

Volume 29
Number 2
Pages 57-128
May 1996

FLUORIDE

JOURNAL

of the

International

Society for

Fluoride

Research



KAJ ROHOLM

THE INTERNATIONAL SOCIETY FOR FLUORIDE RESEARCH

President

Prof Ming-Ho Yu
Western Washington University
Bellingham WA 98255, USA

Vice President

Dr Miklos Bély
National Institute of Rheumatology
Budapest, Hungary

Second Vice President

Prof N B K Yoshitake
Shiga University of Medical Science
Shiga-Ken, Japan

Secretary

Prof Gene W Miller
Biology Department
Utah State University
Logan UT 84322-5305, USA

Treasurer

Dr John Colquhoun
81A Landscape Road
Mt Eden, Auckland 4
New Zealand

EDITORIAL BOARD

Dr D J Ballentyne
University of Victoria
Victoria BC, Canada

Dr Miklos Bély
National Institute of Rheumatology
Budapest, Hungary

Prof A W Burgstahler
University of Kansas
Lawrence KS, USA

Prof Shouren Cao
Chinese Academy of
Preventive Medicine
Beijing, China

Dr M Chikuma
Osaka University of
Pharmaceutical Sciences
Osaka, Japan

Dr John Colquhoun
Education Department
University of Auckland
Auckland, New Zealand

Dr John A Cooke
University of Natal
Durban, South Africa

Dr Edward Czerwinski
Kracow Academy of Medicine
Kracow, Poland

Dr Mark Diesendorf
Australian National University
Canberra, Australia

Dr G Embery
University of Wales Medical College
Cardiff, Wales UK

Dr Richard G Foulkes
Abbotsford BC
Canada

Prof J Franke
Medical Academy
Erfut, Germany

Prof G Neil Jenkins
Newcastle upon Tyne
England

Dr Y Kaneko
Showa University School of Dentistry
Tokyo, Japan

Dr K Kono
Osaka Medical College
Osaka, Japan

Prof Jerzy Krechniak
Medical University
Gdansk, Poland

Dr K A V R Krishnamachari
Andhra Pradesh Projects Office
Hyderabad, India

Prof Lennart Krook
Cornell University
Ithaca NY, USA

Dr John R Lee
9620 Bodega Hwy,
Sebastopol CA, USA

Prof C James Lovelace
Humbolt State University
Arcata, California USA

Dr Zygmunt Machoy
Pomeranian Medical Academy
Szczecin, Poland

Prof G W Miller
Utah State University
Logan, Utah USA

Prof F Murray
Murdoch University
Murdoch WA, Australia

Dr James C Pushnik
California State University
Chico, California USA

Dr B P Rajan
Madras Dental College
Madras, India

Dr Bruce Spittle
University of Otago School of Medicine
Dunedin, New Zealand

Dr Jörg Spitz
Dept. of Nuclear Medicine
Wiesbaden, Germany

Prof A K Susheela
All India Inst. of Medical Sciences
New Delhi, India

Prof S P S Teotia
LLRM Medical College
Meerut, India

Prof H Tsunoda
Iwate Medical University
Morioka, Japan

Prof Zan-Dao Wei
Guiyang Medical College
Guizhou, China

Dr Sally W Wheeler
Hawkesbury Agricultural Research Unit
Richmond NSW, Australia

Prof Y Yoshida
Osaka Medical College
Osaka, Japan

Prof N B K Yoshitake
Shiga University of Medical Science
Shiga-Ken, Japan

Prof Ming-Ho Yu
Western Washington University
Bellingham, WA USA

FLUORIDE

QUARTERLY JOURNAL OF

THE INTERNATIONAL SOCIETY FOR FLUORIDE RESEARCH

Editor: Dr John Colquhoun	Auckland, New Zealand
Co-Editors: Prof A W Burgstahler	Lawrence, Kansas, USA
Prof G W Miller	Logan, Utah, USA
Dr Bruce Spittle	Dunedin, New Zealand

CONTENTS

EDITORIAL

NEUROTOXICITY OF FLUORIDE 57-58

XXIst CONFERENCE

BUDAPEST, HUNGARY, AUGUST 25-28 58

RESEARCH REPORTS AND REVIEWS

THE EFFECTS OF FLUORIDE, ALONE AND IN COMBINATION
WITH SELENIUM, ON THE MORPHOLOGY AND HISTO-
CHEMISTRY OF SKELETAL MUSCLE

Y X Pang, Y Q Guo, P Zhu, K W Fu, Y F Sun and R Q Tang, China 59-62

INVESTIGATIONS OF SOFT TISSUE FUNCTIONS IN
FLUOROTIC INDIVIDUALS OF NORTH GUJARAT

M Michael, V V Barot and N J Chinoy, India 63-71

FLUORIDE INHIBITION OF [2-¹⁴C]THYMIDINE INCORPORATION
INTO DNA IN MUNG BEAN SEEDLINGS

A Narita, Y Nakamura, A Shigematsu and M-H Yu, Japan and USA 72-76

FLUORINE, SELENIUM, SULPHUR AND CARBON
CONTENTS OF COAL IN HUBEI PROVINCE

M J Li and S Z Tang, China 77-78

X-RAY ANALYSIS OF 80 PATIENTS WITH SEVERE ENDEMIC
FLUOROSIS CAUSED BY COAL BURNING

Z P Zhao, M B Yuan and G F Liu, China 79-81

DEVELOPMENTS IN THE ANALYSIS OF FLUORIDE 1993-1995

M L Wen, Q C Li and C Y Wang, China 82-88

THERMODYNAMIC ANALYSIS OF AIRBORNE FLUORIDE INDUCED
DETERIORATION OF MARBLE AND PORTLAND CEMENT

R Shrivastav and S Shrivastav, India 89-94

REPORT OF 15th SEMINAR OF THE JAPANESE SOCIETY FOR
FLUORIDE RESEARCH, SENDAI, JAPAN, NOVEMBER 14, 1995

Kenji Akiniwa, Japan 95-96

continued following pages

LITERATURE REVIEWS

PLAGUED NO MORE: HOW 50 YEARS OF FLUORIDES HAVE
REDUCED CARIES DRAMATICALLY IN THE WEST
(Lead article in *Oral Health Care Report Vol. 6 No. 1 1996*)

Reviewed by L H R Brett, New Zealand 97-98

FLUORIDE IN DENTISTRY (2nd Edition)
Ole Fejerskov, Jan Ekstrand and Brian A Burt (Editors)
(Munksgaard, Copenhagen 1996)

THE GREATEST FRAUD: FLUORIDATION
Philip R N Sutton (Susan Sutton, Lorne 1996)

Reviewed by John Colquhoun, New Zealand 99 -100

ABSTRACTS

Non-skeletal effects

GEOCHEMICAL RISK FACTORS FOR MENTAL FUNCTIONING, BASED
ON THE ONTARIO LONGITUDINAL STUDY OF AGING (LSA)
W F Forbes, S Lessard and J F Gentleman, Canada 101

ENVIRONMENT AND THE GENITOURINARY TRACT M J Droller, USA101-102

DEVELOPMENTAL TOXICITY OF SODIUM FLUORIDE IN RATS
T F X Collins, R L Sprando, M E Shackelford *et al*, USA 102

HISTORICAL COHORT STUDY OF SPONTANEOUS ABORTION
AMONG FABRICATION WORKERS IN THE SEMICONDUCTOR
HEALTH STUDY - AGENT-LEVEL ANALYSIS
S H Swan, J J Beaumont, S K Hammond *et al*, USA 103

HYDROFLUORIC ACID-INDUCED SKIN NECROSIS [French]
V Saada, M Patarin, S Sans and P Saiag, France103-104

APOPTOTIC CELL DEATH FOLLOWING EXPOSURE
TO FLUORIDE IN RAT ALVEOLAR MACROPHAGES
S Hirano and M Ando, Japan 104

BRONCHIAL RESPONSIVENESS, EOSINOPHILIA, AND
SHORT TERM EXPOSURE TO AIR POLLUTION
V Soyseth, J Kongerud, P Broen *et al*, Norway 104-105

SEVOFLURANE List of published papers 105

Analysis and chemistry

VALIDATION OF AN ION SELECTIVE ELECTRODE SYSTEM
FOR THE ANALYSIS OF SERUM FLUORIDE ION
E B Duly, S R Luney, T R Trinick *et al*, Northern Ireland 106

CRITICAL STUDY OF FLUORIDE WATER INTERACTIONS
S S Xantheas and L X Dang, USA 106

Effects on bone

CALCIUM DEFICIENCY IN FLUORIDE-TREATED OSTEOPOROTIC
PATIENTS DESPITE CALCIUM SUPPLEMENTATION
B A Duresmith, S M Farley, S G Linkhart *et al*, USA 107

EFFECTS OF LOW-DOSE LONG-TERM SODIUM FLUORIDE PREVENTIVE
TREATMENT ON RAT BONE MASS AND BIOMECHANICAL PROPERTIES
Y Jiang, J Zhao, R Vanaudekercke *et al*, Belgium 108

EFFECTS OF SODIUM FLUORIDE AND ALENDRONATE ON THE BONE MINERAL IN MINIPIGS P Fratzl, S Schreiber, P Roschger <i>et al</i> , USA	108-109
GENERALIZED OSTEOPATHY WITH PATHOLOGICAL FRACTURES IN A PATIENT WITH LONGTERM EXPOSURE TO FLUORINE-CONTAINING PLASTICS [German] W Rhomberg, F Bohler, A Vith and G Breiffellner, Austria	109
SKELETAL FLUOROSIS IN BONE INJURY CASE S L Choubisa and R Verma, India	110
PRE-TREATMENT OF TITANIUM IMPLANTS WITH FLUORIDE IMPROVES THEIR RETENTION IN BONE J E Ellingsen, Norway	110
ALUMINUM POTENTIATES THE EFFECT OF FLUORIDE ON TYROSINE PHOSPHORYLATION AND OSTEOBLAST REPLICATION <i>IN VITRO</i> AND BONE MASS <i>IN VIVO</i> J Caverzasio, T Imai, P Amman <i>et al</i> , Switzerland	111
COMPARISON OF NONRANDOMIZED TRIALS WITH SLOW-RELEASE SODIUM FLUORIDE WITH A RANDOMIZED PLACEBO-CONTROLLED TRIAL IN POSTMENOPAUSAL OSTEOPOROSIS C Y C Pak, K Sakhaee, N H Bell <i>et al</i> , USA	112
BIPHASIC SODIUM FLUORIDE EFFECTS ON BONE AND BONE MINERAL. A REVIEW P T Cheng, S M Bader and M D Grynpas, Canada	112
TREATMENT OF POSTMENOPAUSAL VERTEBRAL OSTEOPENIA WITH MONOFLUOROPHOSPHATE - A LONG-TERM CALCIUM-CONTROLLED STUDY M Gambacciani, A Spinetti, F Taponco <i>et al</i> , Italy	112
EFFECTS OF FLUORIDATED DRINKING WATER ON BONE MASS AND FRACTURES: THE STUDY OF OSTEOPOROTIC FRACTURES J A Cauley, P A Murphy, T J Riley and A M Buhari, USA	112
FLUORIDE IN DRINKING WATER AND THE BONE MINERAL DENSITY OF WOMEN IN TAIWAN C F Lan, I F Lin and S J Wang, Taiwan	112
Dental abstracts	
INFANTS FLUORIDE INGESTION FROM WATER, SUPPLEMENTS AND DENTIFRICE S M Levy, F J Kohout, M C Kiritsy <i>et al</i> , USA	113
RISK OF FLUOROSIS IN A FLUORIDATED POPULATION - IMPLICATIONS FOR THE DENTIST AND HYGIENIST D G Pendrys, USA	114
FLUORIDE SUPPLEMENT USE BY CHILDREN IN FLUORIDATED COMMUNITIES D G Pendrys and D E Morse, USA	114
RISK FACTORS FOR DENTAL FLUOROSIS IN PEDIATRIC DENTAL PATIENTS M C Skotowski, R J Hunt and S M Levy, USA	115
FLUORIDE CONTENT OF INFANT FORMULAE IN AUSTRALIA M Silva and E C Reynolds, Australia	115-116
INFLUENCE OF FLUORIDE IN SALIVA DURING THE EARLY CARIOGENIC CHANGES IN THE ENAMEL OF BOYS AND GIRLS J H Woltgens, E J Etty, R J Gruythuysen and W G Geraets, Netherlands	116-117
pH-CYCLING OF ENAMEL AND DENTIN LESIONS IN THE PRESENCE OF LOW CONCENTRATIONS OF FLUORIDE J M Tencate, M J Buijs and J J M Damen, Netherlands	117

MECHANISTIC UNDERSTANDING OF ENAMEL
MINERALIZATION UNDER FLUORIDE REGIME
T Aoba, Y Taya, A Sato *et al*, Japan 118

THE EFFECT OF FLUORHYDROXYAPATITE-DERIVED FLUORIDE
ON ACID PRODUCTION BY STREPTOCOCCI
N Guha-Chowdhury, Y Iwami, T Yamada and E I F Pearce, New Zealand ... 118-119

ANTIMICROBIAL ACTIONS OF FLUORIDE
FOR ORAL BACTERIA [Review] R E Marquis, USA 119

ACIDULATED PHOSPHATE FLUORIDE TREATMENT AND FORMATION OF
CARIES-LIKE LESIONS IN ENAMEL: EFFECT OF APPLICATION TIME
F Garcia-Godoy, M J Hicks, C M Flaitz and J H Berg, USA 120

ARE CURRENT MODELS FOR PREVENTIVE PROGRAMS SUFFICIENT
FOR THE NEEDS OF TOMORROW? [Review] W H Bowen, USA 120-121

THE EFFECTS OF A SODIUM HYPOCHLORITE TREATMENT
ON DEMINERALIZED ROOT DENTIN
D Inaba, H Duschner, W Jongebloed *et al*,
Japan, Germany, Netherlands, Sweden 121-122

THE DISTRIBUTION OF FLUORIDE IN CARIOUS HUMAN ENAMEL
E I F Pearce, G E Coote and M J Larsen, New Zealand and Denmark 122

ORAL HYGIENE AS A VARIABLE IN DENTAL CARIES EXPERIENCE
IN 14-YEAR-OLDS EXPOSED TO FLUORIDE
A T Mathiesen, B Ogaard and G Rolla, Norway 122-123

THE DENTAL HEALTH OF 3-YEAR-OLD
CHILDREN IN EAST CUMBRIA 1993
S G Jones and J H Nunn, England 123

A FIVE YEAR FOLLOW UP INTO CHANGES IN CARIES
EXPERIENCE AMONGST A SAMPLE OF 12 YEAR OLD
CHILDREN FROM ATHENS
G J Salapata, C Bakoula, G M Hawley and A S Blinkhorn, England 124

RELATIVE CONTRIBUTION OF DENTAL SERVICES TO THE CHANGES IN
CARIES LEVELS OF 12-YEAR-OLD CHILDREN IN 18 INDUSTRIALIZED
COUNTRIES IN THE 1970s AND EARLY 1980s
P Nadanovsky and A Sheiham, England 124

CAN PREVENTION ELIMINATE CARIES ? [Review] D O'Mullane, Ireland 125

ORAL HEALTH OF INDIVIDUALS AGED 3-80 YEARS
IN JONKOPING, SWEDEN IN 1973, 1983, AND 1993
1. Review of findings on dental care habits and knowledge of oral health
A Hugoson, G Koch, T Bergendal *et al*, Sweden 125-126

CARIES EXPERIENCE IN DECIDUOUS DENTITION OF RURAL
CHINESE CHILDREN 3-5 YEARS OLD IN RELATION TO THE
PRESENCE OR ABSENCE OF ENAMEL HYPOPLASIA
Y Li, J M Navia and J Y Bian, USA 126-127

CHARACTERIZATION OF AN UNUSUAL FLUORIDE-
RESISTANT *STREPTOCOCCUS MUTANS* ISOLATE
G L Hoelscher and M C Hudson, USA 127

SALT FLUORIDATION List of published papers 127

Effects on plants and wildlife

A STUDY OF THE CAUSE OF THE MANGO BLACK TIP DISORDER
C L Zhang, H B Huang and Y H Kuang, China 128

FLUORIDE ACCUMULATION AND TOXICITY IN LABORATORY
POPULATIONS OF WILD SMALL MAMMALS AND WHITE MICE
I C Boulton, J A Cooke and M S Johnson, England 128