



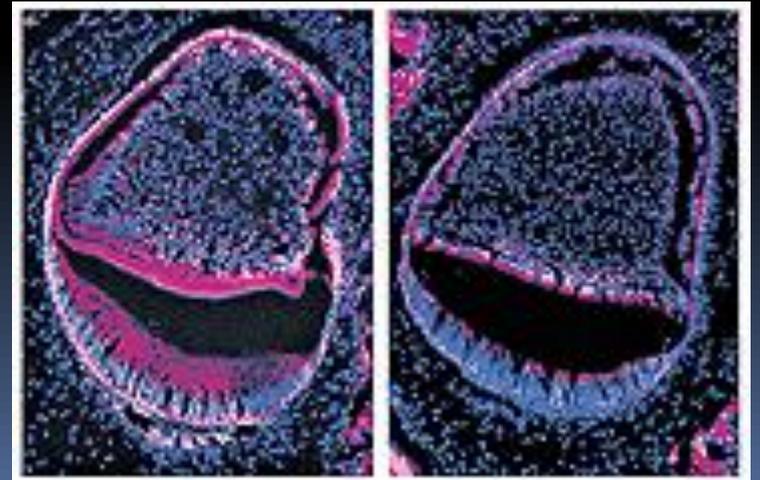
**UNIVERSIDADE DE SÃO PAULO
FACULDADE DE ODONTOLOGIA**



Fluorose Dentária

Fausto Medeiros Mendes

A definição e a etiologia



Fluorose: definição

Defeito de desenvolvimento do esmalte causada pela ingestão excessiva de flúor durante o período de formação do dente.

Fluorose: etiologia

✓ Ingestão de flúor

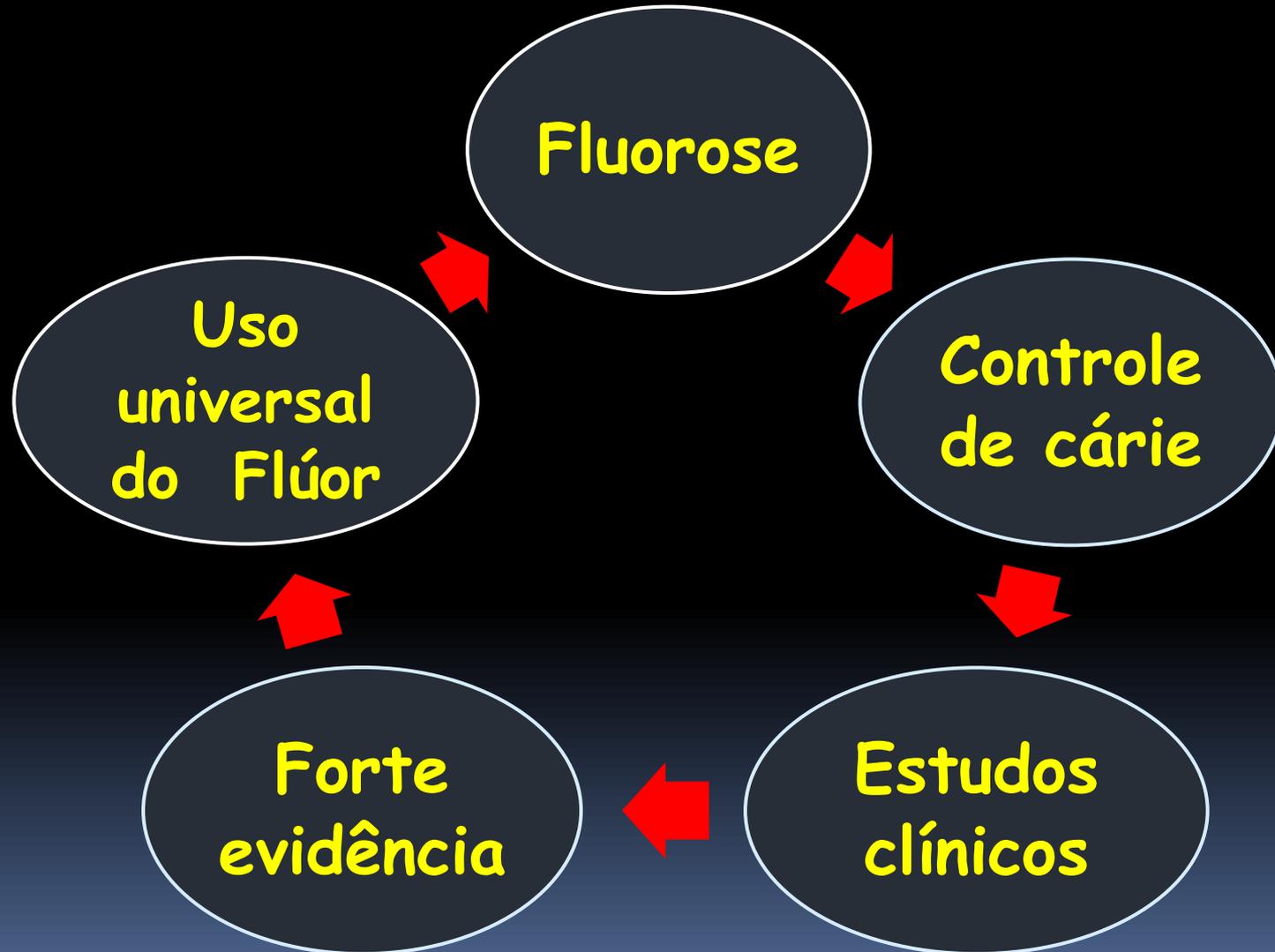
↪ **Água fluoretada**

↪ **Alimentos**

↪ **Ingestão de dentifrício
fluoretado**

↪ **Outros produtos de uso tópico
(Ex.: enxaguatórios)**

Fluorose: estágio atual



As características



Fluorose: características

✓ Formas brandas

- ↪ Linhas esbranquiçadas horizontais
- ↪ Pontas de cúspides
- ↪ Áreas opacas difusas pequenas ou extensas
- ↪ Intensificam com a desidratação

Fluorose: características

✓ Formas brandas



Fluorose: características

✓ Formas brandas



Fluorose: características

✓ Formas mais severas

- ↘ **Manchas acastanhadas (fator extrínseco)**
- ↘ **Pequenas depressões localizadas no esmalte (\sim 2mm)**
- ↘ **Depressões no esmalte que se unem**

Fluorose: características

✓ Formas mais severas



Fluorose: características

✓ Formas mais severas



0 diagnóstico



Fluorose: diagnóstico diferencial

Lesões de cárie

Fluorose

Hipocalcificação



Fluorose: diagnóstico diferencial



Fluorose: diagnóstico diferencial



Fluorose: diagnóstico

- ✓ **Índices visuais criados por alguns DENTISTAS**
 - ↪ **Índice de Dean**
 - ↪ **Índice TF (Thylstrup & Fejerskov)**

Fluorose: diagnóstico

✓ Índice de Dean



Normal



Questionável



Muito leve



Leve



Moderada



Fejerskov et al., (1996)

Severa

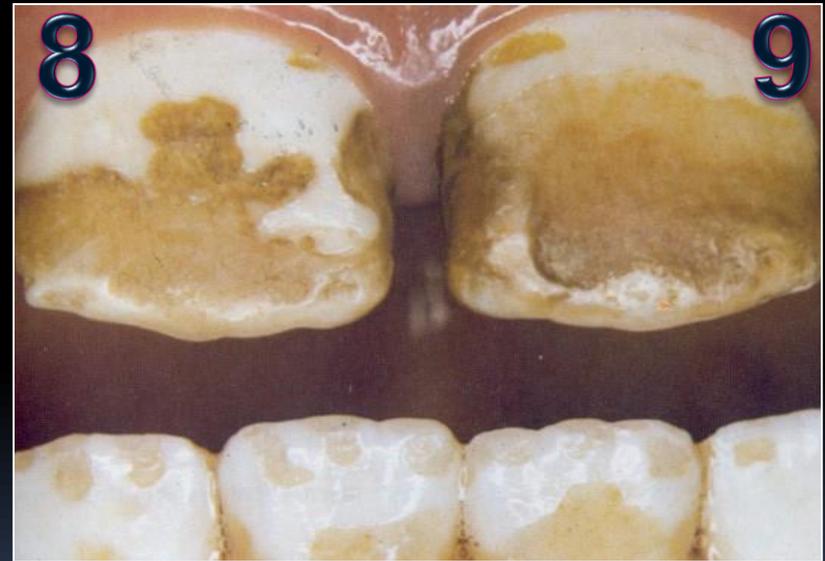
Fluorose: diagnóstico

✓ Índice TF

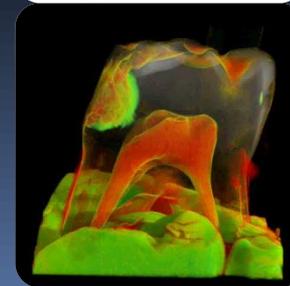
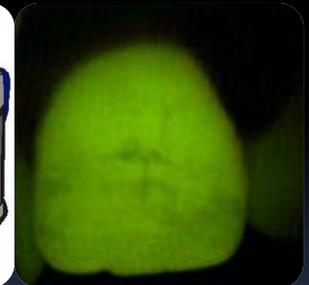


Fluorose: diagnóstico

✓ Índice TF



Mais diagnóstico



Fluorose: métodos avançados

*Community Dent Oral Epidemiol 2004; 32 (Suppl. 1): 19-27
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COMMUNITY
DENTISTRY AND
ORAL EPIDEMIOLOGY

A standardized photographic method for evaluating enamel opacities including fluorosis

Cochran JA, Ketley CE, Sanches L, Mamai-Homata E, Oila A-M, Árnadóttir IB, van Loveren C, Whelton HP, O'Mullane DM. A standardized photographic method for evaluating enamel opacities including fluorosis. *Community Dent Oral Epidemiol* 2004; 32 (Suppl. 1): 19-27. © Blackwell Munksgaard, 2004

Judith A. Cochran¹, Clare E. Ketley², Leonor Sanches³, E. Mamai-Homata⁴, Anna-Maria Oila⁵, Inga B. Árnadóttir⁶, Cor van Loveren⁷, Helen P. Whelton and Denis M. O'Mullane¹

¹Oral Health Services Research Centre, University College Cork, Ireland, ²Department of Clinical Dental Sciences, University of Liverpool, Liverpool, UK, ³Departamento de Epidemiologia, Instituto Superior De Ciências da Saúde-Sul, Monte de Caparica, Portugal, ⁴Department of Preventive and Community Dentistry, School of Dentistry, University of Athens, Athens, Greece, ⁵Institute of Dentistry, University of Oulu, Oulu, Finland, ⁶University of Iceland

Método fotográfico para facilitar diagnóstico em levantamentos epidemiológicos



Fluorose: métodos avançados

BMC Public Health

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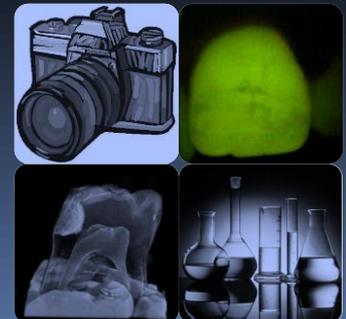
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Quantitative Light Fluorescence (QLF) and Polarized White Light (PWL) assessments of dental fluorosis in an epidemiological setting

BMC Public Health 2012, **12**:366 doi:10.1186/1471-2458-12-366

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**QLF – captação da fluorescência
do dente para avaliação da
fluorose**



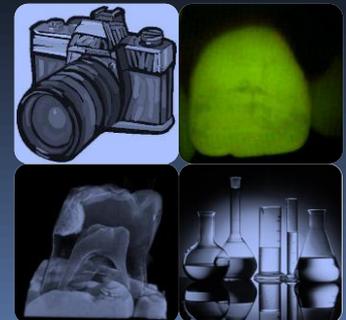
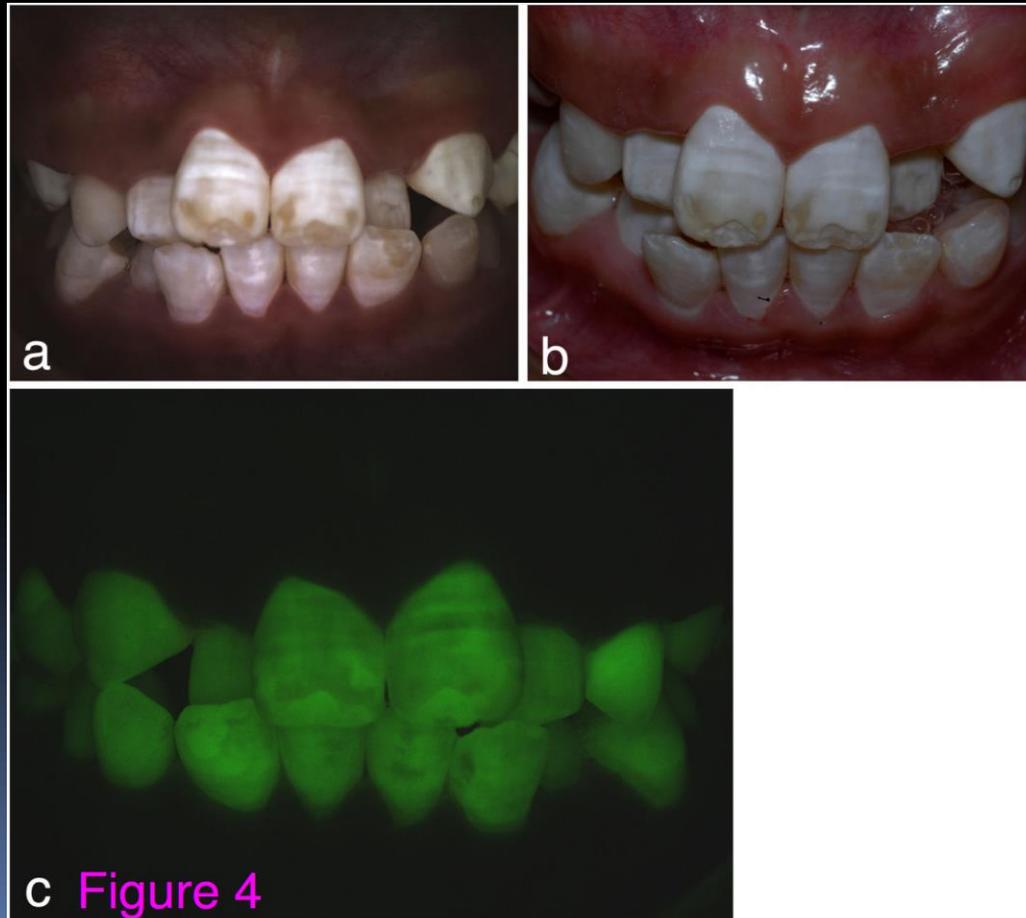
Fluorose: métodos avançados

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Quantitative Light Fluorescence (QLF) and Polarized White Light (PWL) assessments of dental fluorosis in an epidemiological setting



Fluorose: métodos avançados

Fluoride Intake, Metabolism and Toxicity

Buzalaf MAR (ed): Fluoride and the Oral Environment.
Monogr Oral Sci. Basel, Karger, 2011, vol 22, pp 52–65

Historical and Recent Biological Markers of Exposure to Fluoride

Juliano Pelim Pessan^a · Marília Afonso Rabelo Buzalaf^b

^aDepartment of Pediatric Dentistry and Public Health, Araçatuba Dental School, São Paulo State University, Araçatuba, and

^bDepartment of Biological Sciences, Bauru Dental School, University of São Paulo, Bauru, Brazil

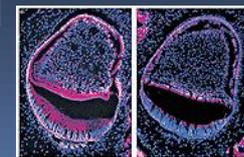
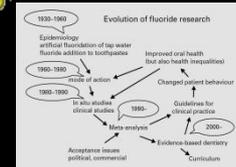
Biomarcadores da exposição de flúor para prever e monitorar o risco da criança desenvolver fluorose



Revendo o caminho percorrido ...



Fluorose: o caminho





E o paciente???



A percepção do paciente



Fluorose: autopercepção

✓ O paciente sabe que tem fluorose?

Perception of dental fluorosis and other oral health disorders by 12-year-old Brazilian children

MARCELO C. MENEGHIM¹, FÁBIO C. KOZLOWSKI¹, ANTÔNIO C. PEREIRA¹,
ANDRÉA V. ASSAF² & ELAINE P. S. TAGLIAFERRO¹

¹School of Dentistry of Piracicaba, State University of Campinas (UNICAMP-SP), Department of Community Dentistry, Piracicaba, Brazil and ²Dentistry Services, Department of Community Health (UFF-RJ), Niterói, Brazil

Fluorose: autopercepção

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✓ **O paciente sabe que tem fluorose?**

↘ **Crianças de 12 anos - Exame clínico e questionário sobre condições bucais**

↘ **Fotos com condições clínicas distintas**

Prevalência de Fluorose

TF 1 = 48 (12%)

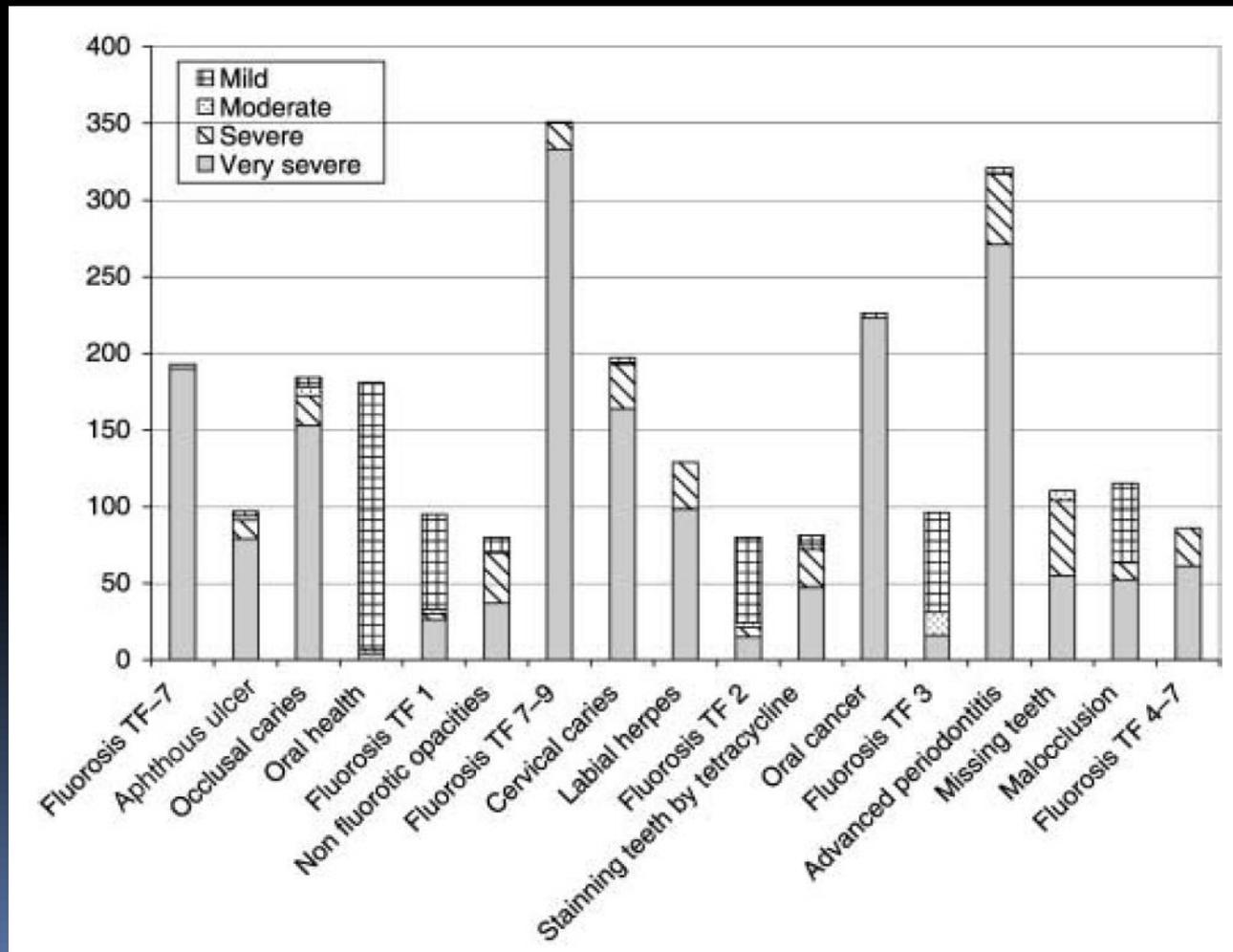
TF 2 = 25 (6,2%)

Dissatisfaction	n	%
Dissatisfaction with their dentition	196	48.9
Dissatisfaction due to fluorosis – T-F 1	0	0.0
Dissatisfaction due to fluorosis – T-F 2	2	0.50
Dissatisfaction due to pain	64	32.7
Dissatisfaction due to aesthetics	110	56.1
Dissatisfaction due to dental caries	5	2.6
Dissatisfaction due to other problems	15	8.1

Fluorose: autopercepção

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A qualidade de vida



Fluorose: qualidade de vida

✓ **A fluorose causa impacto na qualidade de vida do paciente?**

132

Vol. 67, No. 3, Summer 2007

SCIENTIFIC ARTICLES &
BRIEF COMMUNICATIONS

Oral Health-Related Quality of Life of Children by Dental Caries and Fluorosis Experience

Loc G. Do, PhD; A. Spencer, PhD

Journal of Public Health Dentistry

Fluorose: qualidade de vida

132

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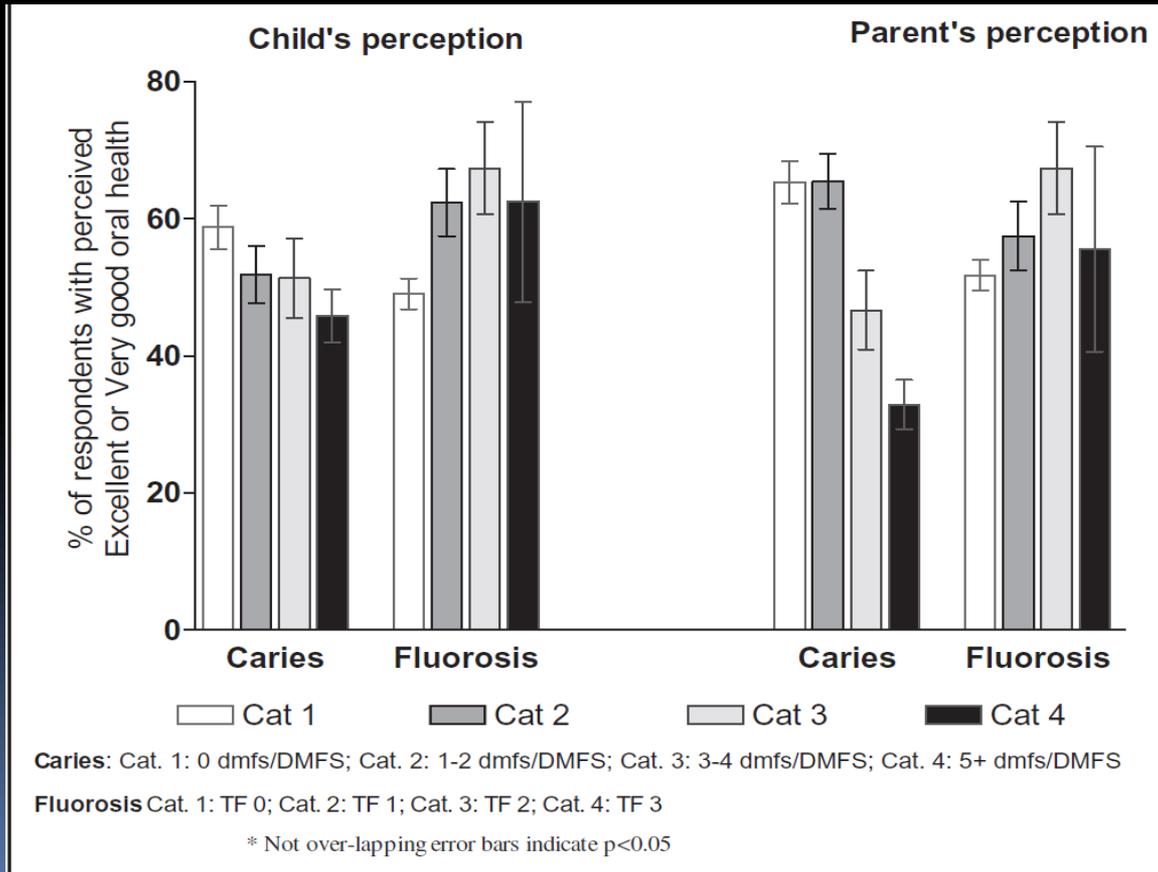
Journal of Public Health Dentistry

- ↙ **677 crianças de 8 a 12 anos**
- ↙ **Exame clínico → cárie, fluorose e maloclusão**
- ↙ **Impacto na qualidade de vida (QV)
→ CPQ (crianças), PPQ (pais) e
avaliação global da QV**

Fluorose: qualidade de vida

✓ Prevalência:

TF 1 = 14,5%; TF 2 = 9,5%; TF 3 = 1,9%



**% de sujeitos
que
classificaram
QV como
excelente ou
muito boa**

Fluorose: o paciente

Community Dent Oral Epidemiol 2010; 38: 97–109
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COMMUNITY
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Review

A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life

Oitip Chankanka^{1,2}, Steven M. Levy^{1,3},
John J. Warren¹ and Jane M. Chalmers^{4,†}

¹Department of Preventive and Community Dentistry, College of Dentistry, University of Iowa, Iowa City, Iowa, USA, ²Department of Preventive Dentistry, Faculty of Dentistry, Prince of Songkla University, Songkla, Thailand, ³Department of Epidemiology, College of Public Health, University of Iowa, Iowa City, Iowa, USA, ⁴Deceased.

Chankanka O, Levy SM, Warren JJ, Chalmers JM. A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life. *Community Dent Oral Epidemiol* 2010. © 2009 John Wiley & Sons A/S

Fluorose: o paciente

Review

A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life

Oitip Chankanka^{1,2}, Steven M. Levy^{3,4}, John J. Warren⁵ and Jane M. Chalmers^{6,7}
¹Department of Preventive and Community Dentistry, College of Dentistry, University of Iowa, Iowa City, Iowa, USA, ²Department of Preventive Dentistry, Faculty of Dentistry, Prince of Songkla University, Songkla, Thailand, ³Department of Epidemiology, College of Public Health, University of Iowa, Iowa City, Iowa, USA, ⁴Deceased.

- **Estudos mais antigos focando satisfação /aceitação da fluorose muito leve e leve mostram resultados VARIADOS**
- **Estudos com metodologia mais apurada sobre impacto na qualidade de vida mostram que fluorose LEVE NÃO É um problema**

Fluorose: o paciente

Review

A literature review of aesthetic perceptions of dental fluorosis and relationships with psychosocial aspects/oral health-related quality of life

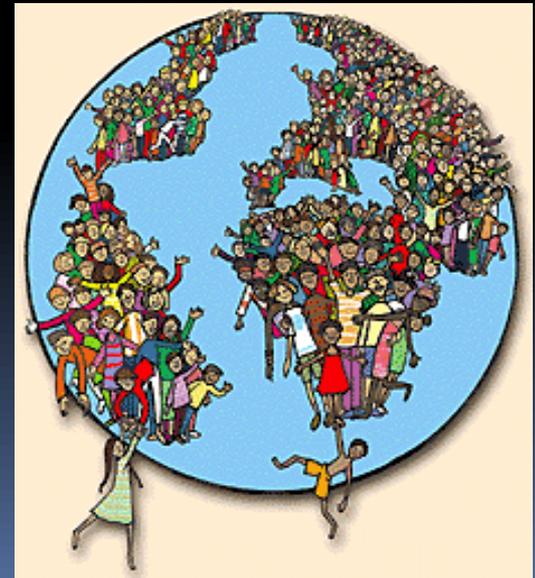
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➤ **Além disso, fluorose LEVE é algumas vezes associada com MELHORA na qualidade de vida**

➤ **Fluorose SEVERA consistentemente apresenta impacto NEGATIVO**

A população



Fluorose: epidemiologia



Ministério da Saúde
Secretaria de Atenção à Saúde
Secretaria de Vigilância em Saúde
Departamento de Atenção Básica
Coordenação Geral de Saúde Bucal

**Prevalência de
fluorose no Brasil
(12 anos)**



16,7 %

	n = 7.232		
	%	IC (95%)	
		L.I.	L.S.
Sem Fluorose	83,3	79,9	86,2
Normal	74,8	70,4	78,7
Questionável	8,5	6,6	10,9
Com Fluorose	16,7	13,8	20,1
Muito Leve	10,8	8,5	13,7
Leve	4,3	3,3	5,5
Moderada	1,5	0,8	2,9
Grave	0,0	0,0	0,1

O que fazer então
com relação à utilização do
flúor e à fluorose?



As evidências



Flúor sistêmico: evidências

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From 1840

Jan

PAPER

Systematic review of water fluoridation

BMJ 2000; 321 doi: 10.1136/bmj.321.7265.855 (Published 7 October 2000)

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Flúor sistêmico: evidências

Systematic review of water fluoridation

Marian S McDonagh, Penny F Whiting, Paul M Wilson, Alex J Sutton, Ivor Chestnutt, Jan Cooper, Kate Misso, Matthew Bradley, Elizabeth Treasure, Jos Kleijnen

Cárie dentária ↓



Fluorose ↑



Dentifrícios: evidências

CONCISE REVIEW

M.C.M. Wong^{1*}, J. Clarkson^{2,3},
A.-M. Glenny³, E.C.M. Lo¹,
V.C.C. Marinho⁴, B.W.K. Tsang¹,
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¹Dental Public Health, Faculty of Dentistry, The University of Hong Kong, 3B20, 3/F, Prince Philip Dental Hospital, 34 Hospital Road, Hong Kong, China; ²Dental Health Services Research Unit, University of Dundee, Scotland, UK; ³The University of Manchester, Manchester Academic Health Science Centre, Cochrane Oral Health Group, School of Dentistry, Manchester, UK; and ⁴Clinical and Diagnostic Oral Sciences, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, UK; *corresponding author, mcmwong@hkucc.hku.hk

J Dent Res 90(5):573-579, 2011

Cochrane Reviews on the Benefits/Risks of Fluoride Toothpastes

Dentifrícios: evidências

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Cochrane Reviews on the
Benefits/Risks of Fluoride
Toothpastes

Cárie dentária ↓



~~MIAS~~



Fluorose ↑

Dentifrícios: evidências

CONCISE REVIEW

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Cochrane Reviews on the
Benefits/Risks of Fluoride
Toothpastes



- A revisão confirma os benefícios dos dentifrícios fluoretados no controle da cárie, mas ...
- Somente para concentrações de 1000 ppm e acima

Dentifrícios: evidências

CONCISE REVIEW

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Cochrane Reviews on the
Benefits/Risks of Fluoride
Toothpastes



FRACA EVIDÊNCIA que
iniciar uso de dentifício
fluoretado em crianças
menores de 12 meses
aumenta risco de fluorose

Maioria da evidência
focada em
FLUOROSE LEVE

Dentifrícios: evidências

CONCISE REVIEW

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Cochrane Reviews on the
Benefits/Risks of Fluoride
Toothpastes

**A decisão de quais níveis de flúor
usar para crianças abaixo de 6
anos de idade deve ser balanceada
entre o risco de desenvolver cárie
e o de apresentar fluorose leve**

0

balanceamento







FLUOROSE

Prevalência aos 12 anos = 16,7 %

NÃO CAUSA impacto na
qualidade de vida

FRACA EVIDÊNCIA do efeito do
flúor tópico na sua ocorrência

NÃO É um problema de saúde
pública

CÁRIE

Prevalência aos 12 anos = 56,5 %

CAUSA impacto na qualidade de
vida

FORTE EVIDÊNCIA do efeito do
flúor tópico no seu controle

É um problema de saúde pública



Portanto...



**TODAS as crianças, a partir da
erupção dos dentes, devem usar
dentifrício fluoretado com
concentração de pelo menos 1000
ppm**



**E quando o paciente se
queixar da fluorose???**



Fluorose: resolução estética



Fluorose: resolução estética



Reflexões finais



Enquanto a fluorose for encarada pelo ponto de vista do cirurgião dentista, ela é um GRANDE PROBLEMA ...



**Quando o dentista começar a
pensar no paciente, os
problemas relacionados à
fluorose serão **MUITO
MENORES****





Obrigado pela atenção



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Fausto Medeiros Mendes