fluoridation: Also water fluoridation in Basle is useless, as shown by KREUZER and myself (ZIEGELBECKER) at the SGSG-conference in Basle on 2 December 1989. The lessening of dental caries in Basle results from other reasons than fluoridation. The analyses of cancer data, however, which were made available to me by the sanitary department, yielded (in agreement with the results from far more comprehensive data from the USA) an alarming connection between fluoridation and cancer deaths in Basle. The diagram shows the change of the percentage of female cancer deaths among the female citizens over time, before and after the introduction of water fluoridation in Basle. During the 13 years before water fluoridation (1950-1962) the increase factor of the percentage of female cancer deaths was about 2.38. After introduction of the drinking water fluoridation (in Mai 1962) the increase factor raised in the following 21 years almost suddenly to 39.74 which is the 16-times larger value! With the males the situation is similar, the increase factor raised during the same time from 23.58 to 49.7.

Summary:

The wrong doctrines about fluoridation should be urgently corrected, the censorship of critique and the boycott by dentists' organizations and "fluoridation commissions" must be abolished. The continuation (remark: water fluoridation was stopped in Basle in 2003) of the effectless fluoridation in Basle which promotes fluorosis and cancer and strains health appears to be irresponsible.

More details from the attached Compendium of Summaries number 57, p.45: Bei den 50 - 69-jährigen Baslern war die Krebstodesrate vor Beginn der TWF überhaupt fallend und ist dieser Trend nach Einführung der TWF in einen steigenden Trend an Krebstoten umgeschlagen.

Translation:

For 50-69 years old people from Basle the cancer death rate was declining before water fluoridation and has changed to a raising trend of cancer deaths after introduction of the drinking water fluoridation.

4. Material sent to the EFSA by my father (who died in January 2009) already in 2006 which contains a heavy critique of the EU's Scientific Committees' "Opinions" on the tolerable upper intake level of fluorides, and in details even more competent information needed for an objective risk assessment of chemicals used for drinking water fluoridation - I'll send this material to you in a separate email.

Here are my personal contributions on the lack of efficacy of fluorides in drinking water, based on credible scientific material and original data which has - at least in part - not been easily accessible to Health Canada:

Many people still think that fluorides are beneficial in the prevention of dental caries (tooth decay), however:

1. It has not sufficiently been discussed in the scientific community if the main effect of ingested fluoride, which is an eruption delay of permanent teeth resulting in less teeth at same age as well as in a shorter exposition time of the smaller number of teeth to cariogenic influences if compared at same age (therefore a "**quadratic**" and consequently quite strong effect, clearly resulting in less dental caries if compared with fluoride-free children at same age, but not less dental caries if compared with children of same tooth age and number of the teeth!), may really be considered as a "benefit".

According to my father's first papers this effect is connected with the fact that the (later erupted) "fluoridated" set of teeth normally shows even a higher(!) relative increase of dental caries than a non-fluoridated set, which means at least that, if a non fluoridated and a fluoridated set of teeth with an equal level of dental caries are compared, in the fluoridated set of teeth dental caries will progress quicker(!) than in the non fluoridated set.

According to my father the potential of this higher susceptibility is thus high, however, that during lifetime of persons the fluoridated ones may "overtake" the non-fluoridated ones concerning dental caries.

The eruption delay as well as the higher susceptibility to dental caries of fluoridated sets of teeth were investigated in the attached paper ("PROPHYLAXE"), which I (and not only I) therefore consider to be a fundamental one for fluoridation research. It covers the fluoridation experiments of Grand Rapids, Newburgh, Muskegon, Kingston, Aurora, New York - all with the same result. The higher susceptibility to dental caries after equal exposure, as far as I know, has not been considered/regarded in a single one of those studies which led to the recommendations of fluoridation by the WHO and other health and dentists' organizations which are therefore, and also for some other reasons, scientifically not tenable.

For the mechanism why fluoridated teeth are or may be more susceptible to dental caries at least at higher age there exists a simple explanation, and all pieces of this puzzle fit very well together even if I am not able to cite more relevant literature now (since I do no more research on fluoridation). But I testify that at the ISFR Conference 1987 at Nyon another researcher (I remember he was a dentist who declared to be "still pro-fluoride") communicated to me that he had investigated the mineralization velocity and enamel structure for fluoridated teeth: Fluoridated teeth would stop mineralization during tooth formation while fluoride is in the saliva/in the mouth. When fluoride disappears, mineralization runs quicker, but nevertheless the whole process ends with a thinner tooth enamel in which the crystallites are not as well ordered as without fluoride (I know that the latter is also supported by some published studies). This piece of the puzzle fits well to the decreased resistance of fluoridated teeth against dental caries which was first found by my father Rudolf Ziegelbecker in the attached paper and fits as well to the "fluoride bombs" described e.g. by Dr. Bill Osmunson in his 2007 guest editorial in Fluoride: http://www.fluorideresearch.org/404/files/FJ2007_v40_n4_p214-221.pdf

Not only my father's scientific paper(s) give reason for serious doubts about a benefit, but also a remarkable event at the Nyon 1987 ISFR conference during the discussion of a poster which I already mentioned at the beginning was 100% consistent with my father's findings: Using the presented data I could spontaneously show on the blackboard that the differences in dental caries between the three groups were consistent with the (in this study in fact also) observed tooth eruption delay. The fluoridated groups in the experiment had far less teeth at an age between 6 and 8, but the ratio of observed dental caries and (=divided by) the exposure to dental caries (i.e. the integral of the number

of teeth times time since eruption) turned out to be about the same in the fluoride-free, the medium fluoridated and the strongly fluoridated group, which means that fluoride had not increased the resistance of the teeth against dental caries. And I testify that my statement in front of the full auditory that this eruption delay therefore should rather be considered to be a sign of intoxication than a real caries reduction, was not opposed by any expert, not even by the author of this study.

2. Three other completely unbiased, independent validation tests were done by my father and myself in order to check the results described above and to isolate an eventual benefit of water fluoridation by "repeating" the method used by Dean et al. in his famous 21 cities study on a statistical basis, this means: not by considering and controlling for, but by averaging over all cariogenic influences other than natural fluoride in the drinking water, instead. For these tests I developed a priori (from low-level probability considerations) the "naturally suited" net of coordinates in which dental fluorosis as well as dental caries curves should behave (and indeed behave) quite linearly. My father intuitively used a probability coordinate frame which yields essentially the same result (published in Fluoride, Fluoride 1981;14(3):123-8. (Erratum in: Fluoride 1982;15(1):49)
http://www.fluoridresearch.org/143/files/FJ1981_v14_n3_p098-146.pdf
- print pages 22-27 of this PDF document!)

The results were the following:

a) concerning dental fluorosis: No dosage of fluoride in drinking water seems to be "harmless". I attach also my paper "**Lognormal Distributions....**"

b) concerning dental caries values found in the entity of fluoridation studies before 1987: Even though many data published were verifiably selected in the single fluoridation studies, the "benefit" of water fluoridation in 12-14 years old children is zero or even below zero at least for concentrations above 0.3 ppm fluoride in drinking water. (See my attached paper "Lognormal Distributions....") (Busse's critique of this method is unjustified, refuted and outdated by the WHO data of 1987 - see next point "c)" - and - as I learned today - by a recent ecological study by Ekstrand et al. with Danish adolescents which appeared in 2009 in Community Dent Oral Epidemiol, John Wiley and Sons, confirms the mentioned results down to 0.2 ppm)

c) concerning dental caries values for 12 years old children gathered at WHO in 1987 for locations where also values for (natural) fluoride in drinking water were available at the WHO headquarter - with the restriction that at least 4 data points should be available for the considered country: The "benefit" of water fluoridation again turns out to be zero, this time not only above 0.3 ppm as (possibly) in the case of (sometimes highly selected) data from fluoridation studies, but already from below 0.1 ppm onwards. (See my attached paper "WHO data....")

d) As described in the attached In Memoriam, Rudolf Ziegelbecker (my father) has intensively re-analysed Dean's original data (which were most relevant for fluoridation) and had found a strong correlation between dental caries values and lactobacillus acidophilus while in that multivariate multi-step regression and residues analysis the fluoride variable was of zero significance(!). These results were first presented at an ISFR conference in Budapest and later in letters.

Furthermore, my father found a very strong correlation between dental caries values and Na and K as Na concentrations in 10 of Dean's 21 cities (for which theses data were available) which explains a range of a factor of 4(!) in the caries findings: See fig. 19 page 22 in the attached document "Codex

Alimentarius.doc".

This result means, that - if the dentist Dean would have done this sort of analysis before 1941, he would never have had the idea to attribute the caries differences to fluoride and fluoridation would have never occurred!!

According to our knowledge the above facts also hold for any other ingested fluoride as from tablets, salt and food in general.

For "local" applications like fluoridated tooth pastes and others I am not an expert, but as far as I see the experimental results (e.g. that mentioned in the EU's SCCP opinion SCCP/0882/05 p.5 Ref. S26: No caries reducing effect at lower F-concentration in toothpastes) would agree well with my personal suspicion that in local applications fluoride acts almost only by inhibiting the metabolism of caries-inducing bacteria (~"poisoning" them). There are documents supporting this view.

Please bear in mind that the characteristics of science is that a single experiment which contradicts a theory or model falsifies this theory or model if this experiment is repeatable. Any of the analyses mentioned above can be repeated.

Their results would not be a "wonder" and would be trustable for anybody who studies the analyses done by my father of the fundamental errors and deficiencies which occurred in the premises(!), methods and conclusions of a large number of "successful" fluoridation studies. In our case, every unbiased effort of isolating a benefit of fluoridation arrived at a lack of the asserted benefit. Equally many others, e.g. Bill Osmunson, could not find any benefit of fluoridation:
http://www.fluorideresearch.org/404/files/FJ2007_v40_n4_p214-221.pdf

Many people think that the potential for negative health effects that may result from excessive intake, have put in question the practice of intentional water fluoridation and only in some parts of the European Union and elsewhere (USA). This view is incomplete, which you can see from my father's book "Vorsicht Fluor" (by Dr.med. Max Otto Bruker and Rudolf Ziegelbecker, 7th edition 2005, 480 pages, emu-Verlag, 56112 Lahnstein, Germany), which exists only in German, unfortunately, and from the attached In Memoriam (which is also available via http://www.fluorideresearch.org/423/files/FJ2009_v42_n3_p162-166.pdf) and from the attached Biography of Rudolf Ziegelbecker, which was essentially written by himself in 2003.

My personal knowledge on this subject is the following:

1. At all hearings, discussions and decision processes on a scientific or at least on an elevated level the promoters' experts had to admit that they were not able to tell how large the actual share of fluoridation was among the variety of measures and influences which altogether had led to the observed differences in dental caries in each experiment stressed as a proof for the benefits of fluoridation by them, or
2. my father (Rudolf Ziegelbecker sen.) could **prove that the "caries reduction" asserted to fluoridation was due to other influences without doubt**, or
3. my father could prove that at least one delegate to the WHO had reported a non-existing "success" of

fluoridation, this report having certainly contributed to a recommendation of fluoridation by the WHO, or

4. my father could show that the author of the 21 cities' study had specifically selected data out of a large number of known possible data points for "proving" a success of fluoridation, or

5. in the case of Kassel/Germany, after 5 or 6 "success" reports had appeared in favour of fluoridation, my father published the fact that the **"proof" for the "benefit" of drinking water fluoridation was done predominantly on a population which had never received fluoridated water** (wrong plans of the water pipes were used in Kassel) which led to the immediate cessation of the water fluoridation there, or

6. my father could prove (in Graz) that, if the data provided by fluoridation promoters to politicians had been correct, children would have had at least 40 teeth (instead of 28 or eventually up to 32) which led to a definitive "no" from the City of Graz to all attempts of a re-introduction of tablet fluoridation in primary schools after mandatory tablet fluoridation had been halted and dental caries had even decreased after the halt according to the official data of the school dentistry, or

7. after years of doubt and health concerns by the Czechoslovakian water experts and by the Academy of Sciences my presentation **"Lognormal Distributions"** which suggests an **approximate zero "benefit" of fluoridation** (document attached) and a massive, unexplained correlation between fluoridation and cancer found by my father (I think I remember it was something like a **99.9% correlation between the size of the "yearly fluoridation increase steps" and the size of the subsequent "cancer deaths increase steps" in the USA**, the causal relation of which has neither been searched nor found until today) were the true reasons for the almost immediate cessation of water fluoridation in the capital Prague and in Ceske Budejovice after a short check by the Academy of sciences, or

8. more than once my father could show that **costs for dental health had increased more where fluoridation was practised, instead of decreased** as predicted by promoters, or

9. in spite of horror visions of fluoridation promoters, dental caries was nowhere observed to increase after a halt of fluoridation (according to the reports my father received from the cities in question. See his letter to the editor of Fluoride in http://www.fluorideresearch.org/313/files/FJ1998_v31_n3_p129-174andS1-S34.pdf and print the PDF-document pages #37-40). If an increase in dental caries after stopping a fluoridation would have been the regular case, this news would have been spread all over the world by fluoridation promoters and also would have led to a correction of my and my father's scientific opinion. Of course, due to an eventual reversal of eruption delay children might regain a larger number of permanent teeth at early ages like 5, 6 or 7 connected with more caries at young age, but probably better health at higher age.

Or,

10. after 40 years of duration the most famous water fluoridation of Central Europe, in Basle/Switzerland, was stopped in 2003 by the Great Council of Basle because, after sound scientific critique of this "experiment" by my father and by the **"Forum for Responsible Application of Science"** (translated title), in spite of 5 years' time all the fluoridation experts were not able to prove without doubt that fluoridation is effective in Basle (see attached document **"Basle stops water**

fluoride..").

The fact that the doubts about efficacy were a principal reason for ending many fluoridations in Europe and were considered at least equally to the doubts concerning health risks.

Final Comment:

The above contains only a few facts I witnessed myself and which are not widely known, but should be known to today's experts assessing this issue. Of course there is much more evidence for a lack of a true benefit of fluoridation, e.g. fig. 1 in the guest editorial of Dr. Bill Osmunson (http://www.fluorideresearch.org/404/files/FJ2007_v40_n4_p214-221.pdf), all of it well agreeing with my father's (Rudolf Ziegelbecker's) findings which I in brief outlined above (see also the attached biography and the attached In Memoriam).

All those facts should lead to a reformulation of Canada's policy concerning fluoridation at a time when more than 2000 professionals and experts, among them a novel prize winner, urge a re-investigation of fluoridation in the USA and a worldwide stop of fluoridation.

It is essential and part of true scientific work that also the above background information as well as the attached material - which has not been considered by Health Canada until now - is taken into account when weighing the hazard potential against the seeming and transient "benefits" of fluoridation (described above) since this background information is important to understand why that **scientifically uncontrolled medical literature in favour of fluoridation developed** and why, in spite of the massive resources invested, so many countries in the EU do not or not any more practise intentional fluoridation.

Contact me if there are questions, please.

Sincerely,
Rudolf Ziegelbecker jr.