New York State Department of Health

Minutes of Meeting

Technical Advisory Committee on the Fluoridation of Water Supplies
New York City, May 28, 1956

Present at Meeting

Advisory Committee Members

Dr. Harold C. Hodge, Chairman
Dr. Katherine Bain
Dr. Henry L. Barnett
Dr. David P. Barr (ad hoc)
Dr. John Caffey
Dr. John W. Fertig
Dr. David Seegal (ad hoc)
Dr. Samuel Z. Levine

United States Public Health Service

Dr. F.A. Arnold, Jr.
Dr. Nicholas C. Leone

New York State Department of Health

Dr. David B. Ast
Dr. William G. Beadenkopf
Dr. John A. Degen, Jr.
Mr. Irving Goldberg
Dr. Frank R. Hopf
Dr. David J. Smith
Dr. V.A. VanVolkenburgh

New York City Department of Health

Dr. Arthur Bushel

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The Technical Advisory Committee on the Fluoridation of Water Supplies met on May 28, at 2:00 p.m. in the New York State Department of Health offices, 270 Broadway, New York City. Drs. Seegal and Barr, ad hoc members of the committee, were invited to the meeting because of the need to plan studies of adults exposed to fluoridated water.

Dr. Hodge, as chairman for the session, stated that the purpose of this 11th meeting of the committee was to review the ten year Newburgh-Kingston Caries-Fluorine Study in the light of arguments raised by opponents of professional stature, and to consider any future studies on the adult population in the two cities.

The first item on the agenda was a review of the final dental data from the Newburgh- Kingston Study. This was presented by Dr. Ast. Reprints of the ten year data were distributed to those attending the meeting. He then brought up the fact that the opponents of fluoridation, in particular Dr. Exner, a radiologist, questioned the value of the DMF index as an accurate measure of caries experience. Dr. Exner felt that one of the inadequacies of the DMF was that it failed to take lesion size into account when evaluating caries.

Dr. Ast indicated that the size of the lesion was unimportant, what was important was the fact that the tooth had suffered a carious lesion. Dr. Bushel suggested that the data, pointing out the location of the lesions, might be useful. Dr. Arnold asserted that he saw no sense in breaking down the DMF to such fine degrees. He emphasized that the DMF has proved to be a valid index and was quite acceptable. Further, he felt that even if it were broken down, Dr. Exner would still be dissatisfied.

Dr. Ast mentioned Dr. Exner's argument that caries was only delayed by fluoridation. Exner has asserted that this is shown by proper projection of Newburgh-Kingston data. Exner's "authority" for this argument is an electrical engineer named Konstantin Paluev, residing in Pittsfield, Massachusetts, who used both Newburgh-Kingston and Grand Rapids DMF data to plot a caries experience curve according to age. He then projected this curve into the future to show that the caries experience of children drinking fluoridated water actually increased as they grew older, rather than being of a lesser magnitude. Mr. Goldberg pointed out that Paluev and others have failed to take into consideration the observed DMF differences between age groups which were due in part to unequal periods of exposure to fluoridated water.

Dr. Fertig emphasized that all the fluoridation studies had shown good reproducibility of results.

The question of the validity of protection into adult life was brought to discussion by Dr. Hodge. In reply Dr. Ast and Dr. Arnold both cited the studies conducted among adults in Colorado Springs and Boulder, Colorado, which they felt answered this question satisfactorily.

Dr. Fertig asked whether many of the 6-9 year olds in the Newburgh-Kingston Study were residents after birth. Dr. Ast and Mr. Goldberg replied that three-quarters of the children were residents after birth. Dr. Fertig then asked if the results would have been about the same if only those children were used who had been exposed

to fluoridated water for a period of ten years from birth. Dr. Arnold replied that he thought the results would have been similar in both the Newburgh-Kingston and Grand Rapids studies. It was pointed out that the final Newburgh data on the 6-9 age group were based only on those children having a history of continuous fluoride ingestion from birth.

The chairman then called on Dr. Schlesinger to report on the medical aspects of fluoridation. Dr. Schlesinger reviewed the pediatric studies conducted as part of the Newburgh-Kingston Study and stated that insofar as these studies could determine, no medical hazard existed in drinking fluoridated water.

Dr. Caffey asked if there were any data on the onset of menstruation among those children who had drunk the fluoridated water. Dr. Schlesinger replied that there were no statistically significant differences in the recorded age of onset of menstruation in girls in Newburgh and Kingston. Dr. Caffey then said that he believed that menstruation onset data would be better than the bone picture for a study of maturation.

Dr. Schlesinger next gave the reasons for past concentration on pediatric aspects of fluoridation. It was felt that untoward reactions from the ingestion of fluoridated water would probably first be apparent during the period of rapid growth and development, hence the concentration on young children. However, an adult study now appears indicated especially since the opposition voices much concern over the cumulative effects of fluorides on adults.

Dr. Schlesinger then enumerated some of the charges made by Dr. Waldbott concerning toxic manifestations resulting from the ingestion of fluoridated water. Dr. Schlesinger contended that these charges had little basis in fact. Further, he reported the Wayne County Medical Society, of which Dr. Waldbott is a member, had examined these charges and found nothing in them which could point an accusing finger at water fluoridation as being of a toxic nature. Dr. Levine informed the committee that he had spoken to Dr. Wolf, a New York City physician, who believes that fluoridated water is toxic. Dr. Wolf said he was treating patients with menstrual disorders due to fluorine ingestion and that his patients with such disorders are cured when taken off fluoridated water. He asserted further, that fluoride interferes with enzyme systems. Dr. Wolf admitted that he has not published his observations.

The committee felt that such nonsense should not be taken too seriously. Dr. Seegal asked whether people with glomerular disease would store more fluoride. Dr. Hodge cited his work among human adults and animals. Both these studies indicated there was good fluoride excretion even in the presence of kidney disease. Dr. Seegal added that perhaps glomerular nephritics might have a valid reason for concern because of the retention of substances in this disease.

Dr. Hodge wondered if autopsy bone samples could be obtained from Newburgh and Kingston, and those measured for fluoride retention. Dr. Leone answered that he has autopsy data from sudden deaths vs normal deaths, and also data on renal stones. He is collecting additional data and will have some information available shortly.

The subject of mottled enamel was raised by Dr. Hodge. He thought it would be wise to redefine mottled enamel ... perhaps only refer to mottled enamel in moderate and severe cases ... to place the subject in its proper light.

Dr. Leone then reviewed the Bartlett-Cameron Studies. One of the most significant findings of this adult study was that in the high fluoride area (8 ppm) there appeared to be less osteoporosis among older women. This could be viewed as a beneficial adult effect. The study also revealed that ingested fluoride in concentrations above 8 ppm led to definite bone changes, apparent in the pelvic bones and dorsal spine. One of the signs of change was a courser trabeculation of the bone affected. However these changes were not pathognomonic.

Dr. Leone then discussed some other activities being conducted in the study of fluoride effects by the Public Health Service. These are: (1) Human autopsy studies relative to fluoride deposition in tissues, (2) Framingham, Massachusetts Study ... of 5,288 people in a non-fluoride city ... investigation of fluoride deposition in bone ... and comparison with findings in fluoride areas, (3) Renal Stone Study ... comparison of fluoride deposition in renal stone in fluoride and non-fluoride areas, (4) Metabolic Studies re: nephrosis, nephritis, etc... only renal shutdown cases show deviation from normal.

In a further reference to the Bartlett-Cameron Study, Dr. Leone revealed that in the 1943 examinations, young boys showed courser bone trabeculation. However, in the 1953 examinations, these same boys had a normal bone picture.

Dr. Hodge interjected that he thought a study of the hip-fracture experience in Bartlett and Cameron would be interesting. Dr. Leone answered that no hip fracture cases nor primary renal disease cases were found in the high-fluoride area.

In response to an inquiry, Dr. Leone stated that the May 1956 issue of Public Health Reports reported on some of the fluoride toxicology studies being conducted at the National Institutes of Health. Dr. Leone added that there appears to be a drop in serum calcium on massive fluoride ingestion... which bears further investigation.

Dr. Hodge then asked for a discussion of what can be done in Newburgh and Kingston in the field of adult studies.

Dr. Seegal discussed the measurement of osteoporosis. He also suggested that a check be made on malignancy deaths due to bone malignancies. Such a study would be particularly appropriate for sarcomas of bone. Dr. Leone reported that the National Institutes of Dental Research had already investigated this field. Dr. Seegal expressed the opinion that he felt the studies completed had done a fine job of covering diseases and providing answers for the safety of fluoridation. He could only now suggest a break-down of neoplastic groups for further assurance.

Dr. Levine brought up the point of encrusted water distribution mains, and fluoride storage in the encrustation, and its subsequent release therefrom. Dr. Ast answered that there was little danger from this source of fluoride affecting the 1 ppm levels. Newburgh and other fluoridated cities have experienced no such difficulties. Dr. Arnold reported that Bartlett had not had any such difficulties.

Dr. Leone proposed a large scale, well controlled study in Newburgh and Kingston on adults, to get clinical data on the possible effects of fluorides. This study would serve to supplement the Bartlett-Cameron and Framingham studies. Dr. Hodge agreed that this would be a very good study. Dr. Bain thought it would be hard to get people to enter such a longitudinal study. However, Dr. Leone felt that

if medical groups backed this study, adults would go along with it. He cited past experience in other areas where such studies have been conducted.

Dr. Degen thought such a study could be conducted in industrial plants. Dr. Leone suggested a plan whereby the parents of the Newburgh-Kingston study children could be used as a stable, and unbiased group.

Dr. Beadenkopf agreed with Dr. Leone's plan. He also suggested that hip fracture experience data be gotten from both cities. He also wondered if there was a possibility of losing people to suburban areas which were non-fluoridated. The answer to that question was that such a possibility does exist, but it would not present too much of a problem to a study as suggested.

Dr. Caffey asked if such studies are presently under way in any area. Dr. Leone answered in the negative.

Dr. Barr wondered if the committee had met to still opposition claims or to outline a study to investigate toxicity. He asserted that he did not think anyone at the meeting felt fluoride at the recommended level was toxic... and he further felt that mortality statistics were good to use as a study. His impression was that we do not need to go on further to prove non-toxicity.

The members of the committee were then asked to express their individual opinions on what remained to be done.

Dr. Caffey stated that he would like to see something done to answer foreseeable questions. He felt an adult study should be done. However, he also felt that it was important not to overdo it ... since it would be impossible to answer all questions raised.

Dr. Levine indicated he would like to see an adult study done on a positive approach ... perhaps on osteoporosis. It seems people are worried about effects on the older age groups, and the infirm. Dr. Bain thought we could never answer all questions raised.

Dr. Hodge said he would like to have more definitive data on fluorides re: (1) Adult teeth (2) Adult health.

Dr. Levine answered this by stating he felt nature had already done a good study on people living for generations on fluoridated water. He repeated, however, that he would like to see a study done on the old and infirm.

Dr. Hodge asked if it would be good to do a study using the jaw picture. Dr. Leone answered that this would not be as good because of other factors.

The chairman then closed the meeting with the proposal that Dr. Ast submit to the committee a proposed adult study.