CSFT 2021
15e Congrès de la Société Francophone de Tabacologie
25 & 26 novembre 2021
Sortir du tabac : une priorité pour tous !
Centre des Congrès de Reims
SOCIÉTÉ FRANCOPHONE DE TABACOLOGIE

CIGARETTES ÉLECTRONIQUES, TABACS CHAUFFÉS ET ORAUX ET SANTÉ BUCCALE

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TABACS ORAUX en occident

- Tabac non fumé = Smokeless tobacco
- Tabac à macher ou chiquer = chewing tobacco
- Tabac à priser = snuff (USA) à inhaler et moist snuff = snus (suède) utilisé comme tabac oral placé dans cavité buccale

Moist snuff

Dry snuff

Snus

25¢ OFF
RED MAN
CHEWING TOBACCO
OLIVER

Tabac à chiquer ou macher

TABACS ORAUX en orient

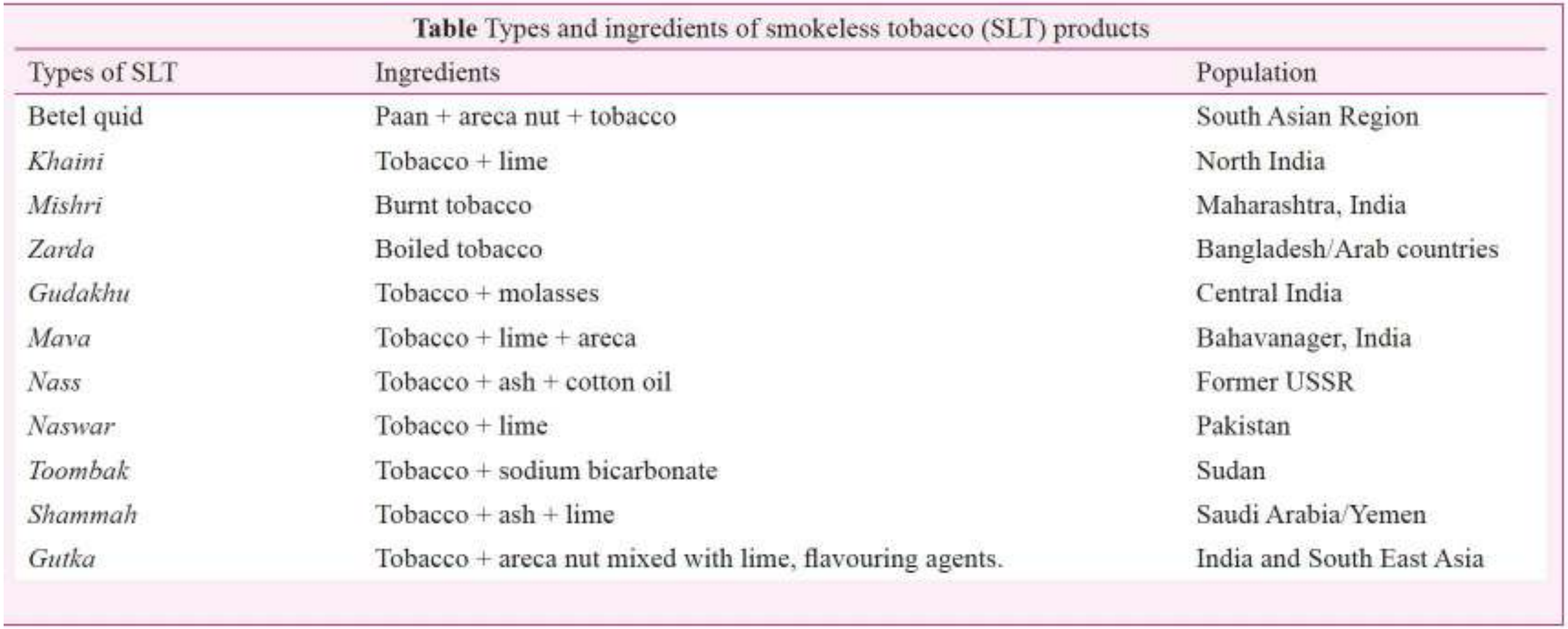
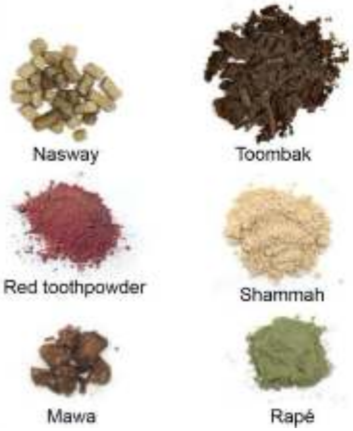


Table Types and ingredients of smokeless tobacco (SLT) products

Types of SLT	Ingredients	Population
Betel quid	Paan + areca nut + tobacco	South Asian Region
Khaini	Tobacco + lime	North India
Mishri	Burnt tobacco	Maharashtra, India
Zarda	Boiled tobacco	Bangladesh/Arab countries
Gudakhu	Tobacco + molasses	Central India
Mava	Tobacco + lime + areca	Bahavanager, India
Nass	Tobacco + ash + cotton oil	Former USSR
Naswar	Tobacco + lime	Pakistan
Toombak	Tobacco + sodium bicarbonate	Sudan
Shammah	Tobacco + ash + lime	Saudi Arabia/Yemen
Gutka	Tobacco + areca nut mixed with lime, flavouring agents.	India and South East Asia

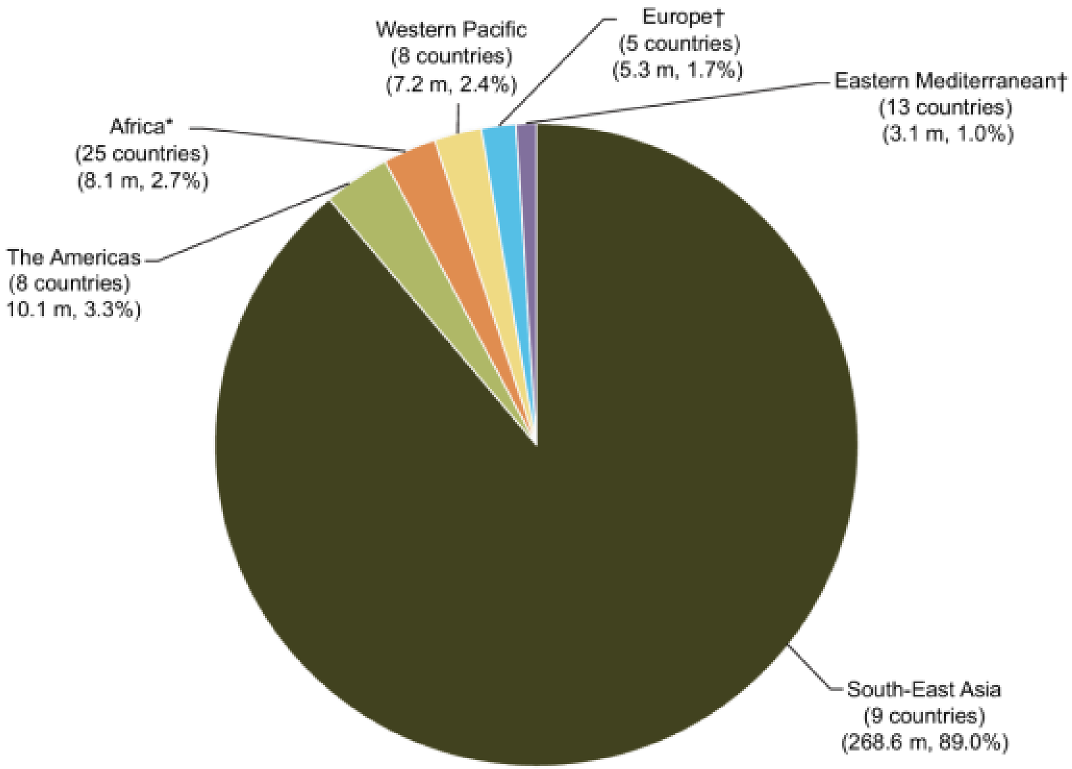
Chique de Betel



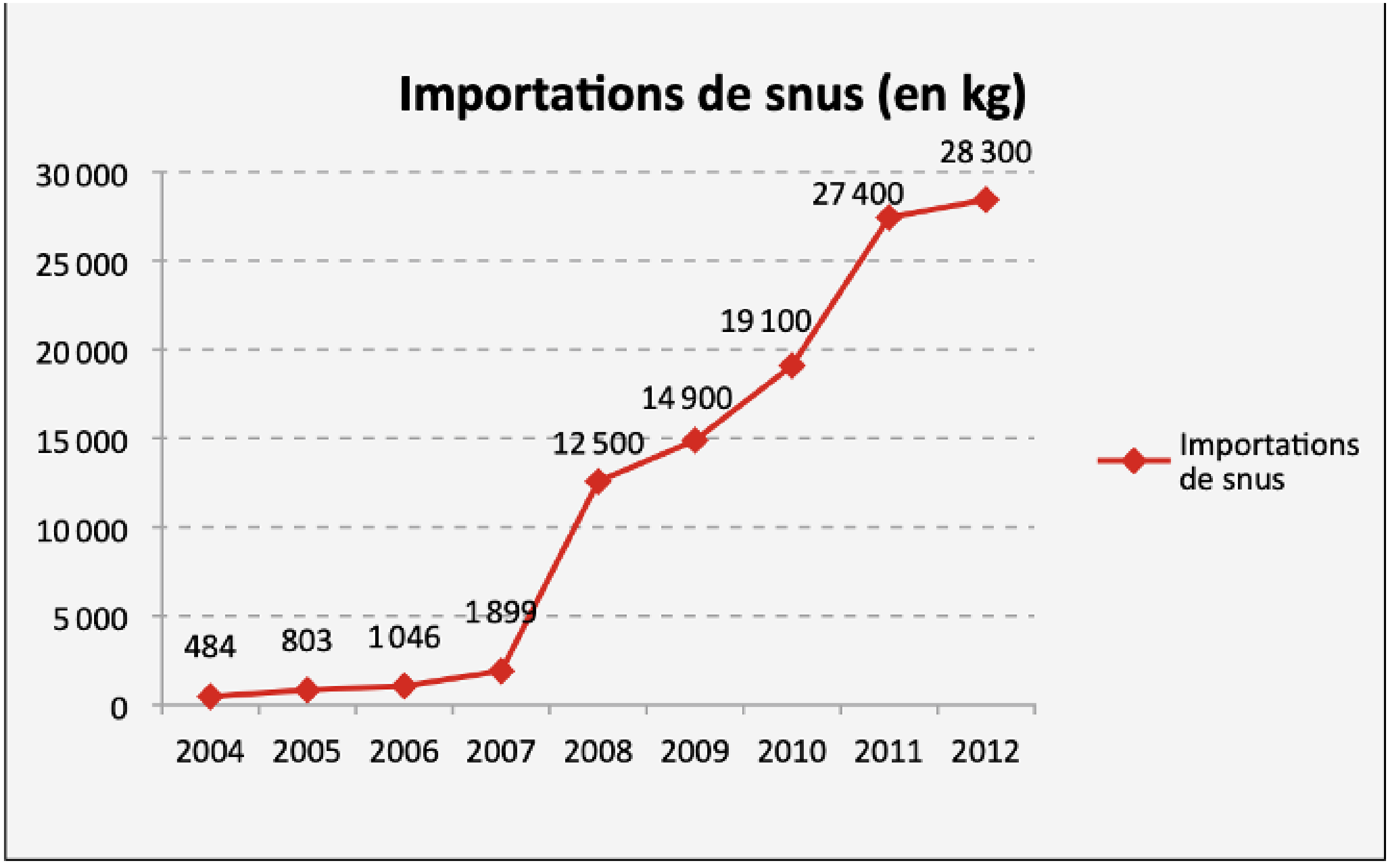
Gutka

Consommation de tabacs oraux

’. Number (in millions) and proportion (%) of smokeless tobacco users among adults in 70 countries, by World Health Organization region



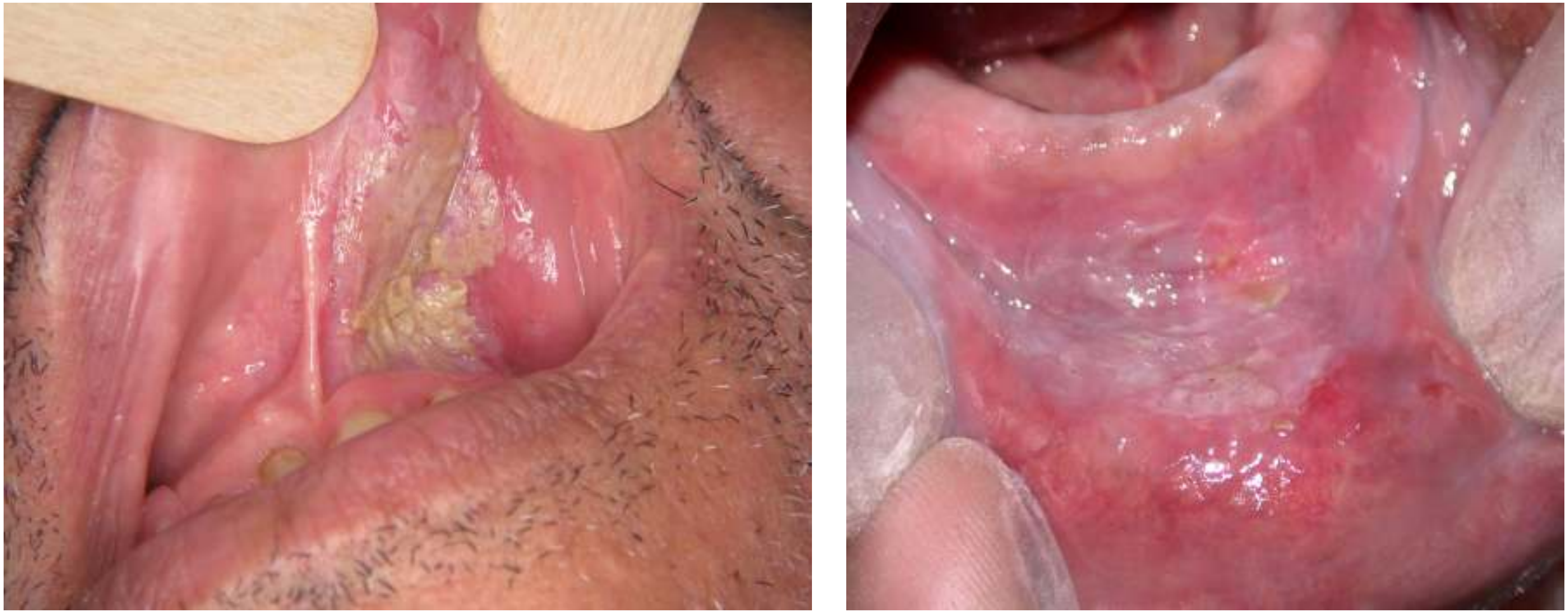
Consommation Tabac oraux en suisse



SWISS DENTAL JOURNAL SSO VOL 126 9·2016

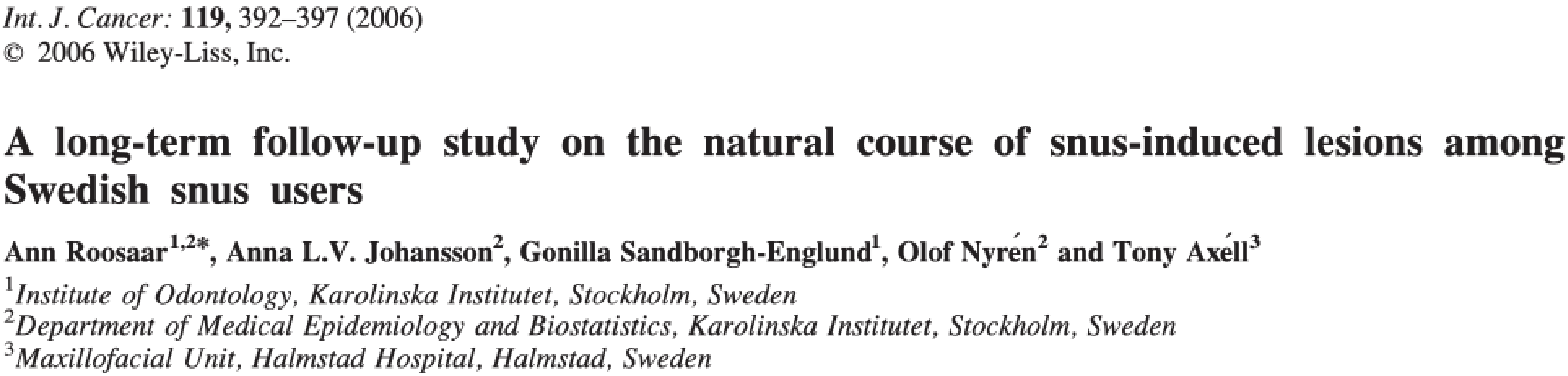
SNUS et santé buccale

- Pas d’effet sur dents et parodonte
- Effet sur la muqueuse buccale: « leucoplasie »



SNUS et santé buccale

- **Faible risque de survenue d'un carcinome épidermoïde de la cavité buccale**



Int. J. Cancer: **119,** 392–397 (2006)

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A long-term follow-up study on the natural course of snus-induced lesions among Swedish snus users

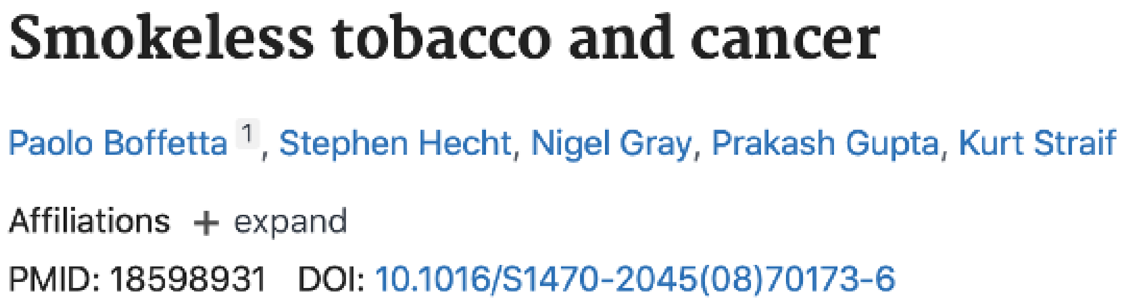
Ann Roosaar[1,2]*, Anna L.V. Johansson[2], Gonilla Sandborgh-Englund[1], Olof Nyrén[2] and Tony Axéll[3]

[1] *Institute of Odontology, Karolinska Institutet, Stockholm, Sweden*
[2] *Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden*
[3] *Maxillofacial Unit, Halmstad Hospital, Halmstad, Sweden*

- 1115 « leucoplasies » sur 24591 personnes consommatrices de snus examinées
- 3 cancers de la cavité buccale dont 2 fumeurs de cigarettes et cancers développés à distance des leucoplasies (période de suivie de 19 ans)

SNUFF et santé buccale

- **La consommation de SNUFF aux USA augmente le risque de carcinome épidermoide**



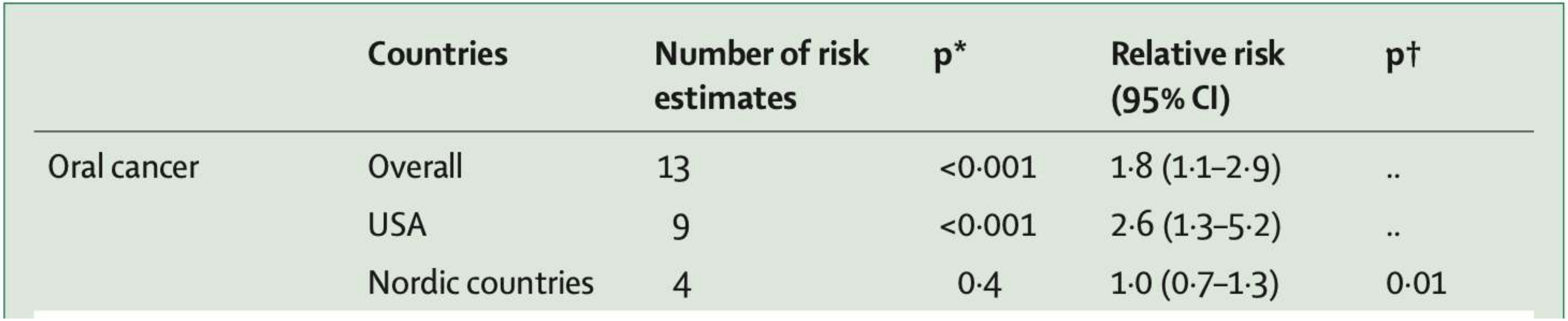
Smokeless tobacco and cancer

Paolo Boffetta[1], Stephen Hecht, Nigel Gray, Prakash Gupta, Kurt Straif

Affiliations + expand

PMID: 18598931 DOI: 10.1016/S1470-2045(08)70173-6

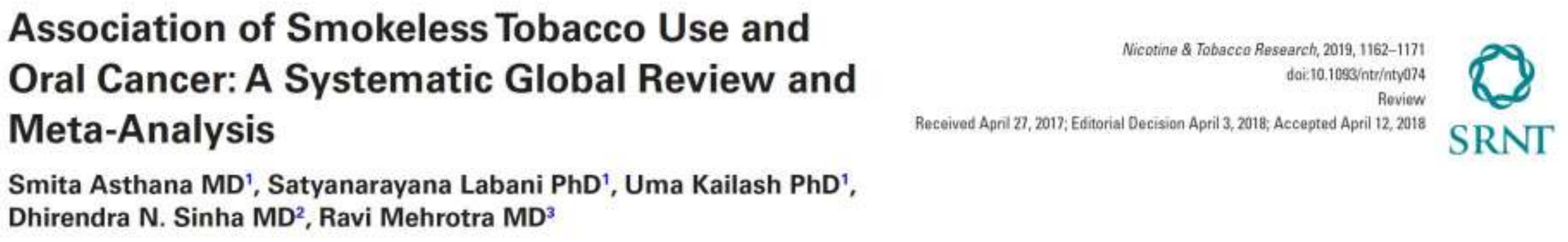
THE LANCET
Oncology



	Countries	Number of risk estimates	p*	Relative risk (95% CI)	p†
Oral cancer	Overall	13	<0·001	1·8 (1·1–2·9)	..
	USA	9	<0·001	2·6 (1·3–5·2)	..
	Nordic countries	4	0·4	1·0 (0·7–1·3)	0·01

Tabacs oraux et risques de carcinome épidermoides de la cavité buccale en orient

- **Le risque relatif varie en fonction des tabac et des additifs**



Association of Smokeless Tobacco Use and Oral Cancer: A Systematic Global Review and Meta-Analysis

Smita Asthana MD[1], Satyanarayana Labani PhD[1], Uma Kailash PhD[1], Dhirendra N. Sinha MD[2], Ravi Mehrotra MD[3]

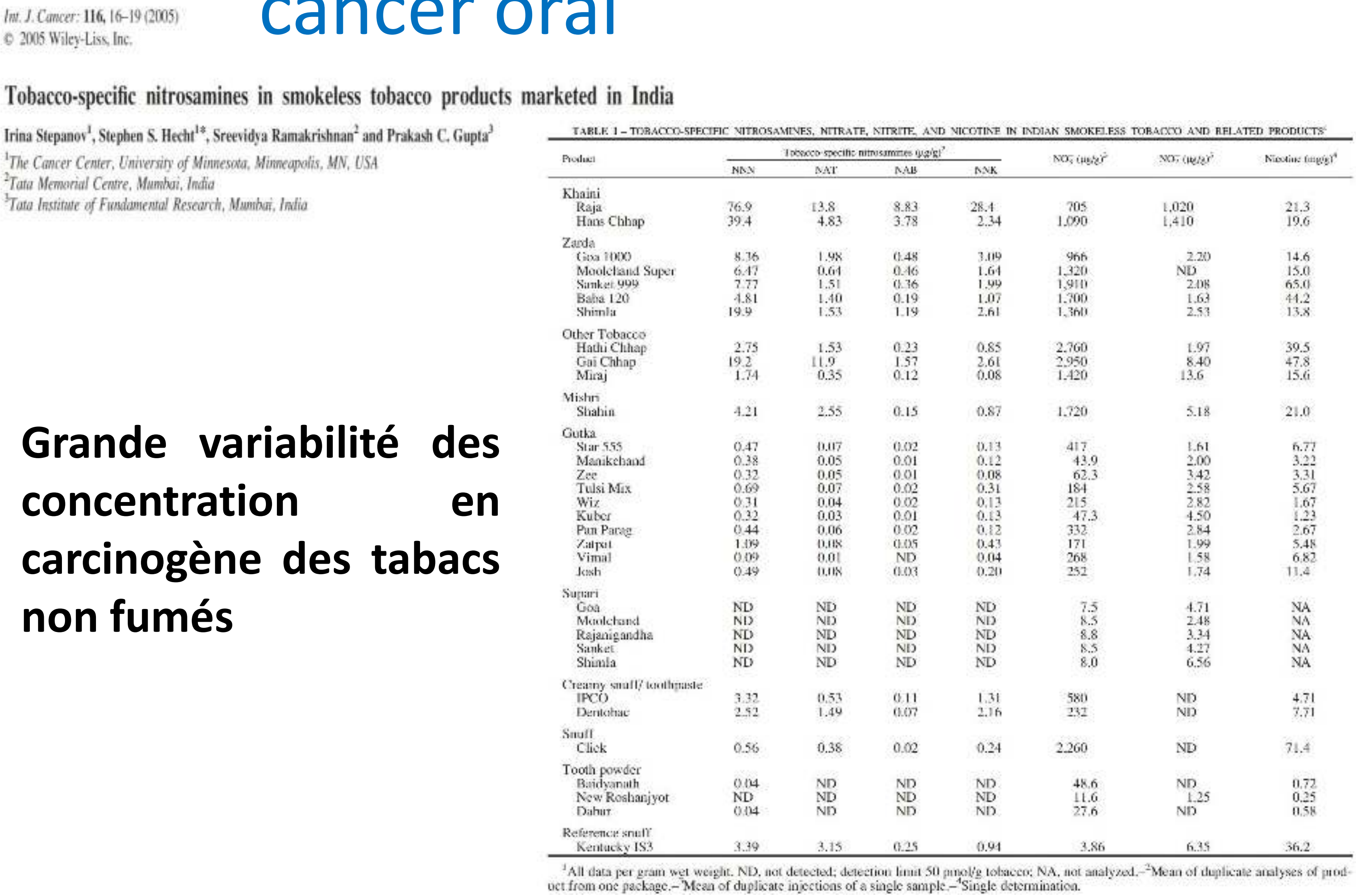
Nicotine & Tobacco Research, 2019, 1162–1171
doi:10.1093/ntr/nty074
Review
Received April 27, 2017; Editorial Decision April 3, 2018; Accepted April 12, 2018

SRNT

Le risque relatif de développer un cancer oral est de :

- **Gutkha** : **8.67** (95% CI = 3.59 to 20.93),
- **Pan tobacco / betel liquid : 7.18** (95% CI = 5.48 to 9.41),
- **Mainpuri tobacco: 3.32** (95% CI = 1.32 to 8.36),
- **Oral snuff: 4.18** (50% CI = 2.37 to 7.38),
- **Snus** : **0.86** (95% CI = 0.58 to 1.29).

Tabacs oraux et risques de cancer oral



Int. J. Cancer: **116**, 16–19 (2005)
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Tobacco-specific nitrosamines in smokeless tobacco products marketed in India

Irina Stepanov[1], Stephen S. Hecht[1]*, Sreevidya Ramakrishnan[2] and Prakash C. Gupta[3]
[1]*The Cancer Center, University of Minnesota, Minneapolis, MN, USA*
[2]*Tata Memorial Centre, Mumbai, India*
[3]*Tata Institute of Fundamental Research, Mumbai, India*

TABLE 1 – TOBACCO-SPECIFIC NITROSAMINES, NITRATE, NITRITE, AND NICOTINE IN INDIAN SMOKELESS TOBACCO AND RELATED PRODUCTS[1]

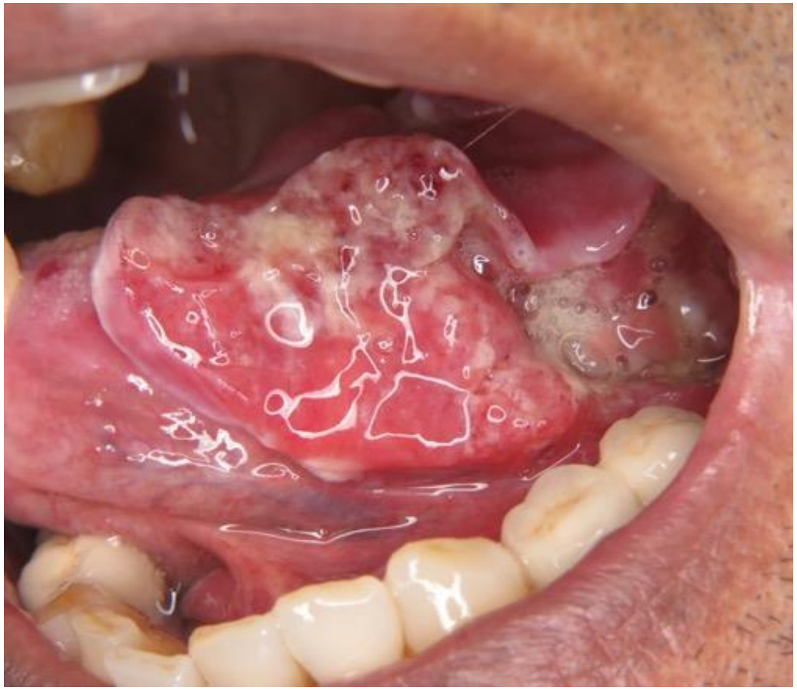
Product	Tobacco-specific nitrosamines (µg/g)[2]				NO_3^- (µg/g)[2]	NO_2^- (µg/g)[3]	Nicotine (mg/g)[4]
	NNN	NAT	NAB	NNK			
Khaini							
Raja	76.9	13.8	8.83	28.4	705	1,020	21.3
Hans Chhap	39.4	4.83	3.78	2.34	1,090	1,410	19.6
Zarda							
Goa 1000	8.36	1.98	0.48	3.09	966	2.20	14.6
Moolchand Super	6.47	0.64	0.46	1.64	1,320	ND	15.0
Sanket 999	7.77	1.51	0.36	1.99	1,910	2.08	65.0
Baba 120	4.81	1.40	0.19	1.07	1,700	1.63	44.2
Shimla	19.9	1.53	1.19	2.61	1,360	2.53	13.8
Other Tobacco							
Hathi Chhap	2.75	1.53	0.23	0.85	2,760	1.97	39.5
Gai Chhap	19.2	11.9	1.57	2.61	2,950	8.40	47.8
Miraj	1.74	0.35	0.12	0.08	1,420	13.6	15.6
Mishri							
Shahin	4.21	2.55	0.15	0.87	1,720	5.18	21.0
Gutka							
Star 555	0.47	0.07	0.02	0.13	417	1.61	6.77
Manikchand	0.38	0.05	0.01	0.12	43.9	2.00	3.22
Zee	0.32	0.05	0.01	0.08	62.3	3.42	3.31
Tulsi Mix	0.69	0.07	0.02	0.31	184	2.58	5.67
Wiz	0.31	0.04	0.02	0.13	215	2.82	1.67
Kuber	0.32	0.03	0.01	0.13	47.3	4.50	1.23
Pan Parag	0.44	0.06	0.02	0.12	332	2.84	2.67
Zatpat	1.09	0.08	0.05	0.43	171	1.99	5.48
Vimal	0.09	0.01	ND	0.04	268	1.58	6.82
Josh	0.49	0.08	0.03	0.20	252	1.74	11.4
Supari							
Goa	ND	ND	ND	ND	7.5	4.71	NA
Moolchand	ND	ND	ND	ND	8.5	2.48	NA
Rajanigandha	ND	ND	ND	ND	8.8	3.34	NA
Sanket	ND	ND	ND	ND	8.5	4.27	NA
Shimla	ND	ND	ND	ND	8.0	6.56	NA
Creamy snuff/ toothpaste							
IPCO	3.32	0.53	0.11	1.31	580	ND	4.71
Dentobac	2.52	1.49	0.07	2.16	232	ND	7.71
Snuff							
Click	0.56	0.38	0.02	0.24	2,260	ND	71.4
Tooth powder							
Baidyanath	0.04	ND	ND	ND	48.6	ND	0.72
New Roshanjyot	ND	ND	ND	ND	11.6	1.25	0.25
Dabur	0.04	ND	ND	ND	27.6	ND	0.58
Reference snuff							
Kentucky 1S3	3.39	3.15	0.25	0.94	3.86	6.35	36.2

[1] All data per gram wet weight. ND, not detected; detection limit 50 pmol/g tobacco; NA, not analyzed.–[2] Mean of duplicate analyses of product from one package.–[3] Mean of duplicate injections of a single sample.–[4] Single determination.

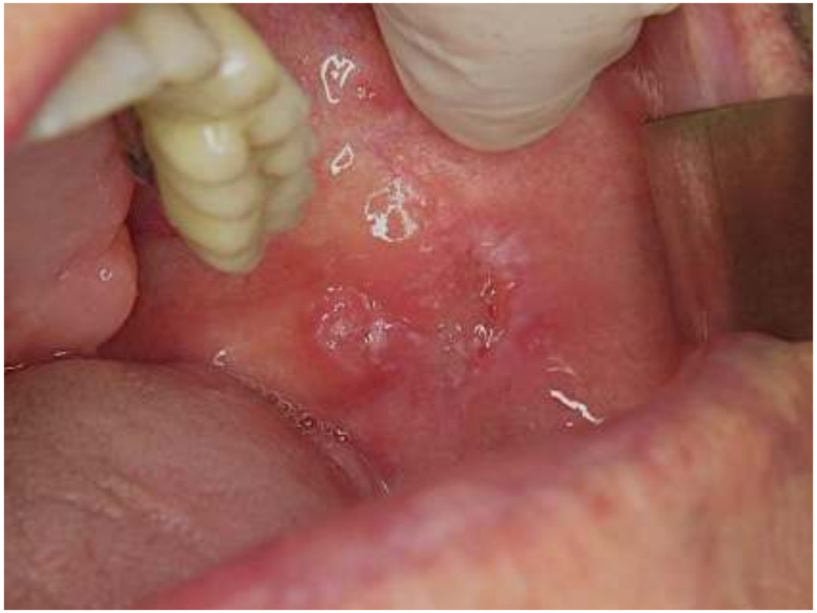
Grande variabilité des concentration en carcinogène des tabacs non fumés

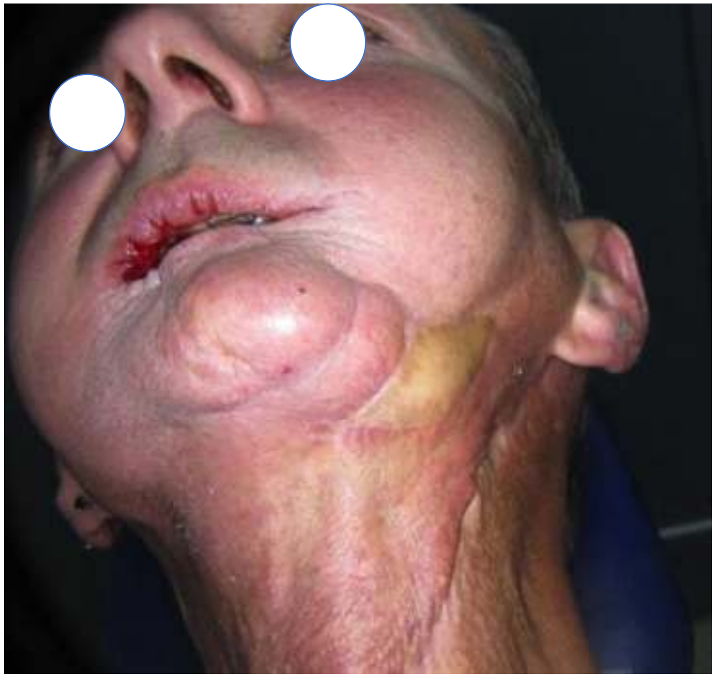
Formes cliniques des cancers oraux induits par tabacs oraux: **CARCINOME ÉPIDERMOIDE**

- 80 % K au niveau de la zone de placement de la chique
- 20 % K plancher et bord de langue par diffusion carcinogène dans la salive
- Agressivité +++ (extension ganglionnaire et métastatique)
- TT: Chirurgie, radiothérapie +/- thérapies ciblées-immunothérapie
- Survie < 40% 5 ans
- Morbidité +++ post traitements
- Différentes formes cliniques



Le carcinome épidermoide de la cavité buccale est une maladie grave!



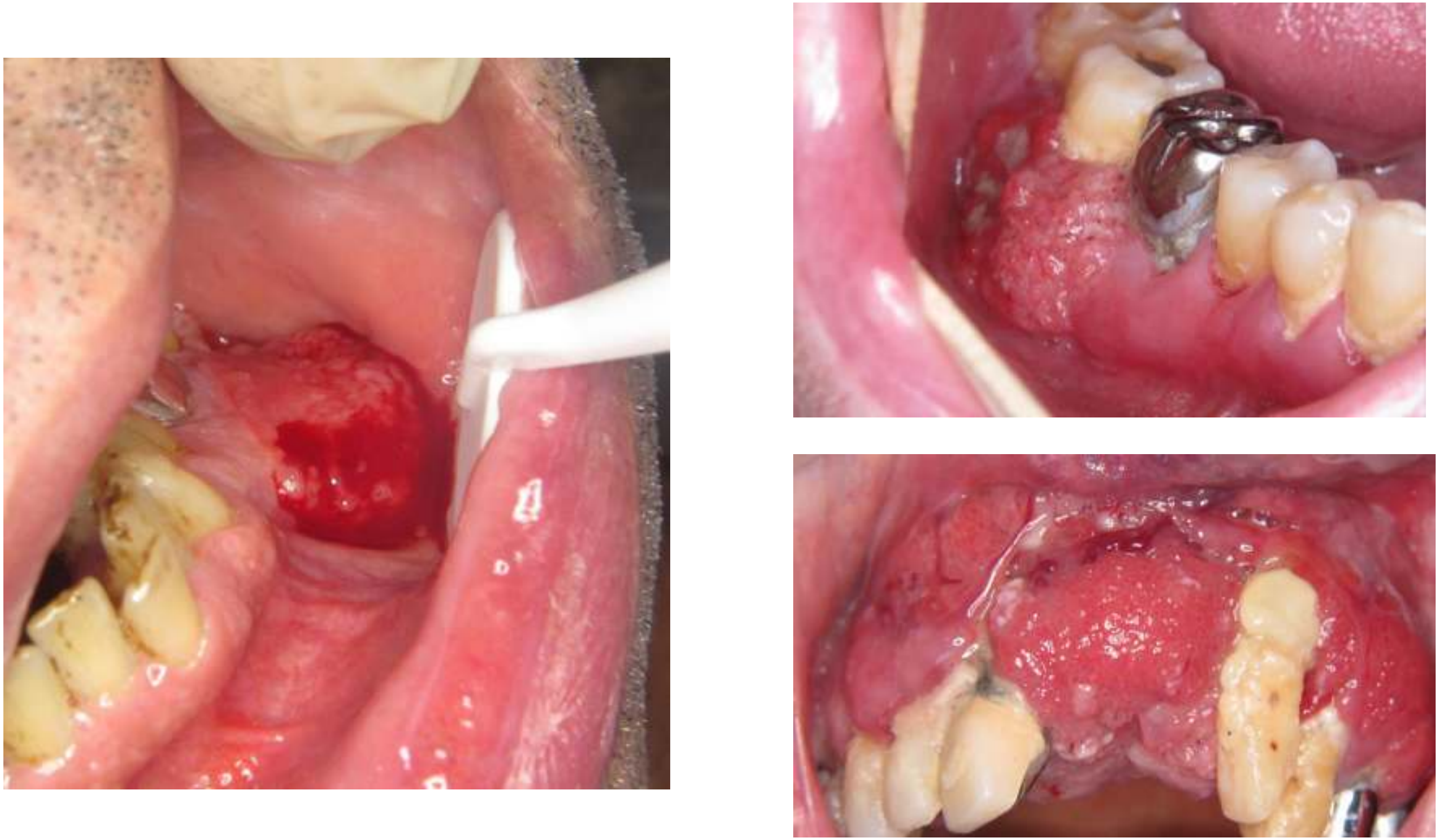


«Petite lésion»

Graves conséquences

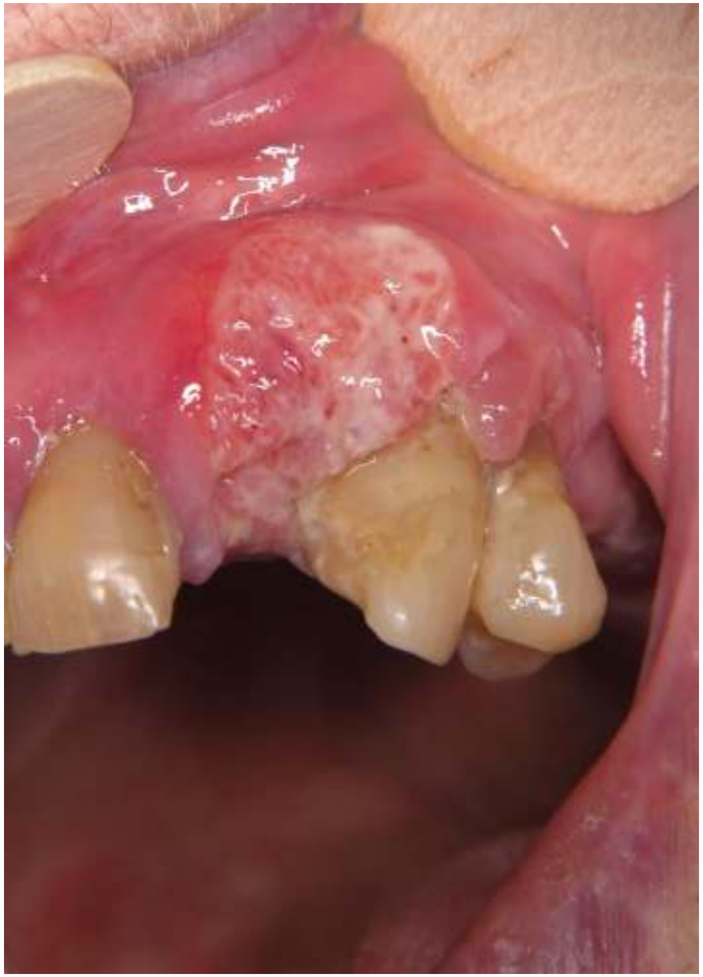
Carcinome épidermoide: comment les reconnaitre?

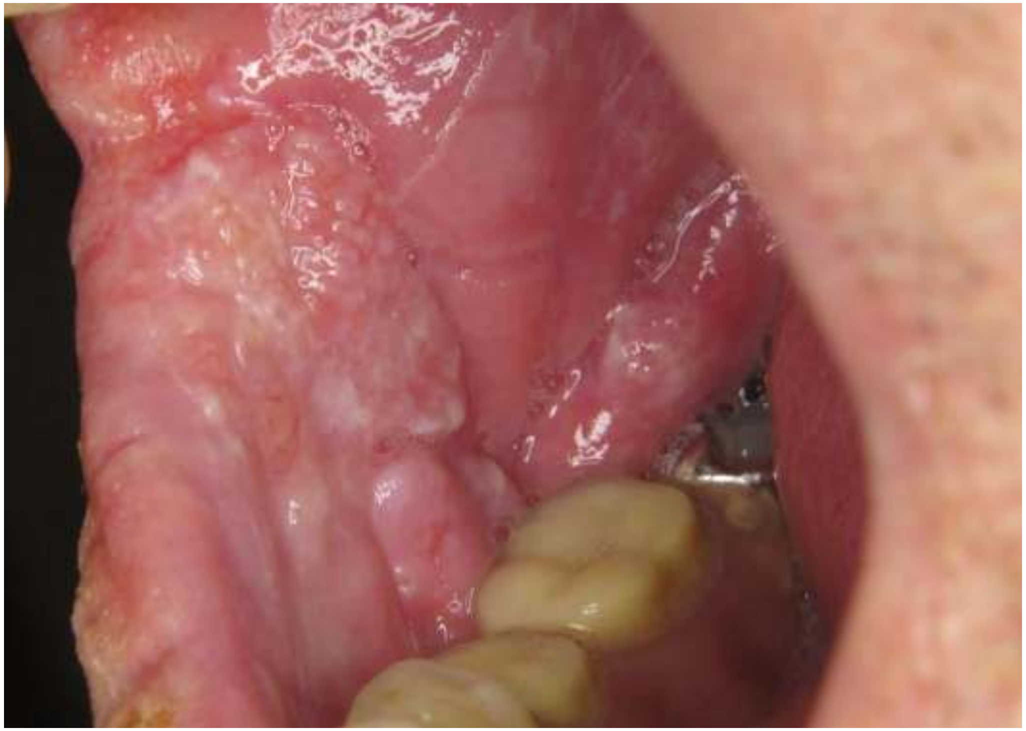
Néoformation tissulaire



Carcinome épidermoide: comment les reconnaitre?

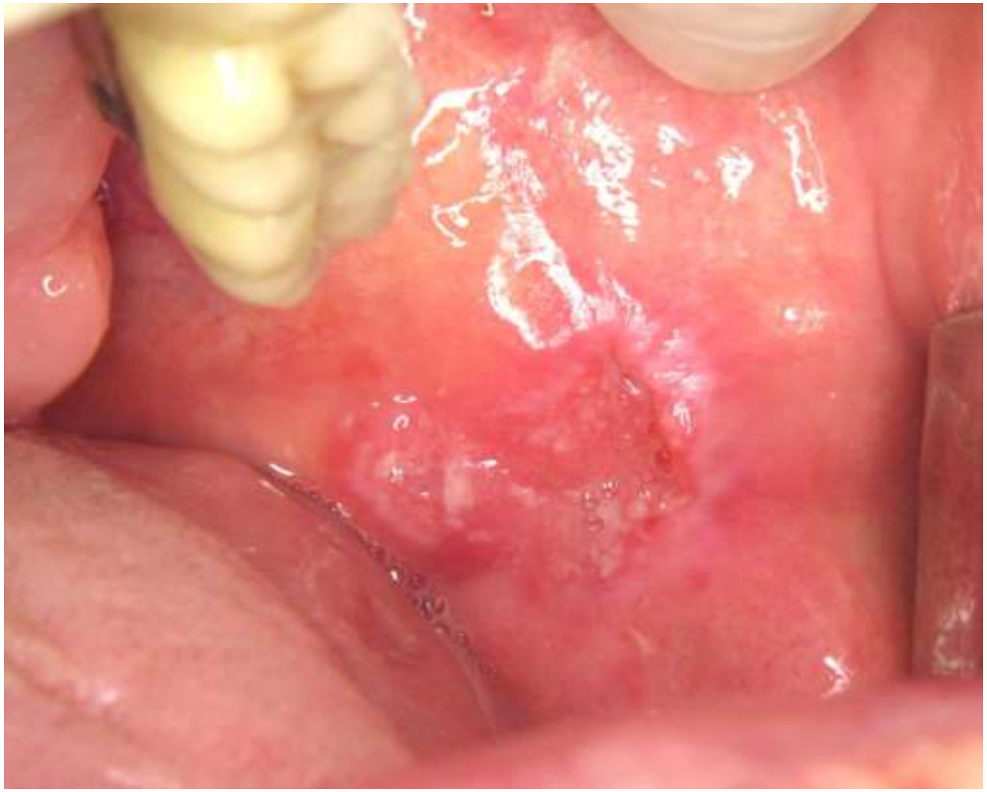
Néoformation tissulaire

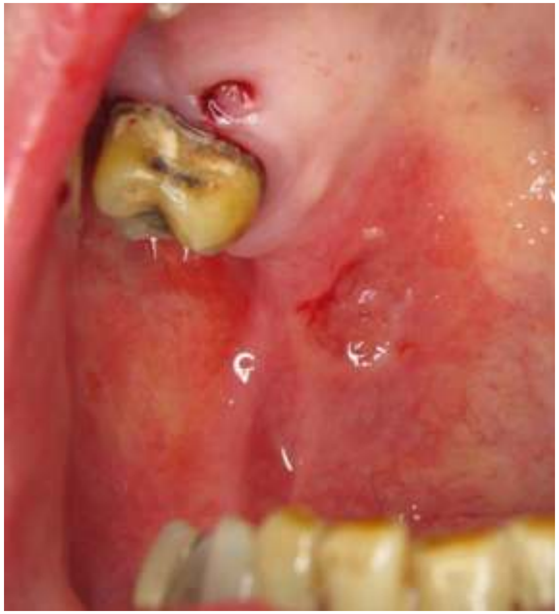




Carcinome épidermoide: comment les reconnaitre?

Ulcération



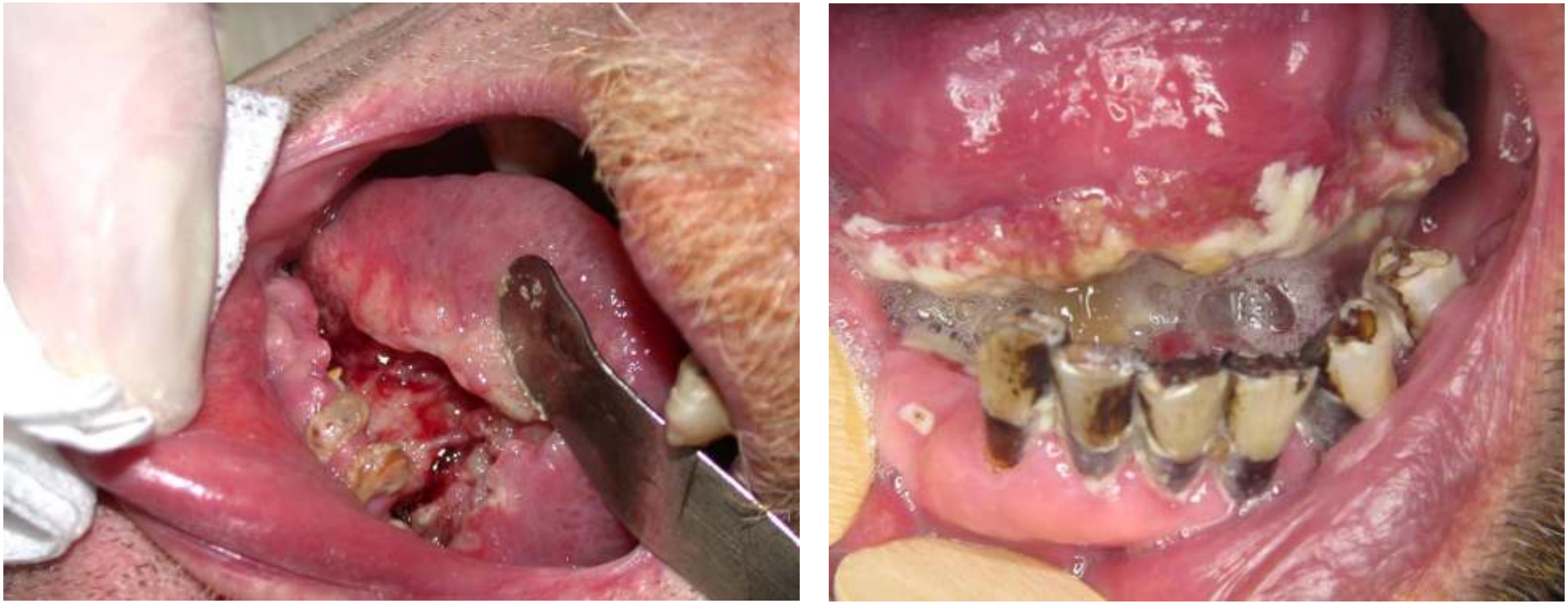


Ulcération à bords surélevés

Une ulcération chronique (>15j) doit être biopsiée quelque soit la forme clinique.

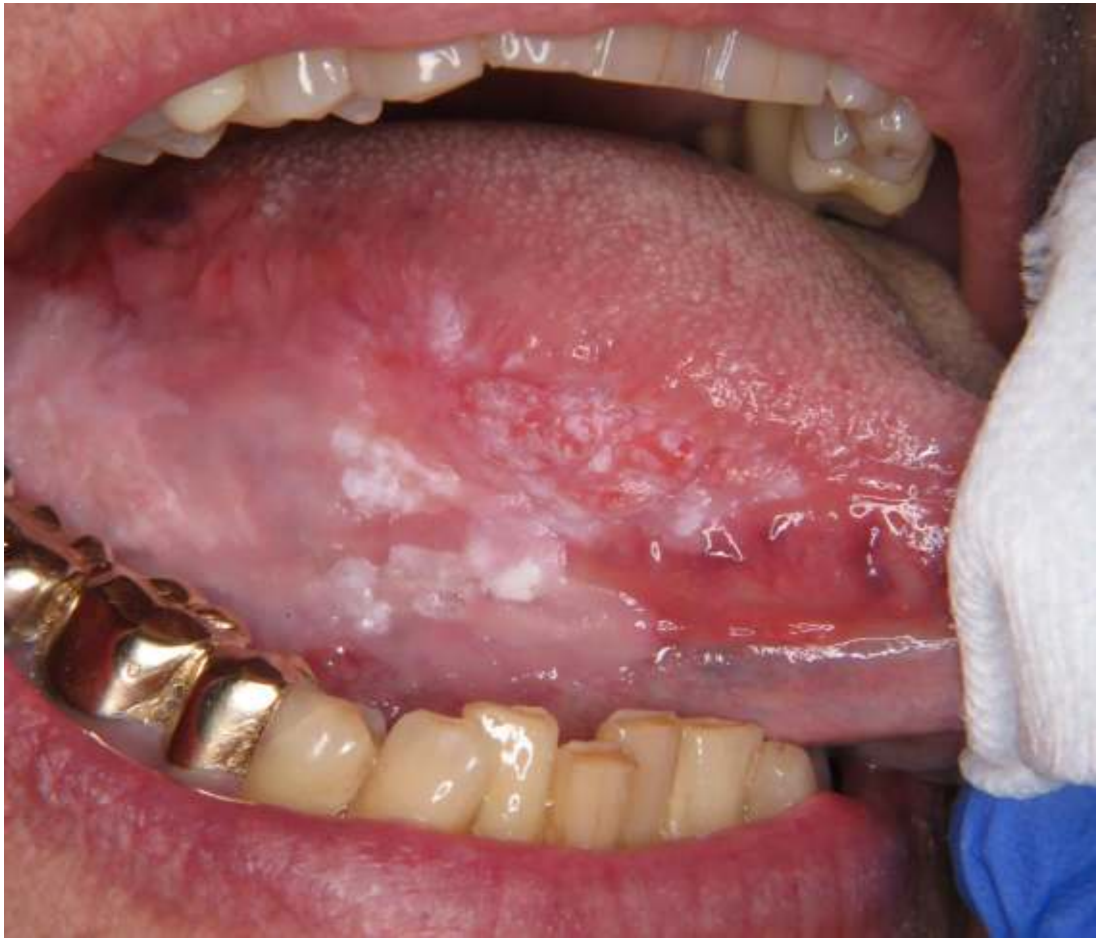
Carcinome épidermoide: comment les reconnaitre?

Fissure



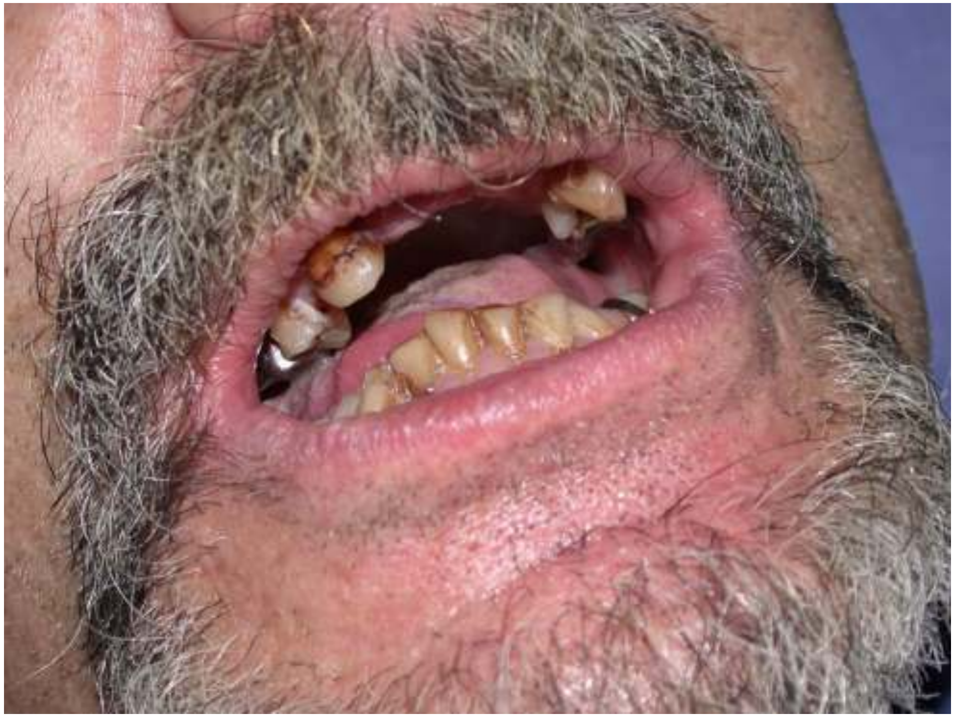
Carcinome épidermoide: comment les reconnaitre?

Plaque blanche et rouge

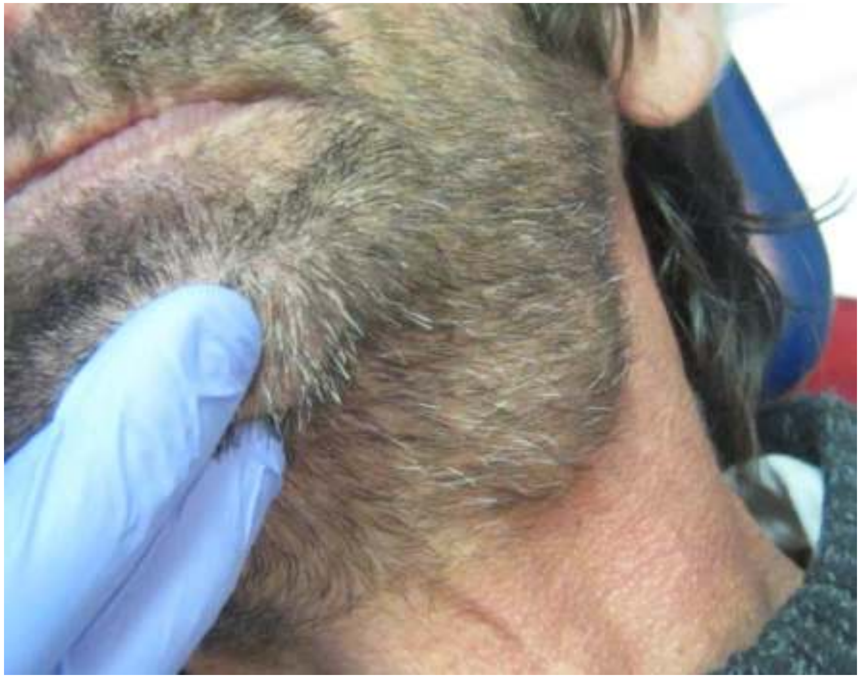


Carcinome épidermoide: comment les reconnaitre?

Signes d'évolution



Trismus



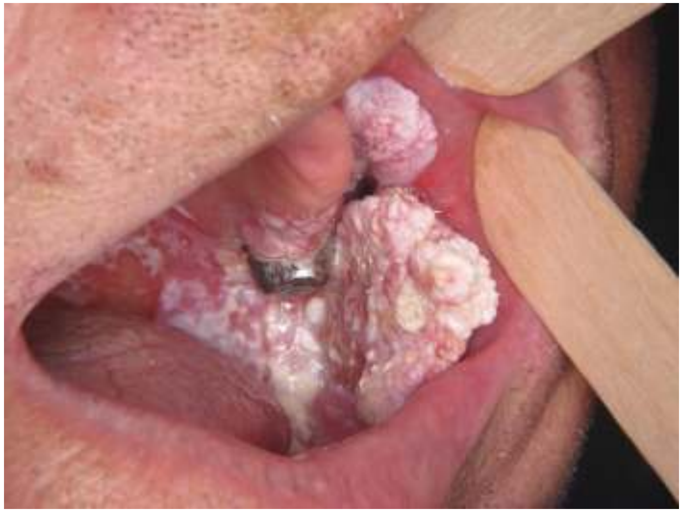
Adénopathie

Formes cliniques des cancers oraux induits par tabacs oraux: CARCINOME VERRUQUEUX

- Aspect vérruciforme
- Localisé à l'endroit où est placé le tabac
- Évolution lente
- Rare/carcinome épidermoïde

.65-70 ans

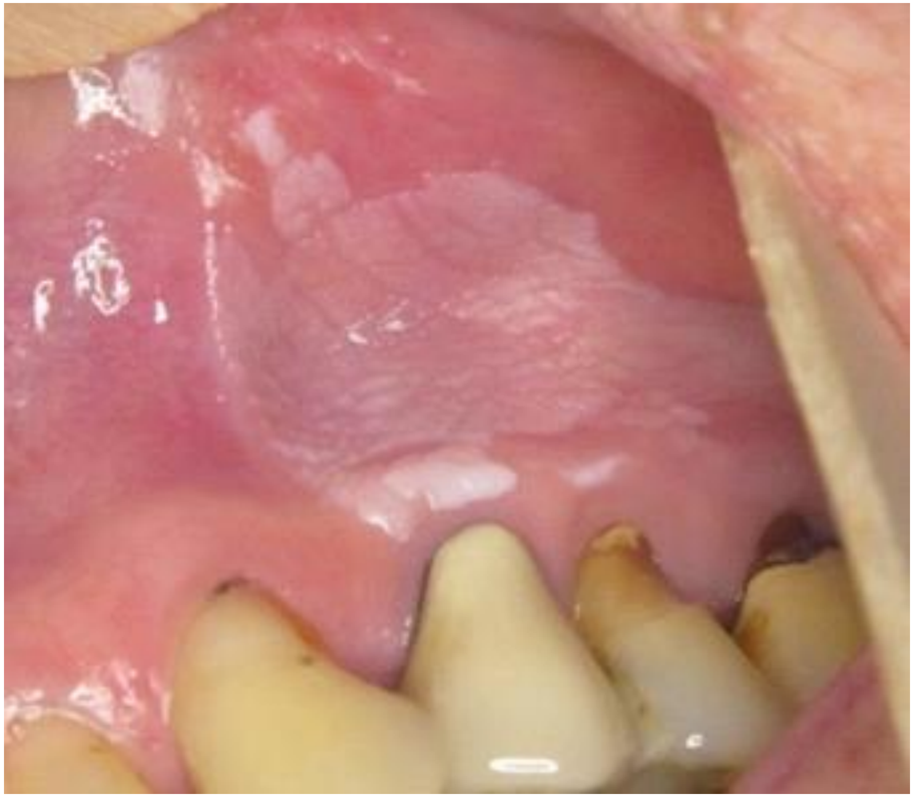
- Tabac non fumé (betel+++)
- Traitement : arrêt tabac et exérèse chirurgicale



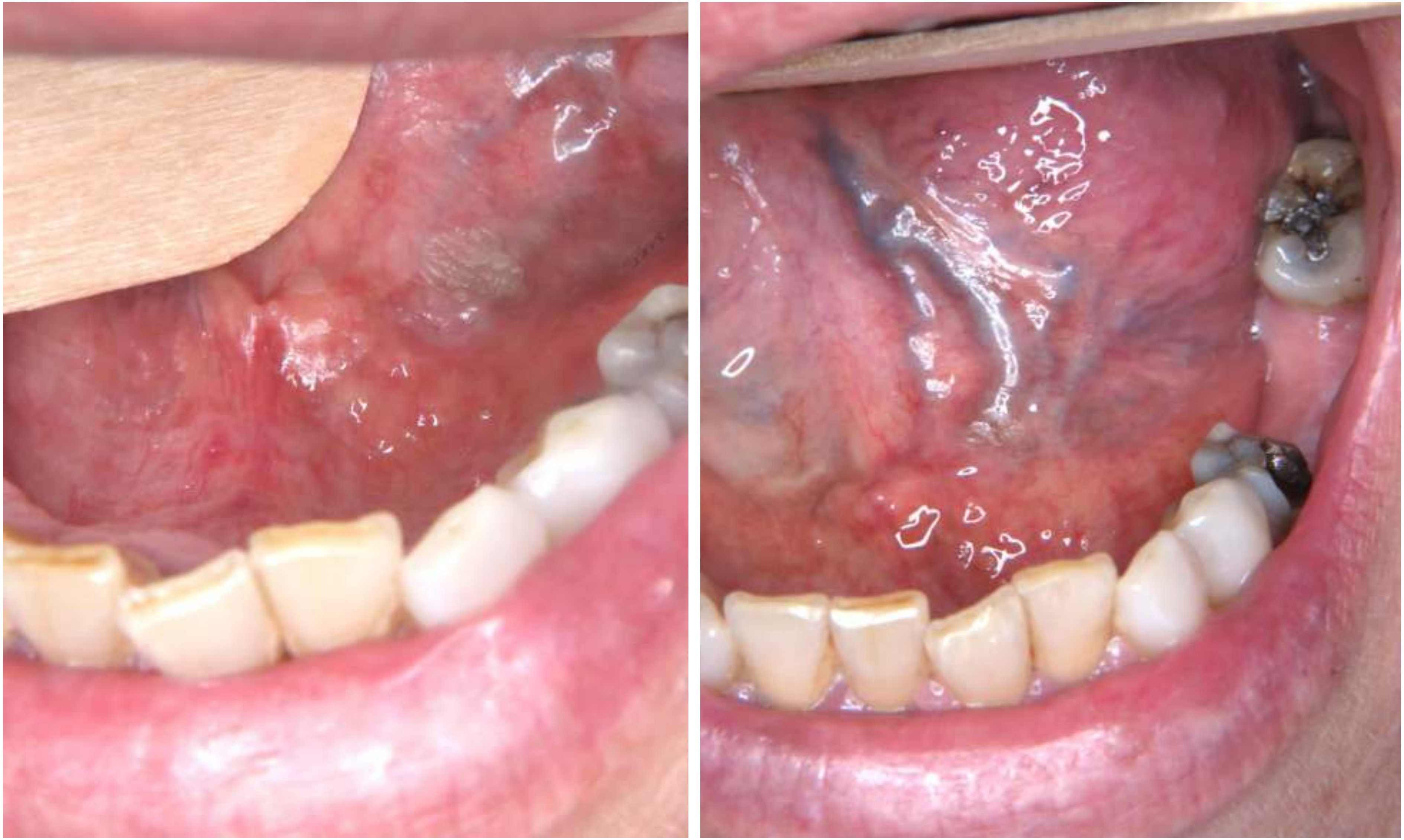
Lésions précancéreuses favorisées par les tabacs oraux

LEUCOPLASIE HOMOGENE

- Plaque blanche kératosique idiopathique ou associé à la consommation de tabac et/ou noix d'arec.
- 8-10 % transformation maligne
- TT: Arret tabac- éxérèse

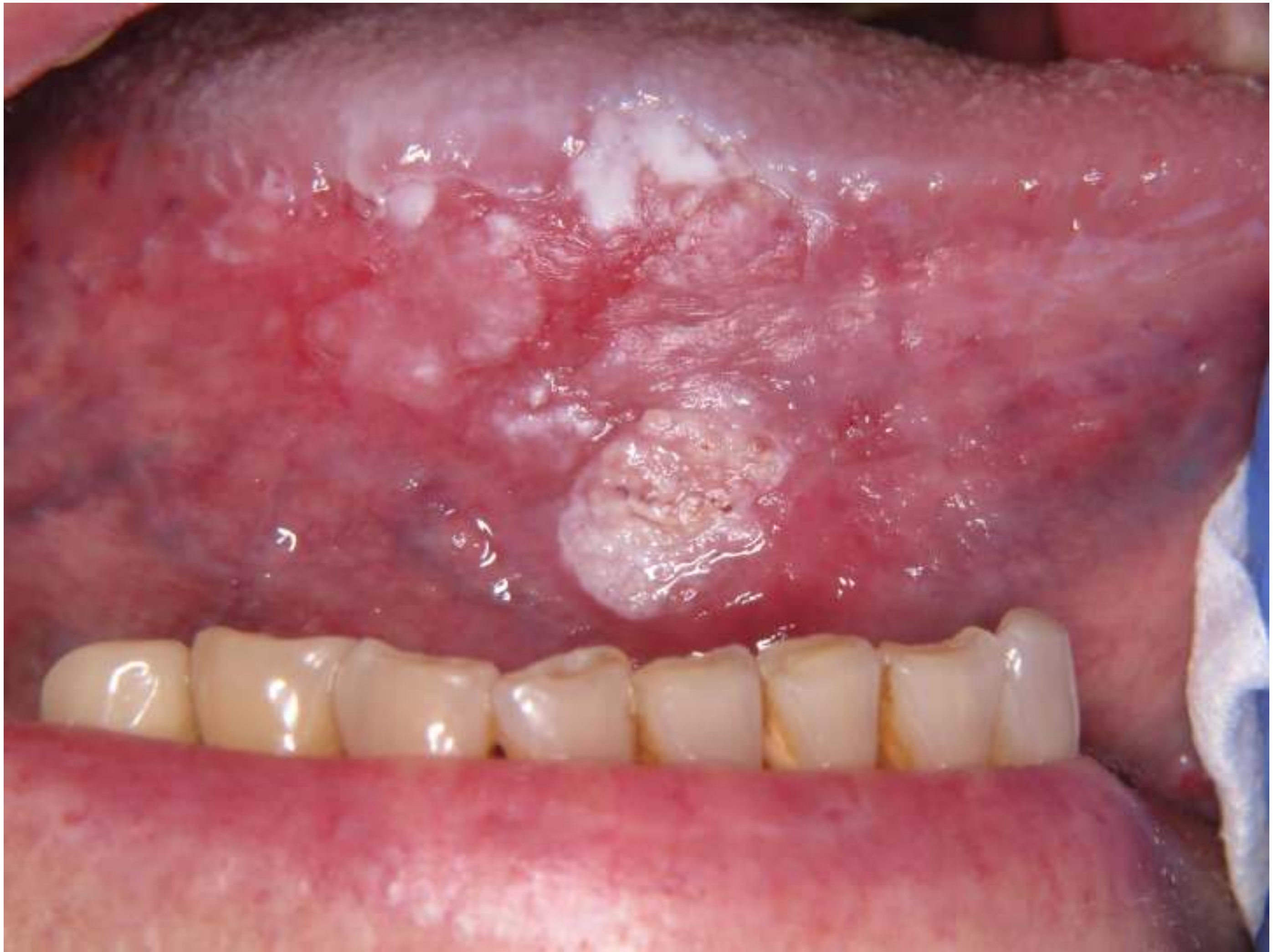


TRAITEMENT LEUCOPLASIE INHOMOGENE:
sevrage tabagique



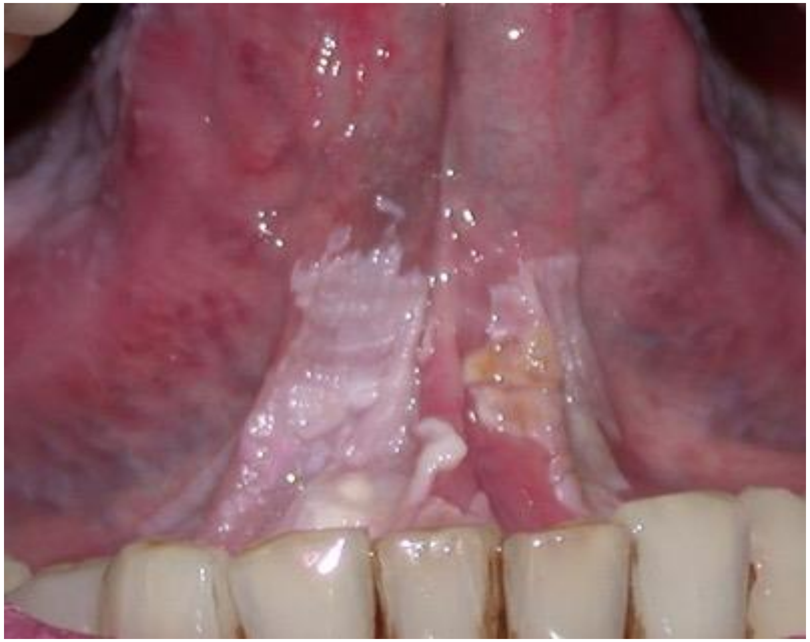
Lésions précancéreuses favorisées par les tabacs oraux

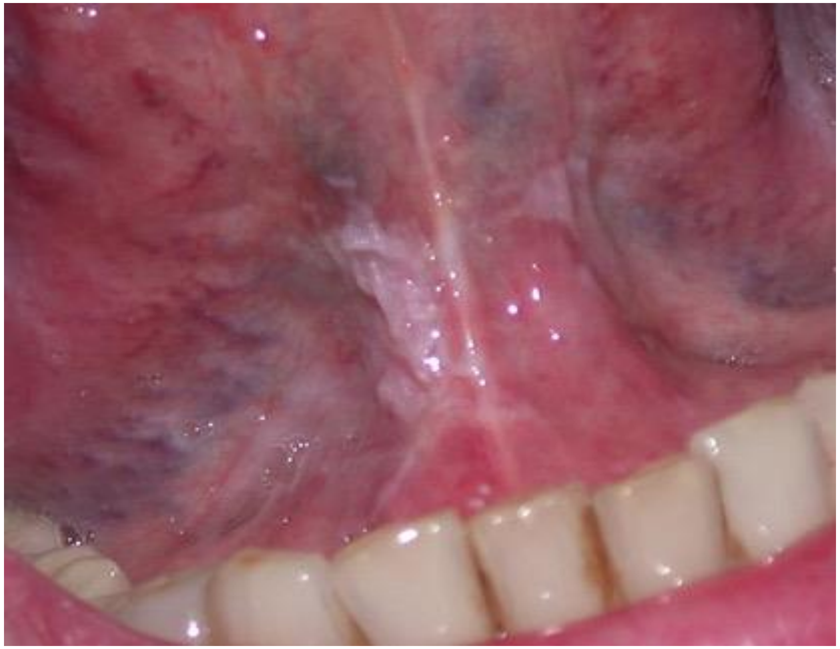
LEUCOPLASIE INHOMOGENE



TRAITEMENT LEUCOPLASIE INHOMOGENE:

sevrage tabagique



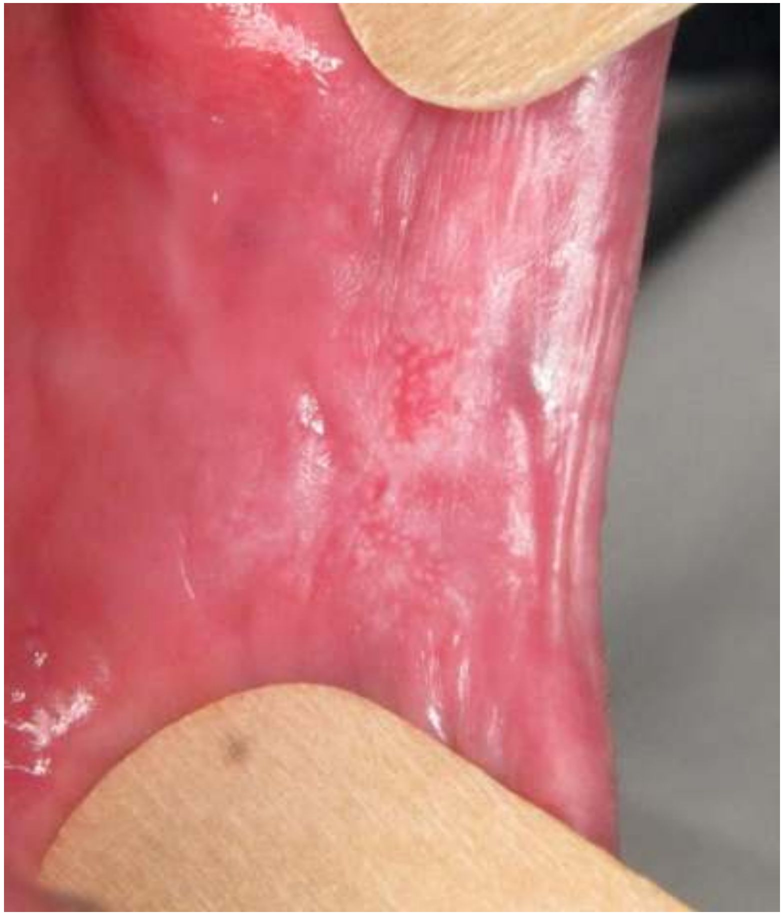


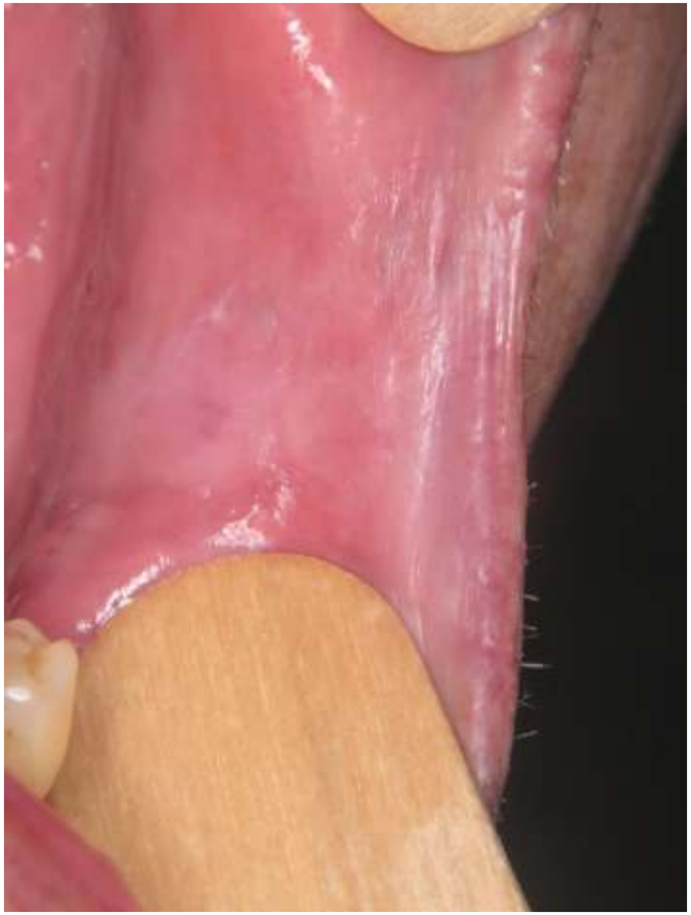
1 mois de sevrage

Martin JC, **97% rémission leucoplasie** due tabac non fumé
(J Am Dent Assoc 1999)

TRAITEMENT LEUCOPLASIE INHOMOGENE:

sevrage tabagique





6 mois après sevrage

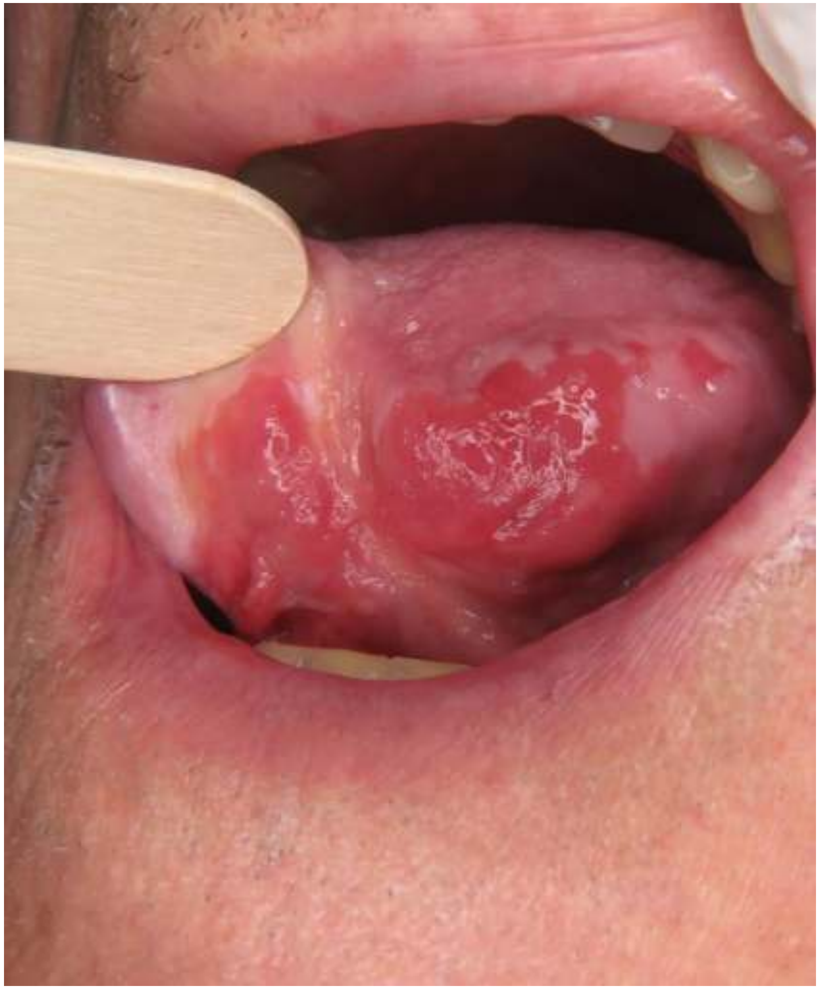
Lésions précancéreuses favorisées par les tabacs oraux

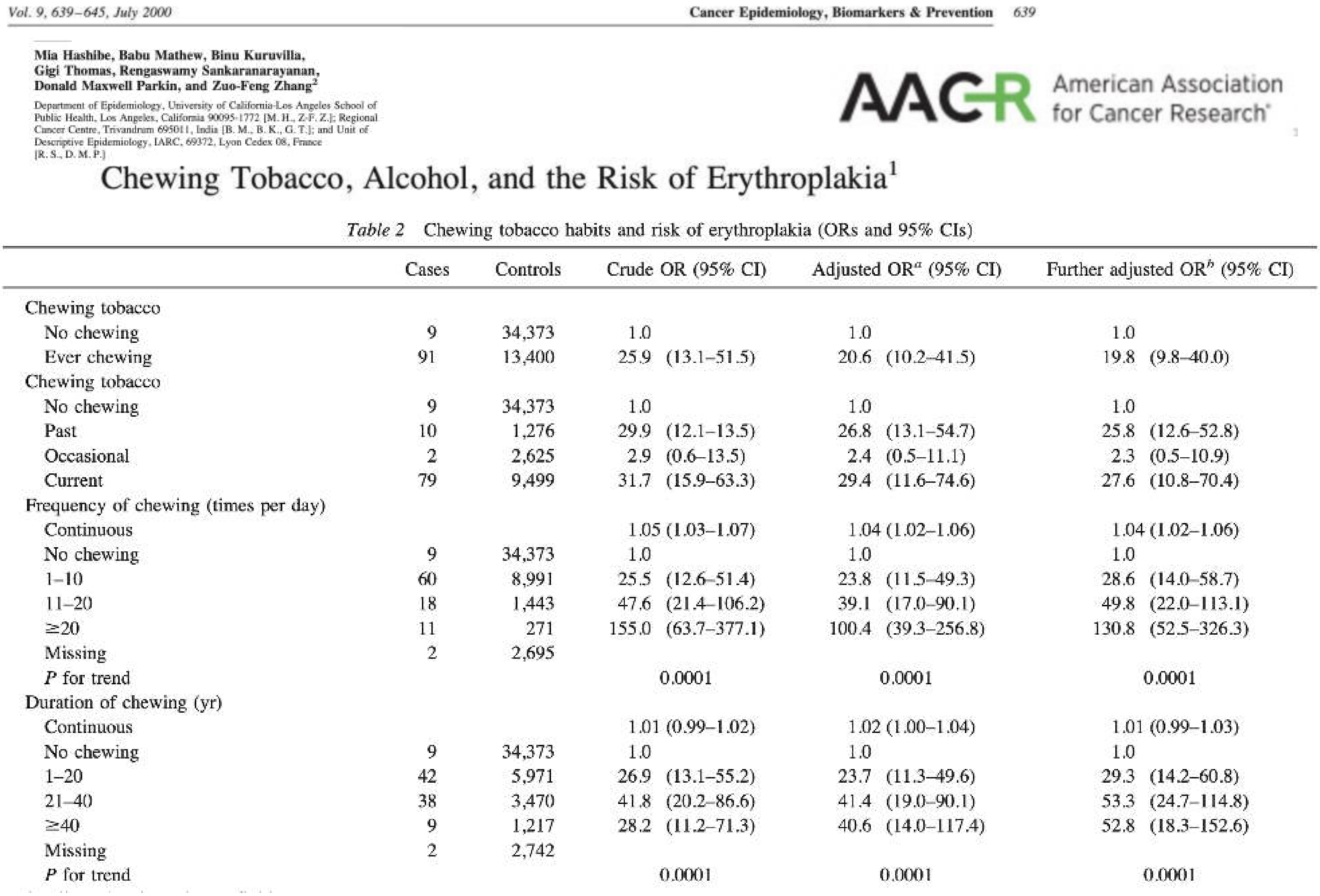
ERYTHROPLASIE

- Plaque rouge idiopathique ou associé à la consommation de tabac et/ou noix d'arec.

- 40 % transformation maligne

-TT: Arret tabac-exérèse





Vol. 9, 639–645, July 2000 Cancer Epidemiology, Biomarkers & Prevention 639

**Mia Hashibe, Babu Mathew, Binu Kuruvilla,
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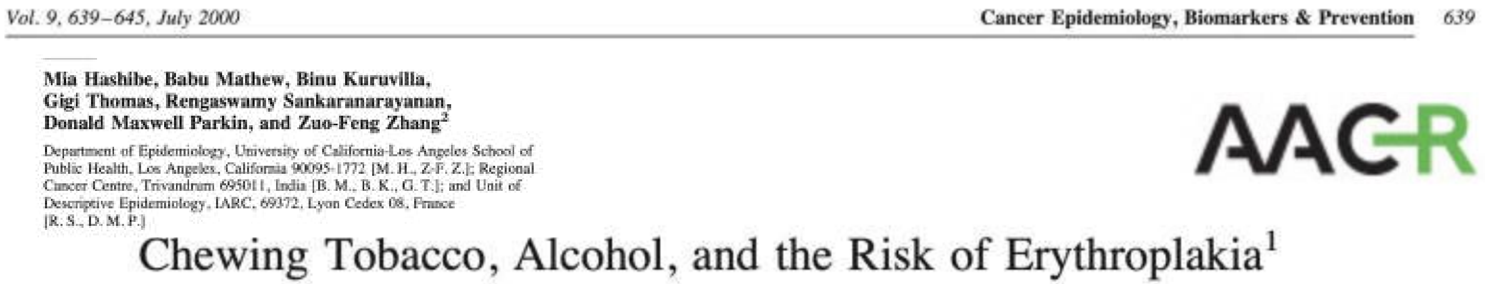
AACR American Association for Cancer Research

Chewing Tobacco, Alcohol, and the Risk of Erythroplakia[1]

Table 2 Chewing tobacco habits and risk of erythroplakia (ORs and 95% CIs)

	Cases	Controls	Crude OR (95% CI)	Adjusted OR[a] (95% CI)	Further adjusted OR[b] (95% CI)
Chewing tobacco					
No chewing	9	34,373	1.0	1.0	1.0
Ever chewing	91	13,400	25.9 (13.1–51.5)	20.6 (10.2–41.5)	19.8 (9.8–40.0)
Chewing tobacco					
No chewing	9	34,373	1.0	1.0	1.0
Past	10	1,276	29.9 (12.1–13.5)	26.8 (13.1–54.7)	25.8 (12.6–52.8)
Occasional	2	2,625	2.9 (0.6–13.5)	2.4 (0.5–11.1)	2.3 (0.5–10.9)
Current	79	9,499	31.7 (15.9–63.3)	29.4 (11.6–74.6)	27.6 (10.8–70.4)
Frequency of chewing (times per day)					
Continuous			1.05 (1.03–1.07)	1.04 (1.02–1.06)	1.04 (1.02–1.06)
No chewing	9	34,373	1.0	1.0	1.0
1–10	60	8,991	25.5 (12.6–51.4)	23.8 (11.5–49.3)	28.6 (14.0–58.7)
11–20	18	1,443	47.6 (21.4–106.2)	39.1 (17.0–90.1)	49.8 (22.0–113.1)
≥20	11	271	155.0 (63.7–377.1)	100.4 (39.3–256.8)	130.8 (52.5–326.3)
Missing	2	2,695			
P for trend			0.0001	0.0001	0.0001
Duration of chewing (yr)					
Continuous			1.01 (0.99–1.02)	1.02 (1.00–1.04)	1.01 (0.99–1.03)
No chewing	9	34,373	1.0	1.0	1.0
1–20	42	5,971	26.9 (13.1–55.2)	23.7 (11.3–49.6)	29.3 (14.2–60.8)
21–40	38	3,470	41.8 (20.2–86.6)	41.4 (19.0–90.1)	53.3 (24.7–114.8)
≥40	9	1,217	28.2 (11.2–71.3)	40.6 (14.0–117.4)	52.8 (18.3–152.6)
Missing	2	2,742			
P for trend			0.0001	0.0001	0.0001

Le risque d’érythroplasie augmente avec la fréquence et la durée de mastication



Vol. 9, 639–645, July 2000 Cancer Epidemiology, Biomarkers & Prevention 639

Mia Hashibe, Babu Mathew, Binu Kuruvilla, Gigi Thomas, Rengaswamy Sankaranarayanan, Donald Maxwell Parkin, and Zuo-Feng Zhang[2]

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AACR American Association for Cancer Research

Chewing Tobacco, Alcohol, and the Risk of Erythroplakia[1]

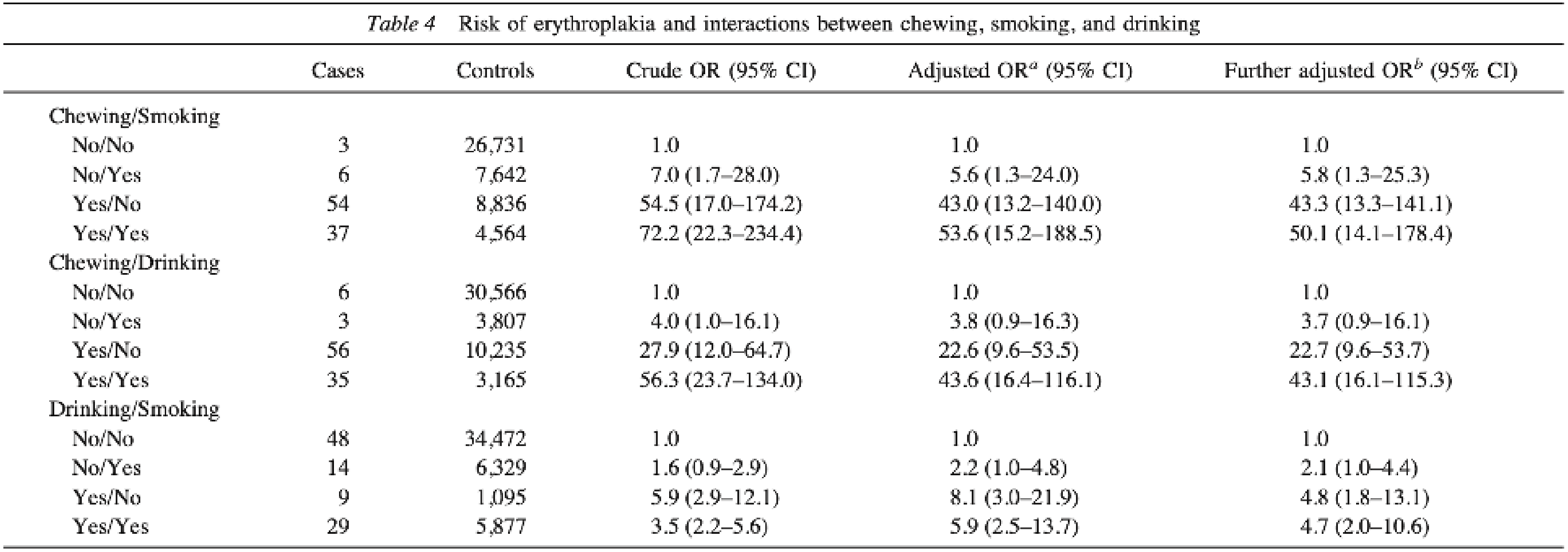


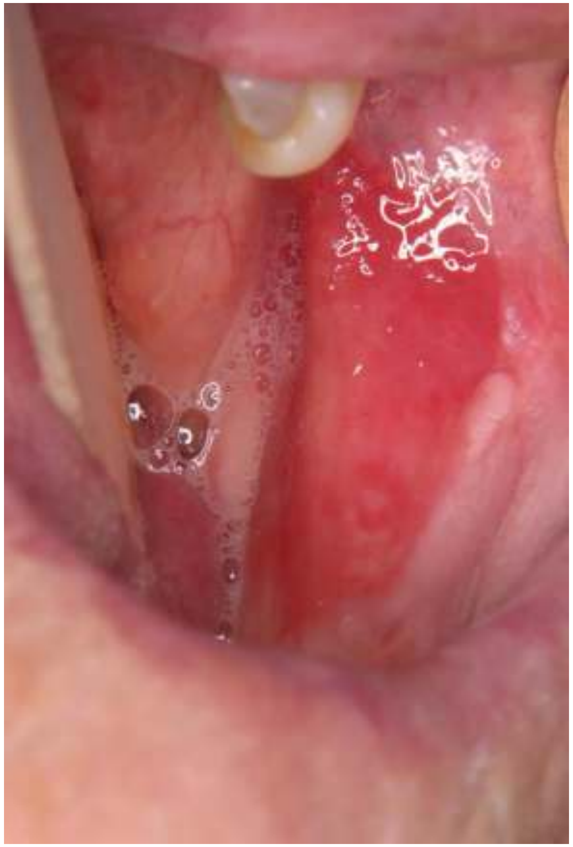
Table 4 Risk of erythroplakia and interactions between chewing, smoking, and drinking

	Cases	Controls	Crude OR (95% CI)	Adjusted OR[a] (95% CI)	Further adjusted OR[b] (95% CI)
Chewing/Smoking					
No/No	3	26,731	1.0	1.0	1.0
No/Yes	6	7,642	7.0 (1.7–28.0)	5.6 (1.3–24.0)	5.8 (1.3–25.3)
Yes/No	54	8,836	54.5 (17.0–174.2)	43.0 (13.2–140.0)	43.3 (13.3–141.1)
Yes/Yes	37	4,564	72.2 (22.3–234.4)	53.6 (15.2–188.5)	50.1 (14.1–178.4)
Chewing/Drinking					
No/No	6	30,566	1.0	1.0	1.0
No/Yes	3	3,807	4.0 (1.0–16.1)	3.8 (0.9–16.3)	3.7 (0.9–16.1)
Yes/No	56	10,235	27.9 (12.0–64.7)	22.6 (9.6–53.5)	22.7 (9.6–53.7)
Yes/Yes	35	3,165	56.3 (23.7–134.0)	43.6 (16.4–116.1)	43.1 (16.1–115.3)
Drinking/Smoking					
No/No	48	34,472	1.0	1.0	1.0
No/Yes	14	6,329	1.6 (0.9–2.9)	2.2 (1.0–4.8)	2.1 (1.0–4.4)
Yes/No	9	1,095	5.9 (2.9–12.1)	8.1 (3.0–21.9)	4.8 (1.8–13.1)
Yes/Yes	29	5,877	3.5 (2.2–5.6)	5.9 (2.5–13.7)	4.7 (2.0–10.6)

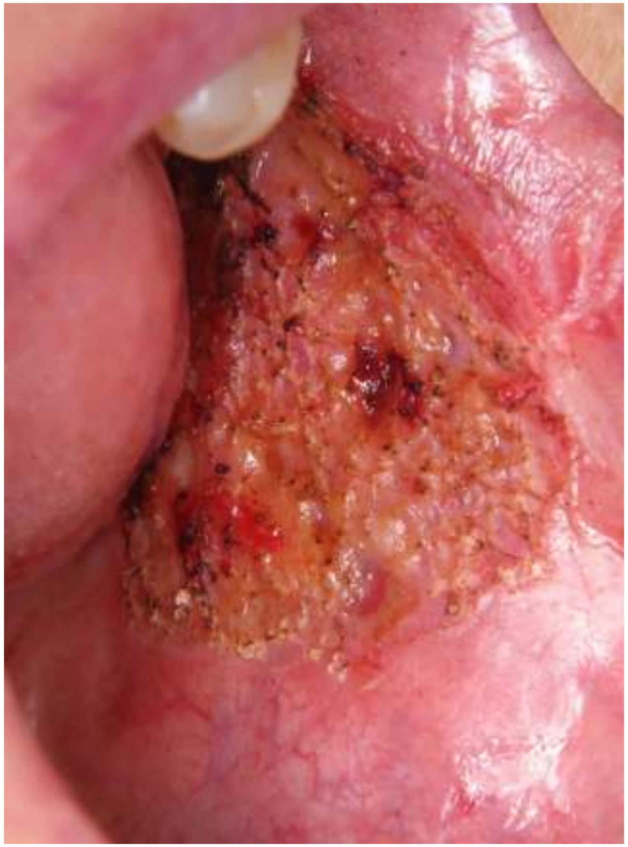
- Fumer augmente peu le risque d’érythroplasie chez les masticateurs de tabacs oraux
- Boire de l’alcool double le risque d’érythroplasie chez les masticateurs de tabacs oraux
- L’alcool seul est un facteur de risque d’érythroplasie plus important que fumer

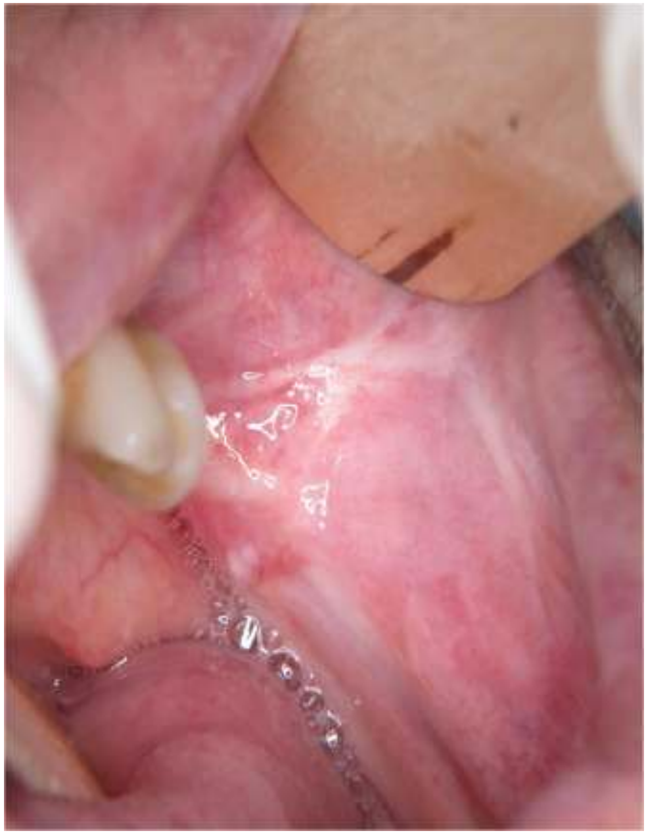
Lésions précancéreuses favorisées par les tabacs oraux

ERYTHROPLASIE



2019 (dysplasie haut grade)





2021

Lésions précancéreuses favorisées par les tabacs oraux

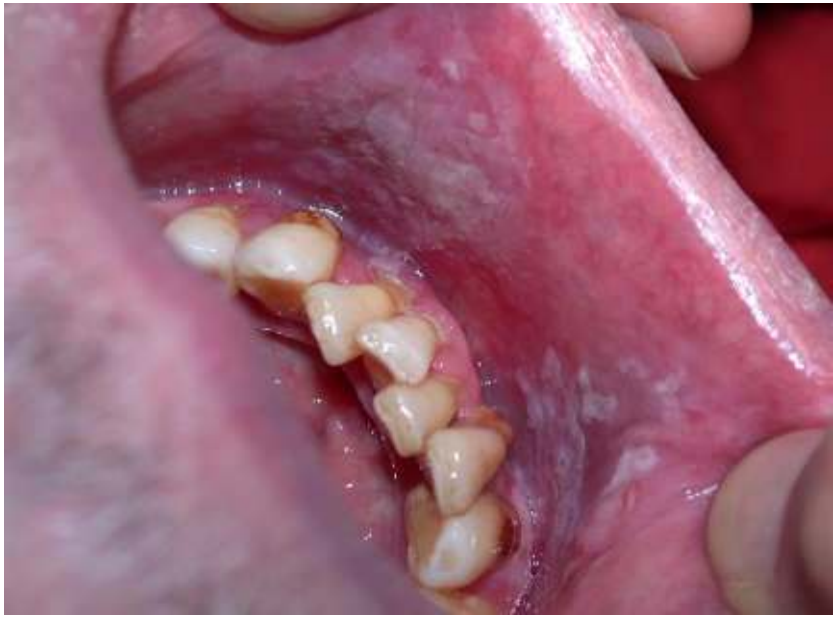
FIBROSE ORALE SOUS MUQUEUSE

Asie et inde +++

Étiologie: noix AREC et pas tabac

Diagnostic:

Ulcération
Sensation brulure
Blancheur muqueuse buccale
Bandes fibreuses palpables parfois associées à trismus



Localisation:

Cavité buccale
Naso-pharynx
Œsophage

Évolution:

Transformation maligne fréquente
Non réversible à arrêt du bétel

TAKE HOME MESSAGE

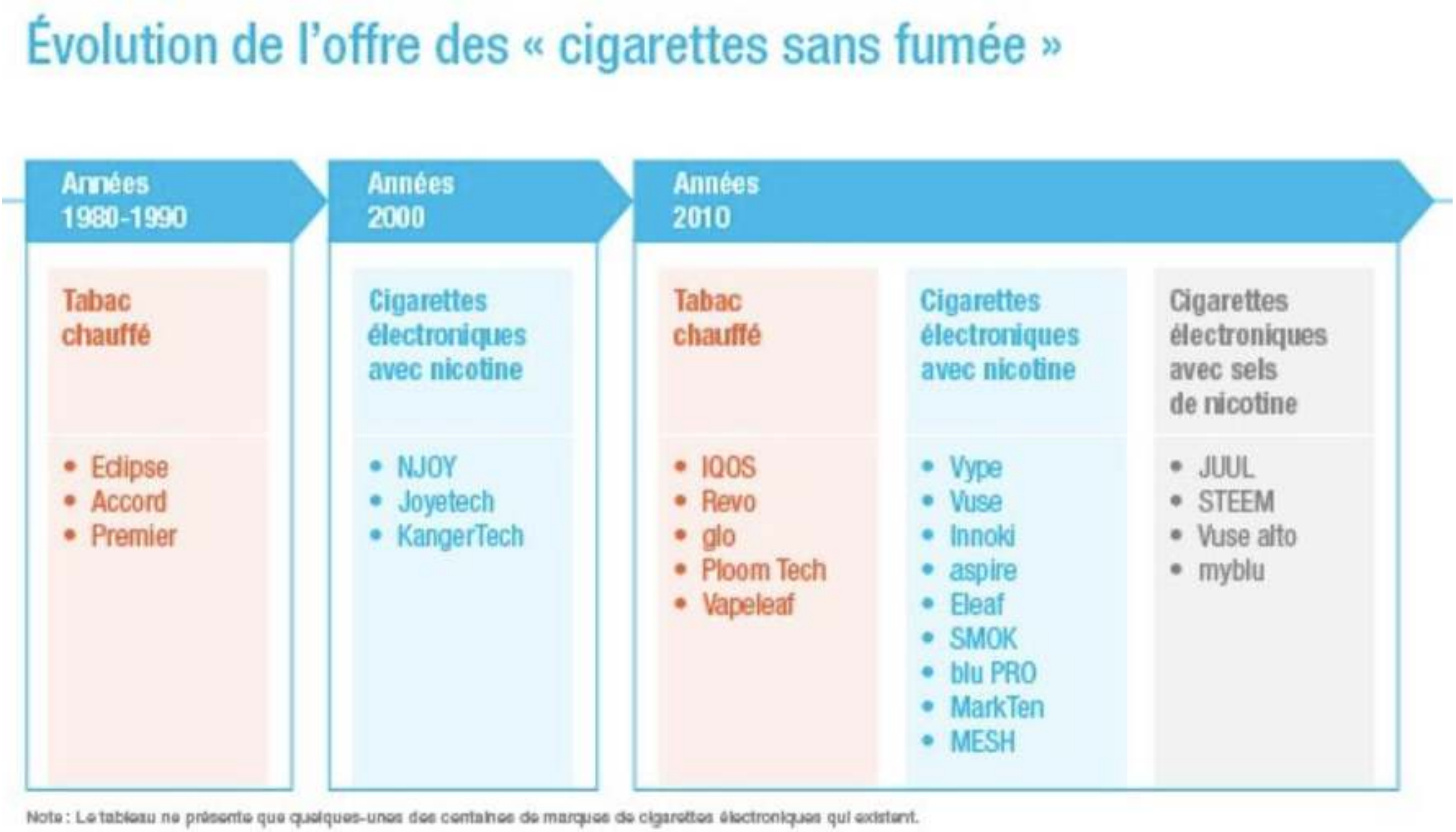
- Consommation des tabacs oraux est un facteur de risque de lésions précancéreuses et de cancers de la cavité orale à l’exception du snus.

- Il faut examiner la cavité orale des consommateurs de tabacs oraux.

- Une biopsie doit être réalisée devant toute lésion de la muqueuse orale imputable au tabacs oraux.

- Le sevrage tabagique est la première étape du traitement des lésons orales à potentiel malin à l’exception de la fibrose orale sous muqueuse qui est irréversible.

LES CIGARETTES SANS FUMEE

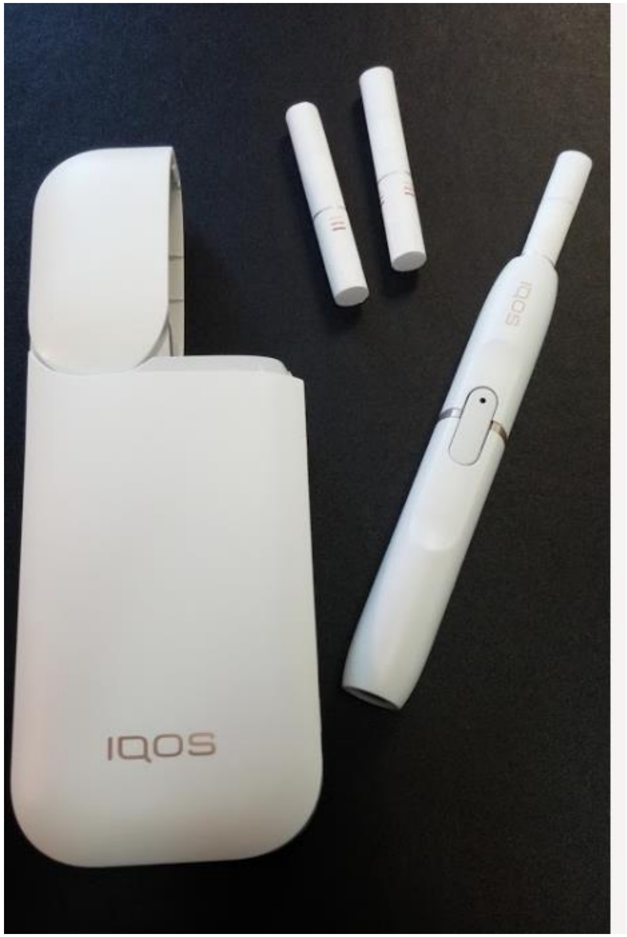


Évolution de l'offre des « cigarettes sans fumée »

Années 1980-1990	Années 2000	Années 2010		
Tabac chauffé	**Cigarettes électroniques avec nicotine**	**Tabac chauffé**	**Cigarettes électroniques avec nicotine**	**Cigarettes électroniques avec sels de nicotine**
• Eclipse • Accord • Premier	• NJOY • Joyetech • KangerTech	• IQOS • Revo • glo • Ploom Tech • Vapeleaf	• Vype • Vuse • Innoki • aspire • Eleaf • SMOK • blu PRO • MarkTen • MESH	• JUUL • STEEM • Vuse alto • myblu

Note : Le tableau ne présente que quelques-unes des centaines de marques de cigarettes électroniques qui existent.

TABACS CHAUFFES



- **Chauffage du tabac à 350 degrés pour produire de la nicotine qui est aspiré sous forme d'aérosol**

- **Différence avec cigarette classique:** absence de combustion (600 degrès) et de fumée

- **Différence avec la cigarette électronique:** ce n'est pas un liquide qui est chauffé mais du tabac

Heat-Not-Burn Tobacco Cigarettes: Smoke by Any Other Name

JAMA Internal Medicine July 2017 Volume 177, Number 7

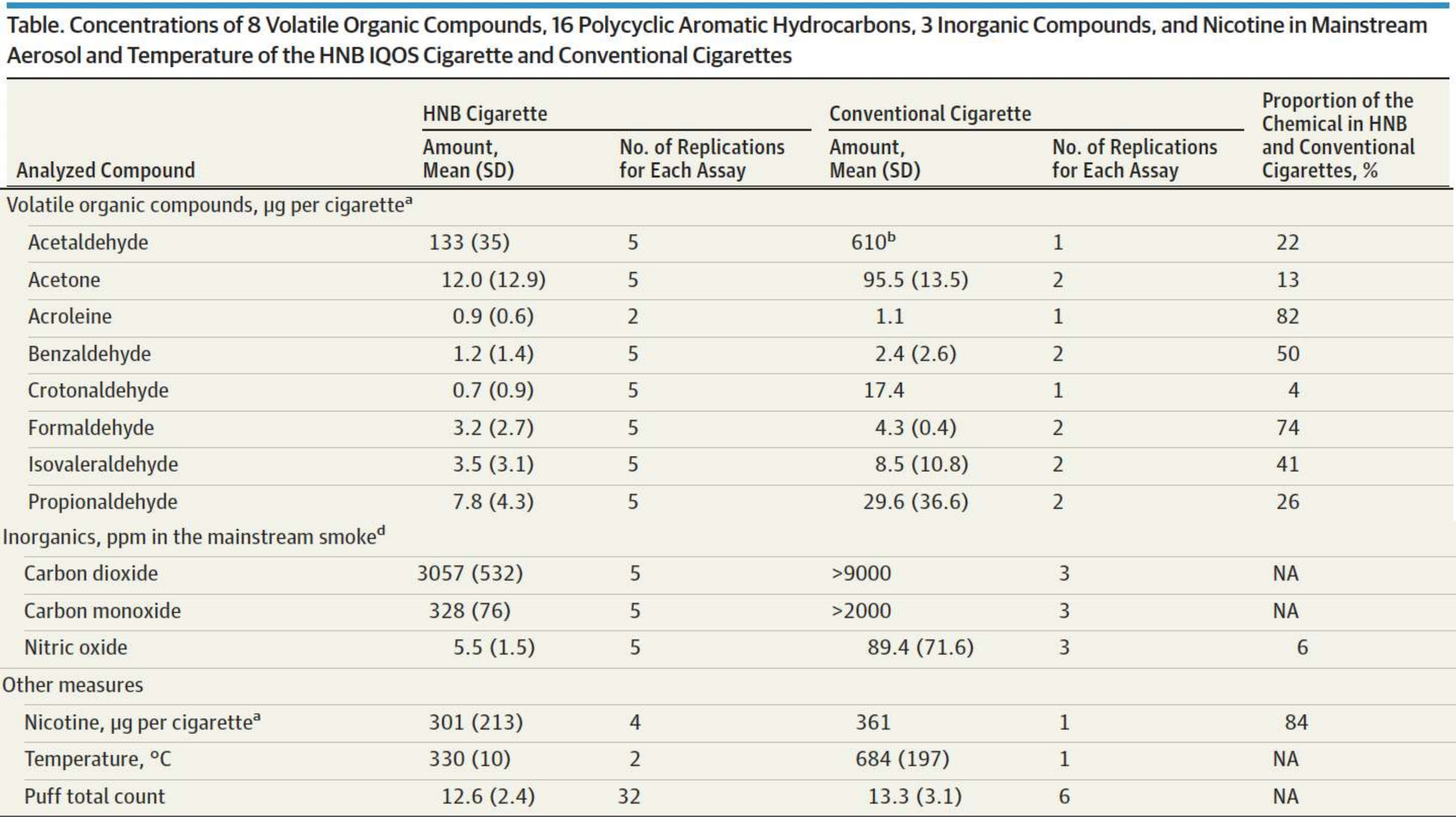


Table. Concentrations of 8 Volatile Organic Compounds, 16 Polycyclic Aromatic Hydrocarbons, 3 Inorganic Compounds, and Nicotine in Mainstream Aerosol and Temperature of the HNB IQOS Cigarette and Conventional Cigarettes

Analyzed Compound	HNB Cigarette		Conventional Cigarette		Proportion of the Chemical in HNB and Conventional Cigarettes, %
	Amount, Mean (SD)	No. of Replications for Each Assay	Amount, Mean (SD)	No. of Replications for Each Assay	
Volatile organic compounds, µg per cigarette[a]					
Acetaldehyde	133 (35)	5	610[b]	1	22
Acetone	12.0 (12.9)	5	95.5 (13.5)	2	13
Acroleine	0.9 (0.6)	2	1.1	1	82
Benzaldehyde	1.2 (1.4)	5	2.4 (2.6)	2	50
Crotonaldehyde	0.7 (0.9)	5	17.4	1	4
Formaldehyde	3.2 (2.7)	5	4.3 (0.4)	2	74
Isovaleraldehyde	3.5 (3.1)	5	8.5 (10.8)	2	41
Propionaldehyde	7.8 (4.3)	5	29.6 (36.6)	2	26
Inorganics, ppm in the mainstream smoke[d]					
Carbon dioxide	3057 (532)	5	>9000	3	NA
Carbon monoxide	328 (76)	5	>2000	3	NA
Nitric oxide	5.5 (1.5)	5	89.4 (71.6)	3	6
Other measures					
Nicotine, µg per cigarette[a]	301 (213)	4	361	1	84
Temperature, °C	330 (10)	2	684 (197)	1	NA
Puff total count	12.6 (2.4)	32	13.3 (3.1)	6	NA

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Heat-Not-Burn Tobacco Cigarettes: Smoke by Any Other Name

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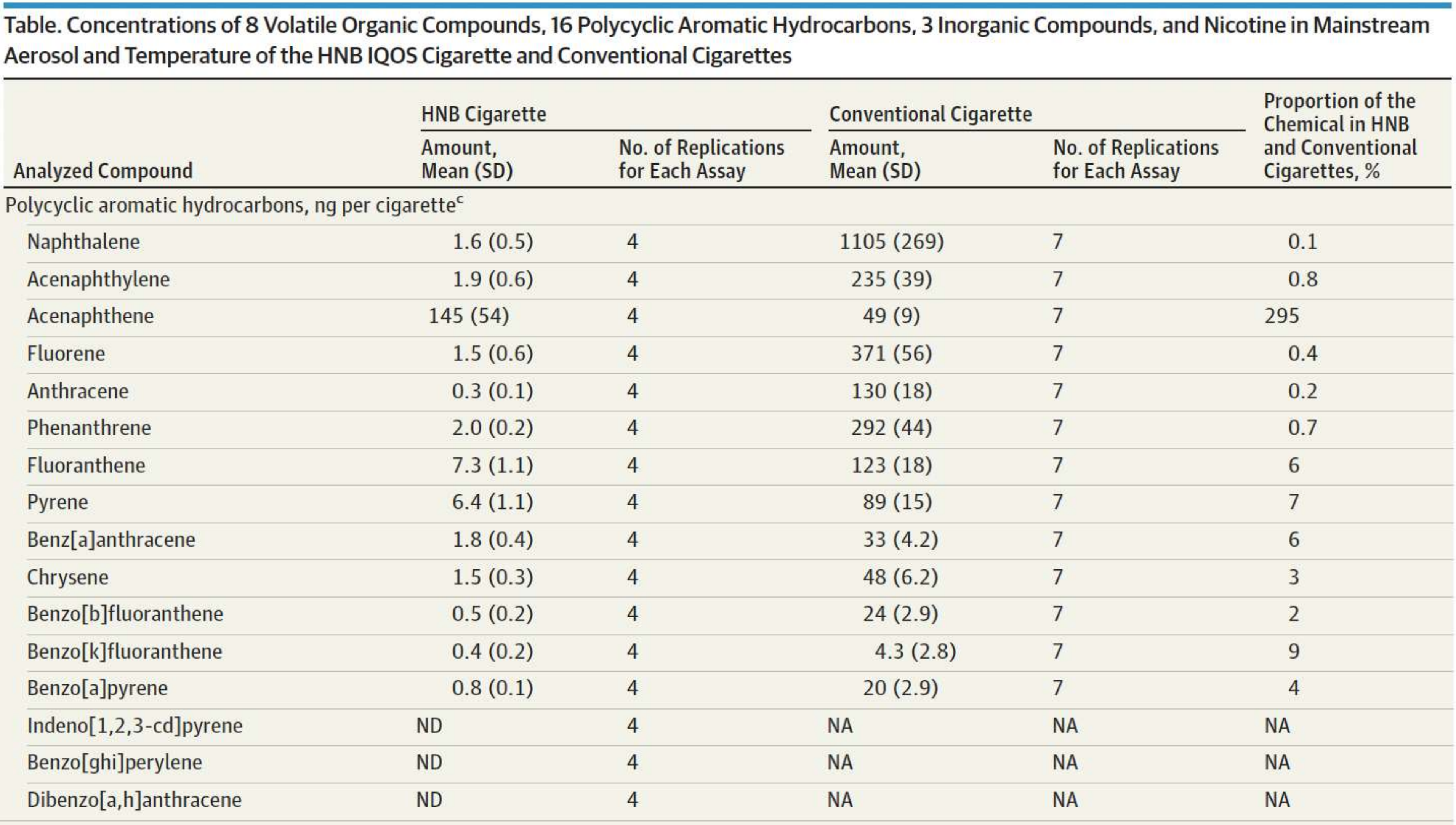

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	Amount, Mean (SD)	No. of Replications for Each Assay	Amount, Mean (SD)	No. of Replications for Each Assay	
Polycyclic aromatic hydrocarbons, ng per cigarette[c]					
Naphthalene	1.6 (0.5)	4	1105 (269)	7	0.1
Acenaphthylene	1.9 (0.6)	4	235 (39)	7	0.8
Acenaphthene	145 (54)	4	49 (9)	7	295
Fluorene	1.5 (0.6)	4	371 (56)	7	0.4
Anthracene	0.3 (0.1)	4	130 (18)	7	0.2
Phenanthrene	2.0 (0.2)	4	292 (44)	7	0.7
Fluoranthene	7.3 (1.1)	4	123 (18)	7	6
Pyrene	6.4 (1.1)	4	89 (15)	7	7
Benz[a]anthracene	1.8 (0.4)	4	33 (4.2)	7	6
Chrysene	1.5 (0.3)	4	48 (6.2)	7	3
Benzo[b]fluoranthene	0.5 (0.2)	4	24 (2.9)	7	2
Benzo[k]fluoranthene	0.4 (0.2)	4	4.3 (2.8)	7	9
Benzo[a]pyrene	0.8 (0.1)	4	20 (2.9)	7	4
Indeno[1,2,3-cd]pyrene	ND	4	NA	NA	NA
Benzo[ghi]perylene	ND	4	NA	NA	NA
Dibenzo[a,h]anthracene	ND	4	NA	NA	NA

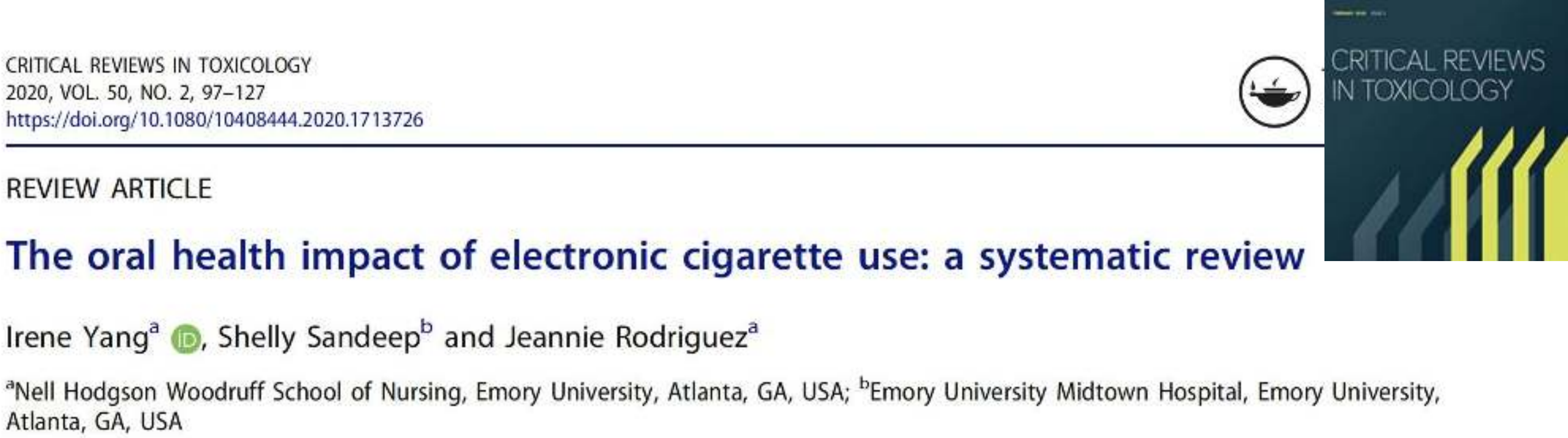
Oral cancer and tobacco: developments in harm reduction

M. N. Pemberton[1]

BRITISH DENTAL JOURNAL | Advance Online Publication | NOVEMBER 2 2018

Table 2 Comparison of conventional cigarettes, heat-not-burn (HNB) cigarettes and e-cigarettes

Conventional cigarettes	HNB cigarettes	e-cigarettes
Tobacco containing	Tobacco containing	Tobacco extract, or non-tobacco, containing
Nicotine containing	Nicotine containing	Nicotine or non-nicotine containing
Burning of tobacco (>800°c)	Heating of tobacco (<350°c)	Heating of e-liquid
Smoke generated	Predominantly aerosol generated	Aerosol generated
Smoke contains significant levels of carcinogens	Aerosol contains some carcinogens	Aerosol contains low or insignificant levels of carcinogens



CRITICAL REVIEWS IN TOXICOLOGY
2020, VOL. 50, NO. 2, 97–127
https://doi.org/10.1080/10408444.2020.1713726

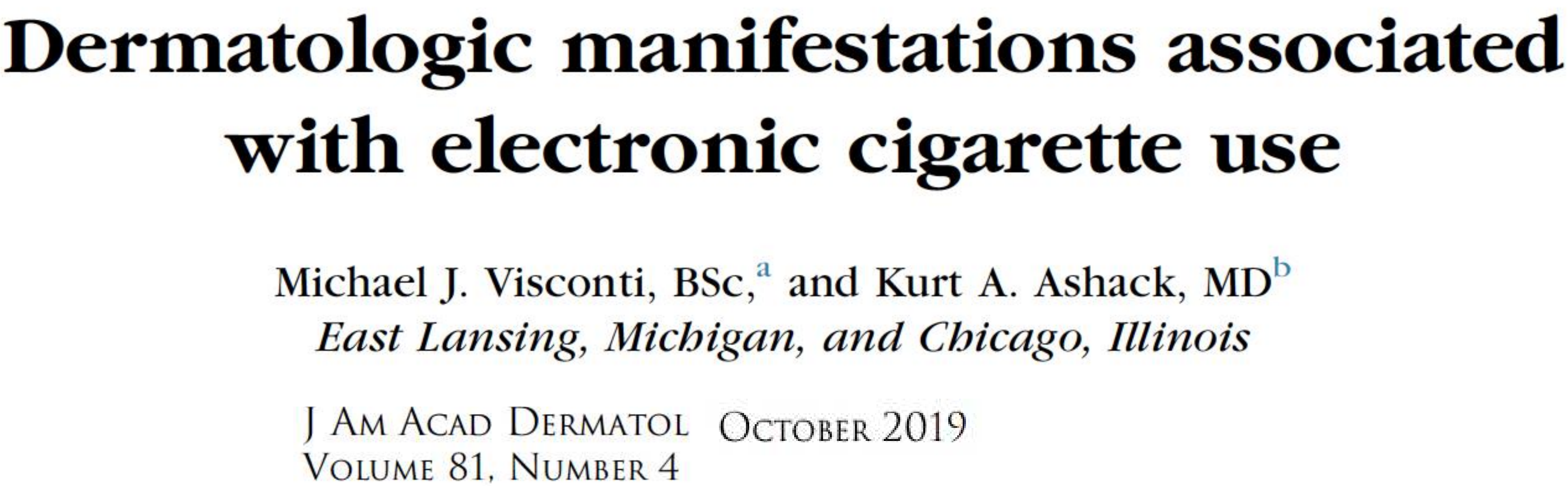
REVIEW ARTICLE

The oral health impact of electronic cigarette use: a systematic review

Irene Yang[a], Shelly Sandeep[b] and Jeannie Rodriguez[a]

[a]Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA, USA; [b]Emory University Midtown Hospital, Emory University, Atlanta, GA, USA

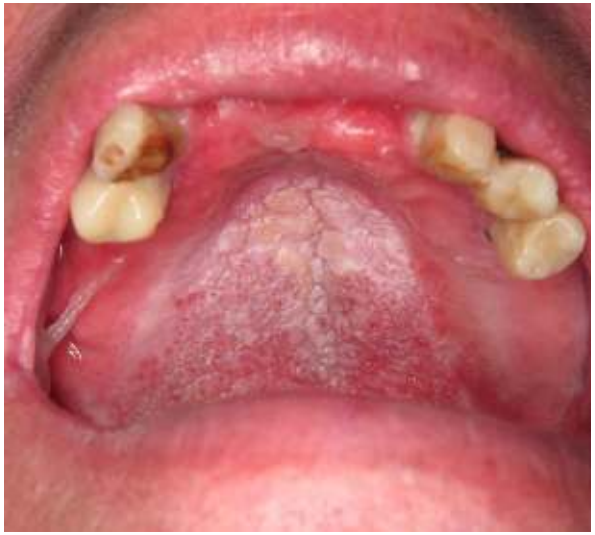
- Résultats des études peu concluant
- Risques moindres qu’avec cigarette fumée
- Prévalence parodontite supérieure à non fumeur mais études contradictoires
- Perte osseuse péri-implantaire supérieure à non fumeur
- Fêlures dentaires et dents fracturées plus nombreuses que chez les non fumeurs
- Augmentation des caries dentaires par rapport au non fumeur



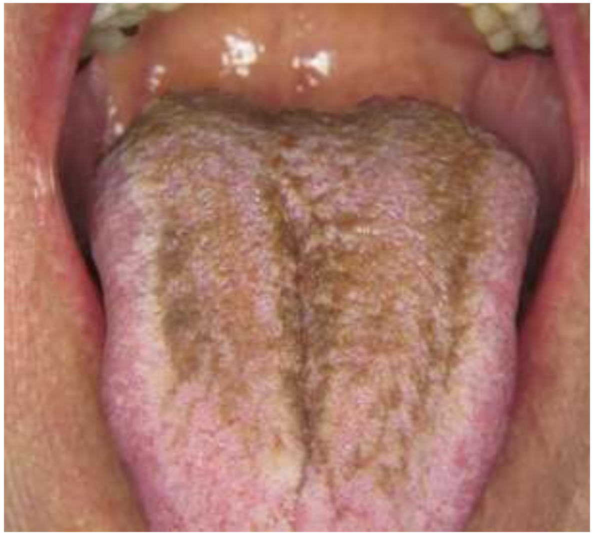
Dermatologic manifestations associated with electronic cigarette use

Michael J. Visconti, BSc,[a] and Kurt A. Ashack, MD[b]
East Lansing, Michigan, and Chicago, Illinois

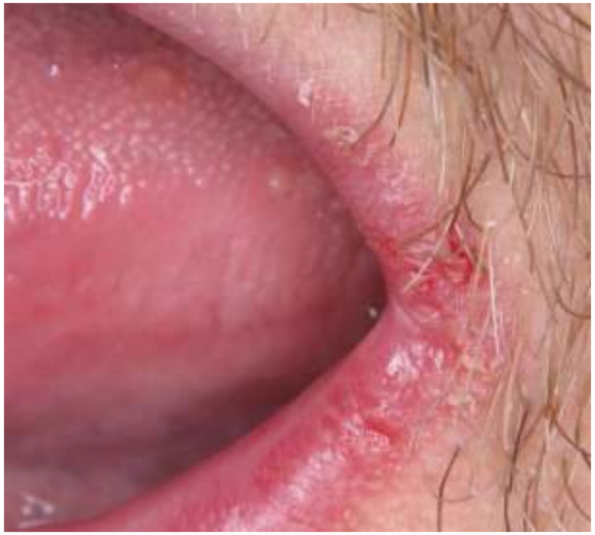
J Am Acad Dermatol October 2019
Volume 81, Number 4



Stomatite nicotinique



Langue villeuse



perlèche

?...

TAKE HOME MESSAGE

- Effets à long terme des cigarettes non fumées sur la santé orale restent à déterminer.

- La cigarette électronique est moins nocive que la cigarette fumée mais elle pourrait avoir des effets délétères sur les tissus parodontaux et les dents

- Les tabacs chauffés contiennent des substances cancérigènes en quantité moindre que le tabac fumé mais leurs effets sont à étudier