www.SLEEPonline.be

LIÈGE université Médecine

Jeune homme de 30 ans, papcn à vie ou traitement ortho-chir? Une décision complexe!

Sylvianne RASKIN

Orthodontiste agréée & Docteure en Médecine Dentaire

Pratique libérale et Professeure attachée Uliège

SleepOnline, Samedi 30 mai 2026

Orthodontie Prévention Logopédie Interception Sommeil Traitement

La Polyclinique Mosane

Place Reine Astrid, 19 - 4600 Visé

Clinique André Renard

CHU de Liège

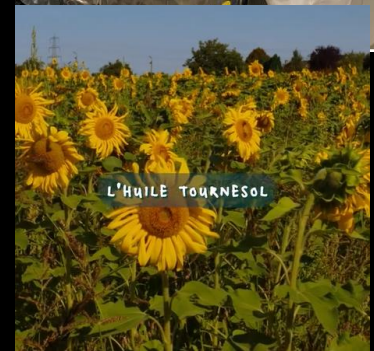
Nico, né en 1992

- Fils de ma 1ère assistante dentaire
- Suivi orthodontique

  avec surveillance fonctions oro-buccales
- Traitement Orthodontique Régulier

  en préadolescence, finition esthétique
- Etudes HEC

  Chercheur/chargé projet en agro-alimentaire urbain



Nico, 27 ans

- PSG en 2019

IAH 17.4H RDI 20, indices efficacité 41.3%, qualité 38.2%, continuité 87%

ORL RAS

CEPH +++ saos

Subtype A: "Classic"

Feature	Level[a]
Age	Younger
Sex	Male
BMI	Obese
Symptoms	Sleepy, involuntary sleep, fatigued
Comorbidity	Low
PSG	AHI High T90% Medium

Risk:
Drowsy driving
Incident CVD

Treatment:
Most CPAP benefit
? CPAP alone

Subtype B: Oldest, comorbid

Feature	Level[a]
Age	Oldest
Sex	Male
BMI	Obese
Symptoms	Naps, snoring disturbs partner
Comorbidity	Highest
PSG	AHI High T90% High

Risk:
Low CPAP adherence
High prevalent CVD
No incident CVD risk

Treatment:
Least CPAP benefit
? Manage comorbidity

Subtype C: Female, insomnia

Feature	Level[a]
Age	Middle age
Sex	Female
BMI	Overweight-obese
Symptoms	Difficulty falling asleep, early awakening, nonrestorative sleep
Comorbidity	Medium
PSG	AHI Medium T90% Medium

Risk:
Low CPAP adherence
? Lower incident Stroke

Treatment:
Medium CPAP benefit (apneic symptoms, restful sleep)
? CBTi + CPAP

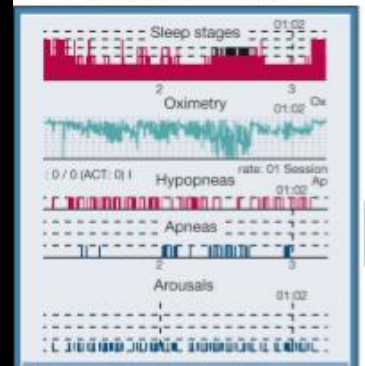
Subtype D: Youngest, upper airway symptoms

Feature	Level[a]
Age	Youngest
Sex	Male
BMI	Nonobese
Symptoms	Snoring, sudden awakening, less sleepy (ESS low), ± insomnia
Comorbidity	Lowest
PSG	AHI High T90% Low

Risk:
Low CPAP adherence
Unknown CVD risk

Treatment:
Medium CPAP benefit (QOL)
? Alternative/adjunct treatments treatments (eg, oral appliance, drugs)

Subtype E: Severe, hypoxemic

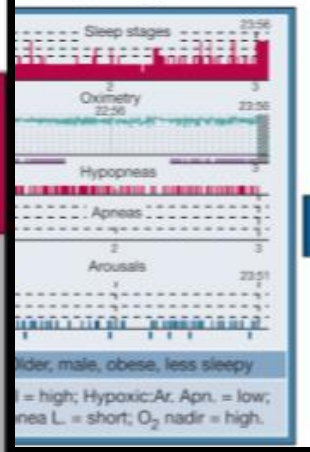


Yonger, male, severely obese, sleepy
AHI = high; Hypoxic:Ar. Apn. = high; Apnea L. = medium; O_2 nadir = low.

Risk:
Incident CVD

Treatment:
CPAP

Subtype F: Severe, non-hypoxemic



ider, male, obese, less sleepy
= high; Hypoxic:Ar. Apn. = low; nea L. = short; O_2 nadir = high.

Risk:
Low CPAP adherence
? Neurocognitive dysfunction

Treatment:
CPAP or OAT +
? Sedative hypnotics
? Acetazolamide/oxygen

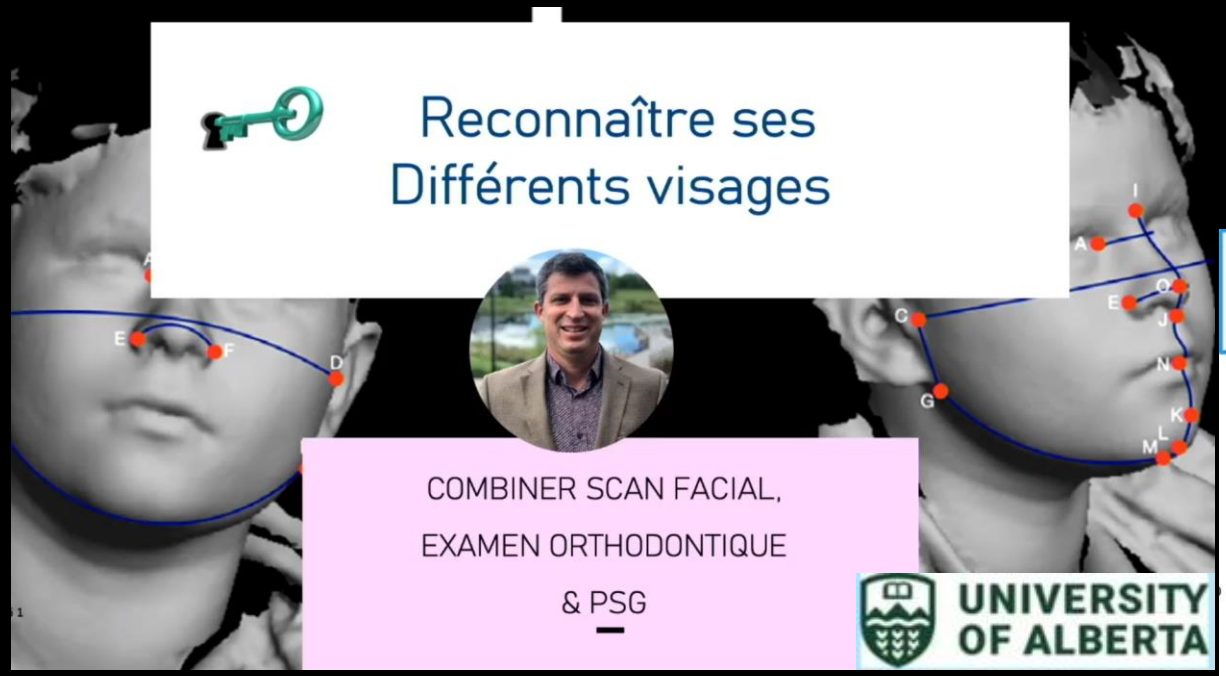
ARTICLE

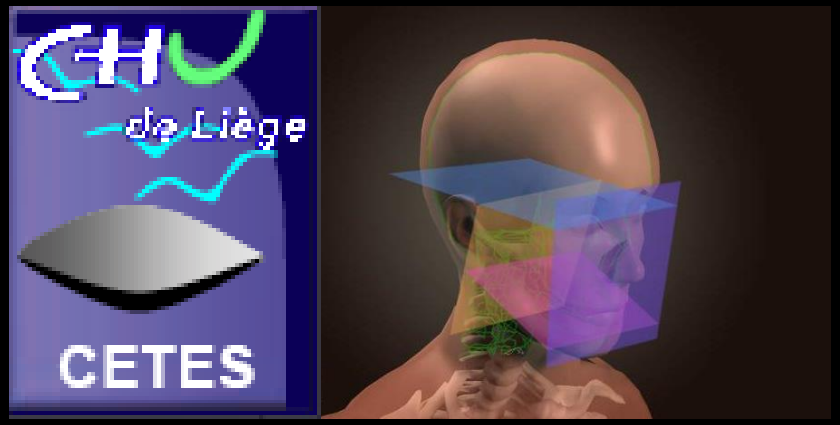
Phenotypic Subtypes of OSA: A Challenge and Opportunity for Precision Medicine

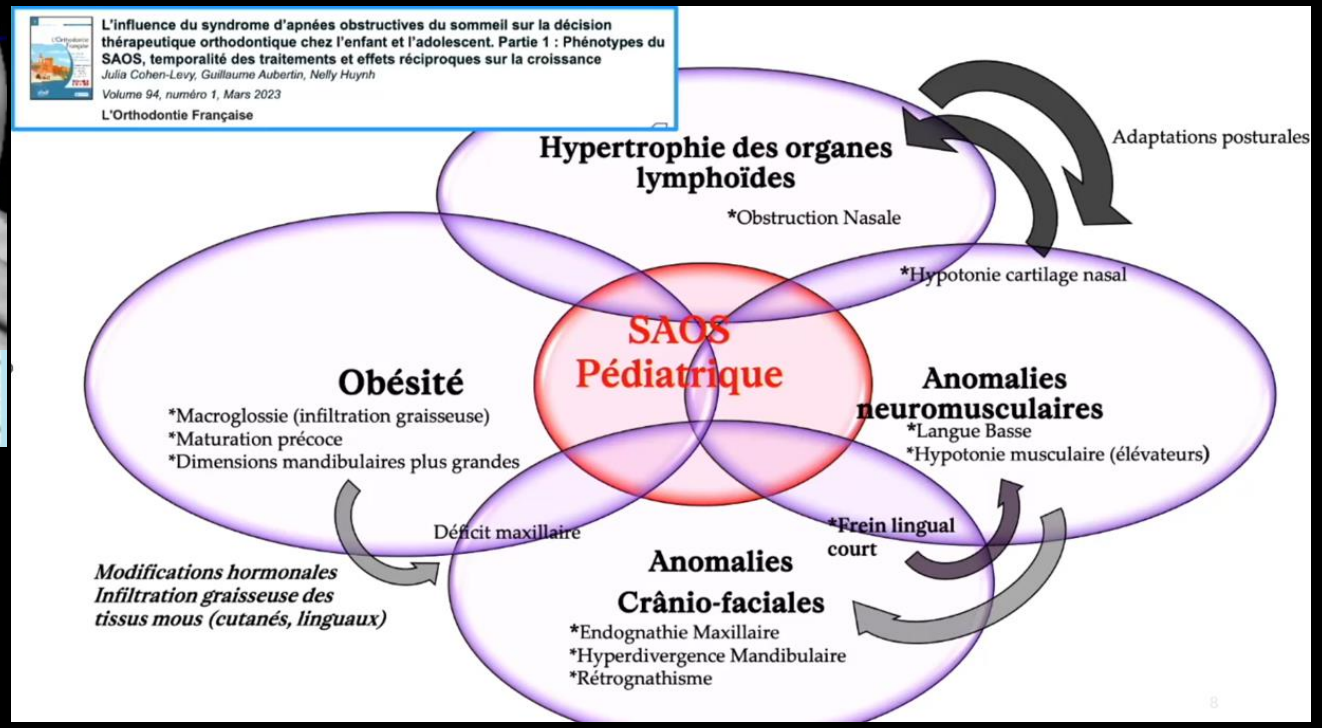
Zinchuk, Andrey ; Yaggi, Henry K

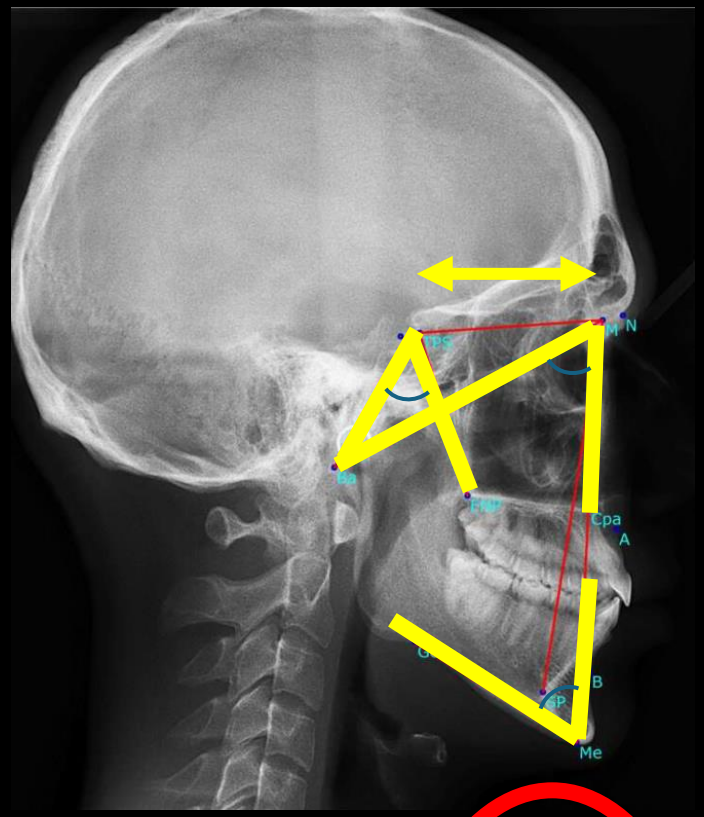
Chest, 2020-02, Vol.157 (2), p.403-420

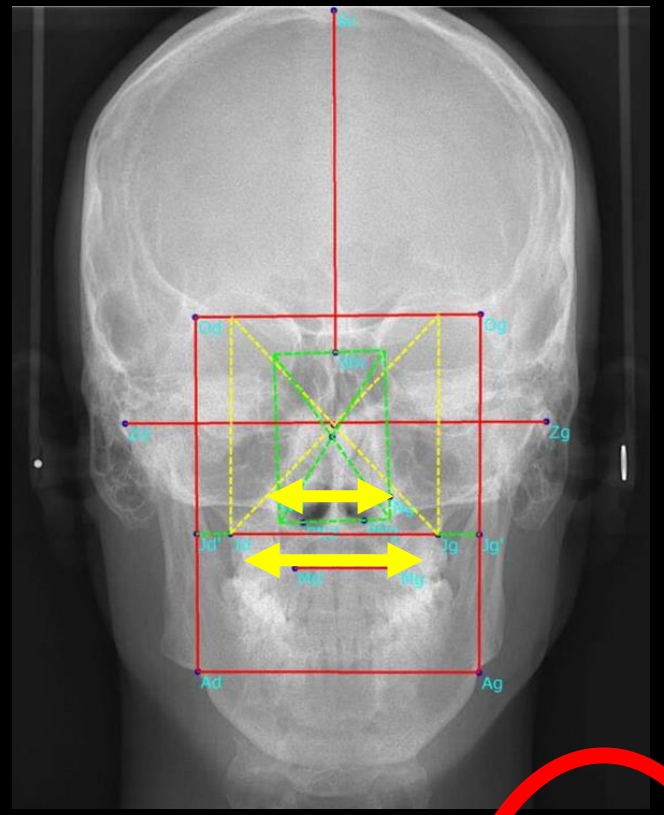
Typologie faciale

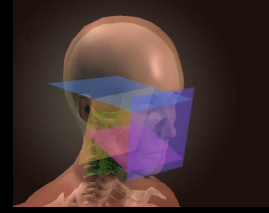












Mesures spécifiques			0			*Note*
Par rapport à la base du crâne:			*Base du crâne intégrée:*			
Ba-TPS-M	**126.4**	*134,3 ± 4,6°*				flexion
TPS-M	**54.3**	*59 ± 3,3 mm*	**Ba-M**	**90.7**	*101,4 ± 3,8 m*	brachyethmoidocranie
Maxillaire:						
TPS-M-Cpa	81.7	*81,8 ± 4,5°*	**Ba-M-Cpa**	**57.0**	*60,8 ± 3,6*	retromaxillie
Mandibule:						
TPS-M-Me	**82.5**	*76,2 ± 4,3°*	**Ba-M-Me**	57.7	*55,2 ± 3,7*	
			Cpa-M-Me	**-0.8**	*5,6 ± 3,4°*	
Angles de pincement:						
APA	67.2	*72,2 ± 5,3°*				
APP	**48.8**	*56,1 ± 4,4°*				+++

Largeur biorbitale	**80.8**	*9[illegible]6 +- 4,0 mm*
Largeur interzygomatique	**119.3**	*130[illegible] +- 4,5 mm*
Largeur des fosses nasales	**31.4**	*36,0 [illegible]- 2,1 mm*
Largeur maxillaire	**58.8**	*63,1 [illegible] 3,9 mm*
Largeur mandibulaire	**79.6**	*89,3 [illegible] 4,8 mm*
Décalage maxillo-mandibulaire droit	**9.6**	*15,4 [illegible] 2,3 mm*
Décalage maxillo-mandibulaire gauche	**11.7**	*15,1 [illegible] 2,4 mm*
Distance entre 16 et 26	**28.9**	*39,3 [illegible] 4,2 mm*
Angle des diagonales nasales	**66.5**	*77 +- 4,7 °*
Angle des diagonales maxillaires	**87.1**	*9[illegible]7 +- 5,1 °*

BILAN CÉPHALOMÉTRIQUE DANS LE SYNDROME DES APNÉES ET HYPOPNÉES OBSTRUCTIVES DU SOMMEIL.
Raskin S, Gilon Y, Limme M. Rev Stomatolo.Chir.maxillofac., 103(3):158-163, 2002.

CHU de Liège
CETES

Nico

Subtype D ? **youngest, male, non obese**

upper airway symptoms with snoring

no adherence to papcn

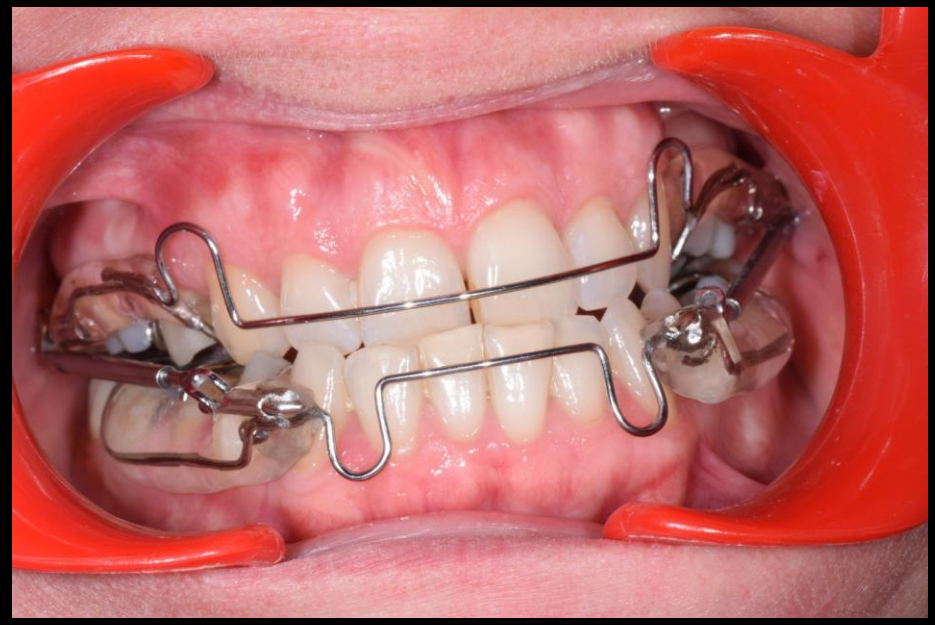
Nico,

- PSG 2019

  IAH 17.4H RDI 20, indices efficacité 41.3%, qualité 38.2%, continuité 87%

  ORL RAS

  CEPH +++ saos



- Pose OAM en 2019

  PV iah 0.7

Il n'existe pas d'effets secondaires liés au traitement.
Il a remarqué une amélioration de la qualité de son sommeil avec l'absence de l'asthénie et de la somnolence diurne excessive.

Nico en 2025

- PSG en 2019 iah 17.4

- Pose OAM
  PV 0.7

- Effets secondaires dentaires en 2025

➡ stop OAM et Papcn

Almeida, après 7.4 ans, n= 71

14.3% AUCUN changement

85,7% Modification de l'occlusion

41,4 % amélioration

44,3% aggravation

Am J Orthod Dentofacial Orthop. 2006 Feb;129(2):195-204. doi: 10.1016/j.ajodo.2005.10.001.

Long-term sequellae of oral appliance therapy in obstructive sleep apnea patients: Part 1. Cephalometric analysis

Fernanda Ribeiro de Almeida [1], Alan A Lowe, Jung Ok Sung, Satoru Tsuiki, Ryo Otsuka

Am J Orthod Dentofacial Orthop. 2006 Feb;129(2):205-13. doi: 10.1016/j.ajodo.2005.04.034.

Long-term sequellae of oral appliance therapy in obstructive sleep apnea patients: Part 2. Study-model analysis

Fernanda Ribeiro de Almeida [1], Alan A Lowe, Ryo Otsuka, Sandra Fastlicht, Maryam Farbood, Satoru Tsuiki

Dental and skeletal changes associated with long-term oral appliance use for obstructive sleep apnea: A systematic review and meta-analysis

Takafumi Araie [a], Kentaro Okuno [a, b, *], Hitomi Ono Minagi [a], Takayoshi Sakai [a]

[a] *Department of Oral-Facial Disorders, Osaka University Graduate School of Dentistry, Japan*
[b] *Department of Geriatric Dentistry, Osaka Dental University, Japan*

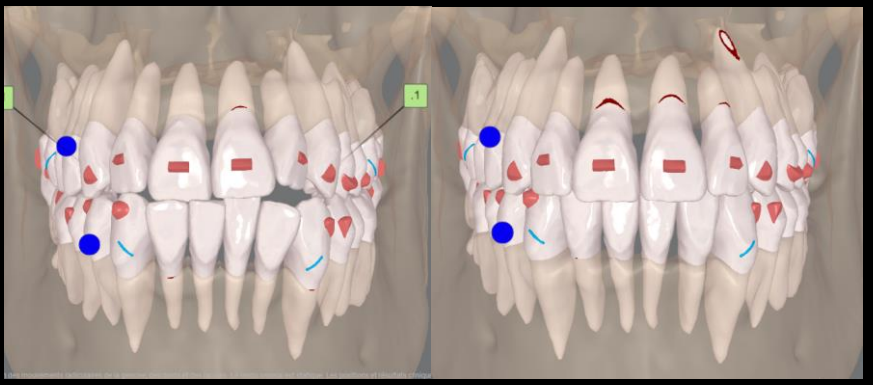
Sleep Medicine Reviews 41 (2018) 161–172

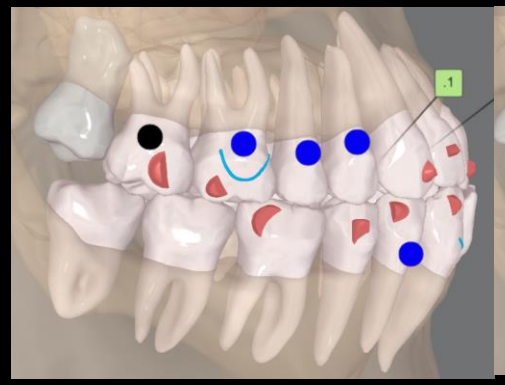
~~studies (RoBANS), and 12 studies were included in the meta-analysis~~. OA use was associated with a significant decrease of overjet (OJ) and overbite (OB), and it was suggested that both parameters decreased along with the duration of treatment. Meta-analysis also demonstrated a significant increase of L1-MP. However, there were no significant changes of skeletal modifications or mandibular rotation. Changes of incisor inclination were suggested to make a contribution to reduction of OJ and OB. In conclusion, long-term OA use was associated with dental changes. The results of this study provide information for clinicians about the long-term effects of OAs.

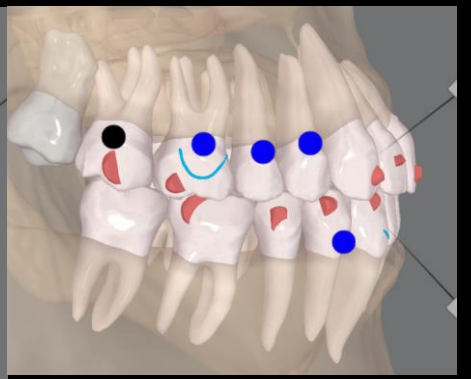
Nico =

- Correction occlusion
- Vivre sans strop de contraintes

invisalign







Nico,

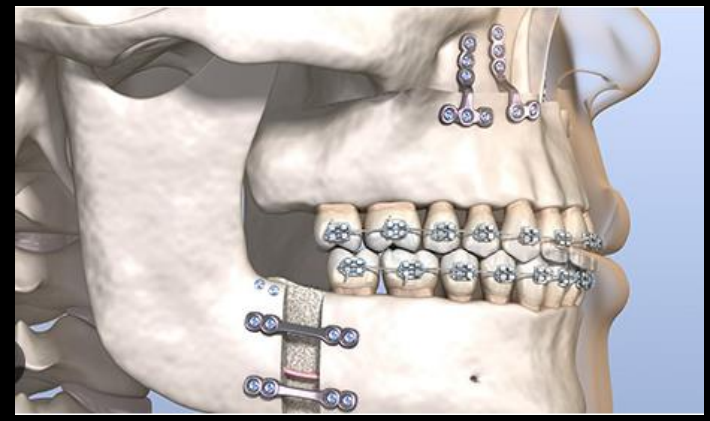
☝ Occlusal problem

What to do?

Meta-Analysis › J Oral Rehabil. 2025 Apr;52(4):554-565. doi: 10.1111/joor.13936. Epub 2025 Jan 24.

Efficacy of Orthognathic Surgery in OSAS Patients: A Systematic Review and Meta-Analysis

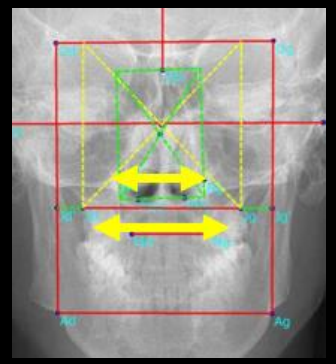
Syed Akbar Ali [1], Maria Maddalena Marrapodi [2], Ganiga Channaiah Shivakumar [3], Sahana Shivakumar [4], Jyothikiran Hurkadle [5], Marco Cicciù [6], Giuseppe Minervini [7 8]

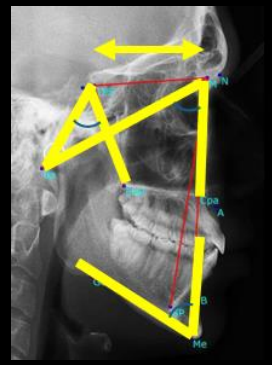


Nico,

☝ Occlusal problem

What to do?

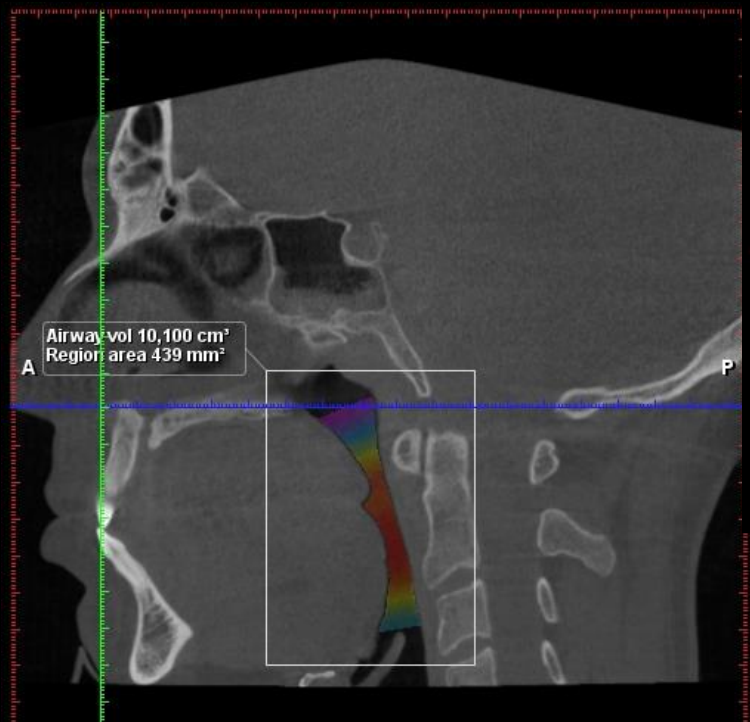




Meta-Analysis › J Oral Rehabil. 2025 Apr;52(4):554-565. doi: 10.1111/joor.13936. Epub 2025 Jan 24.

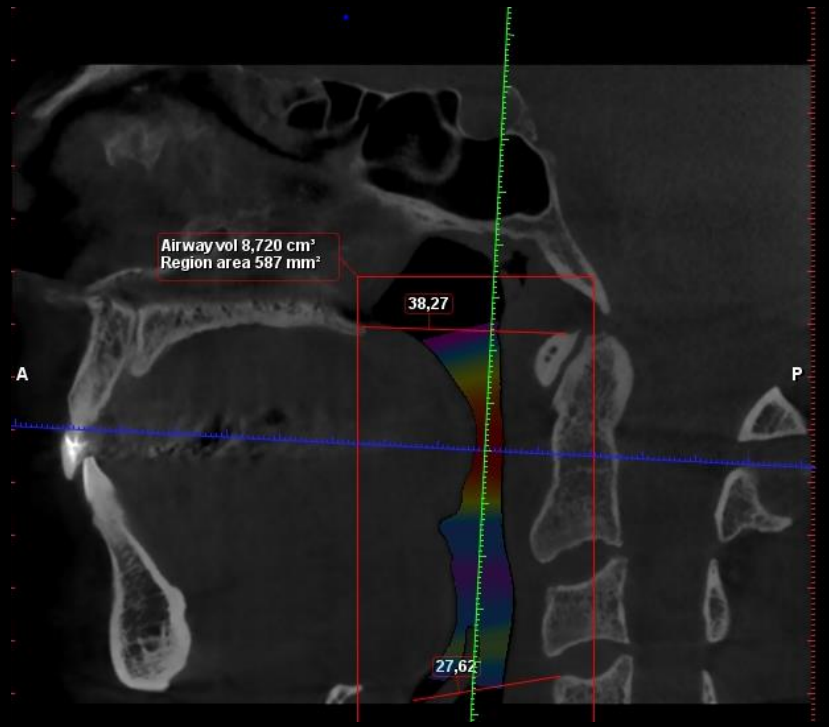
Efficacy of Orthognathic Surgery in OSAS Patients: A Systematic Review and Meta-Analysis

Syed Akbar Ali [1], Maria Maddalena Marrapodi [2], Ganiga Channaiah Shivakumar [3], Sahana Shivakumar [4], Jyothikiran Hurkadle [5], Marco Cicciù [6], Giuseppe Minervini [7 8]

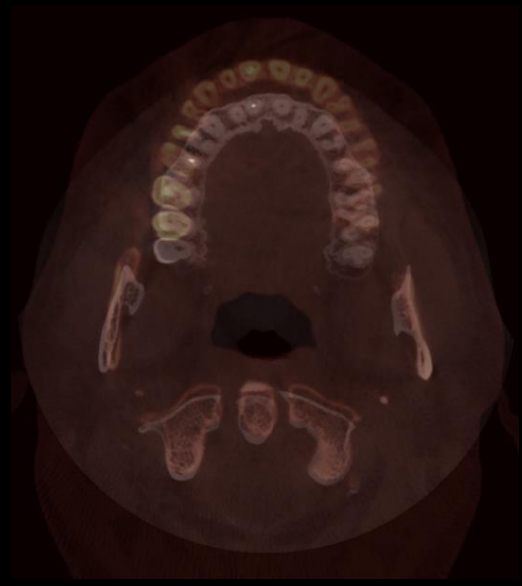


Which is the good volume of the airway? Nico = 10 000 cm3 ?

Jérome, *15/11/77*



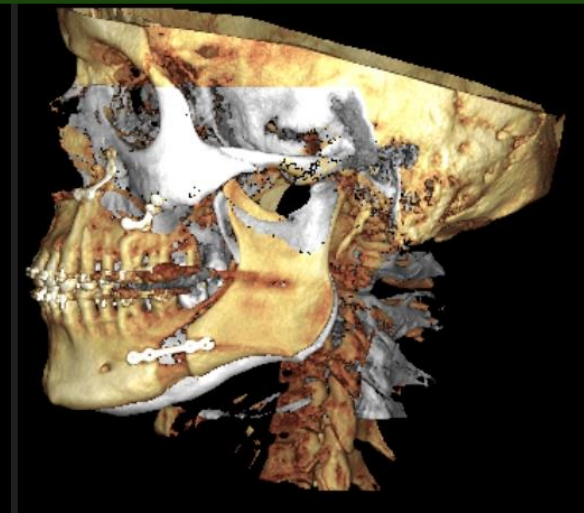
2024: Max-Mand Distractions



2025: Max-mand Advancement

Before : UA = 8720 cm3
After: UA = 26014 cm3

IAH: 51,8 → 28,4 → 7,1



CEPH 3D

Clinical interest of 3D cephalometry

- Accurate aetiological diagnosis (location and type of obstruction).
- Personalised surgical planning (MMA, genioplasty, hyoidopexy).
- Objective assessment of postoperative gain (increased airway volume).
- Integration into predictive models of MMA success via machine learning (morphometric AI).

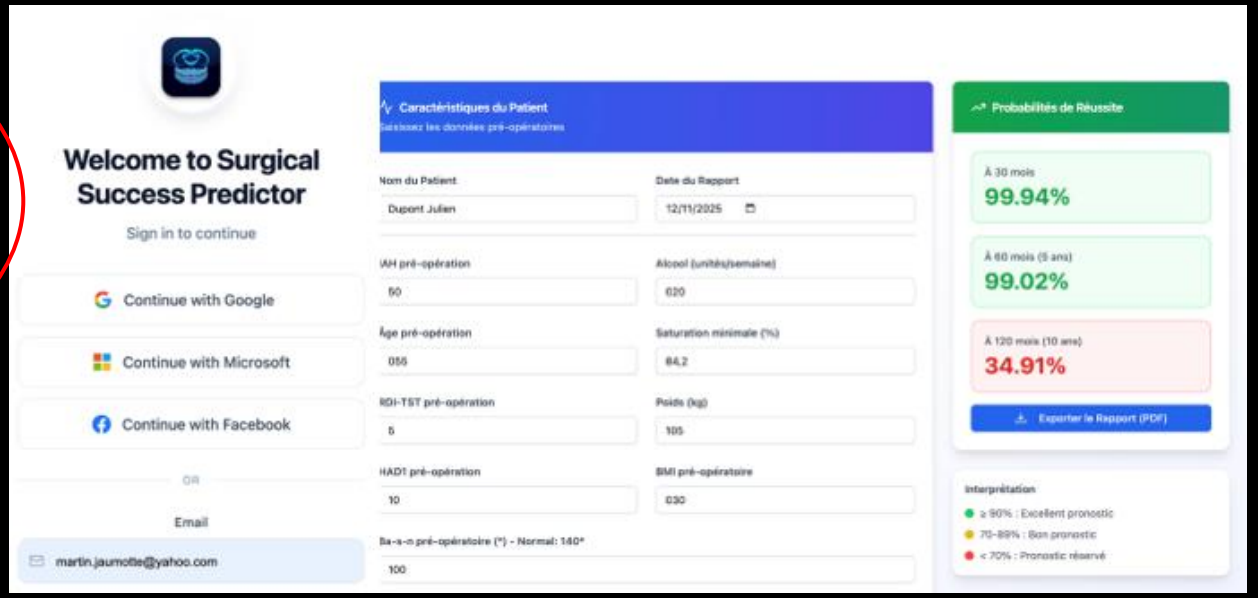
Current limitations of 3D cephalometry:

- Lack of dynamic data (examination performed while awake, in a seated position).
- Dependence on software segmentation (variation depending on density threshold and operator).
- Lack of standardisation between software packages (Mimics, Dolphin, Invivo, Anatomage).
- No direct correlation between static volume and dynamic collapse — hence the growing interest in dynamic MRI and CFD (Computational Fluid Dynamics).

CEPH 3D

Clinical interest of 3D cephalometry

- Accurate aetiological diagnosis (location and type of obstruction).
- Personalised surgical planning (MMA, genioplasty, hyoidopexy).
- Objective assessment of postoperative gain (increased airway volume).
- Integration into predictive models of MMA success via machine learning (morphometric AI).



Nico, 33 ans ?

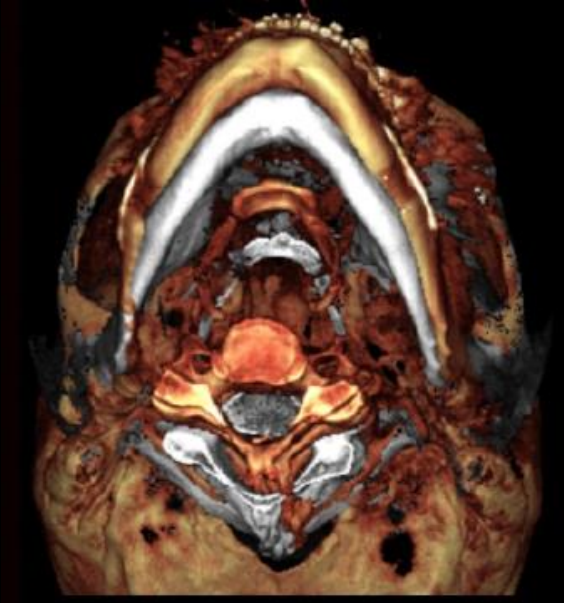
- PSG en 2019
  - → IAH, 17.4
- Pose OAM
  - PV iah 0.7
- Effets secondaires dentaires en 2025
  - → stop OAM, refus Papcn
- Re-bilan 3D
  - → Chirurgie Maxillo-Faciale ?

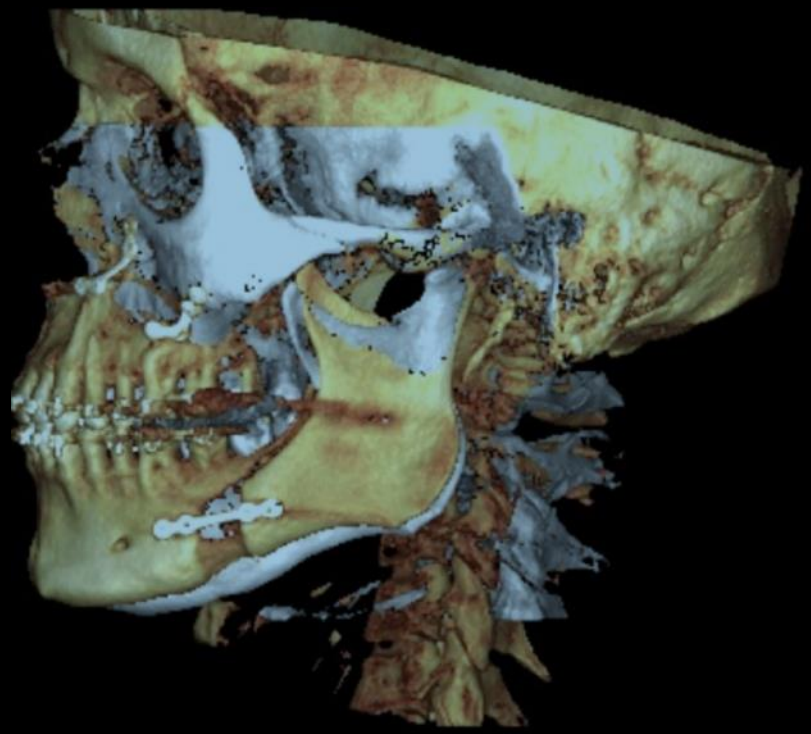
Bénéfices de la chirurgie MF

Traitement symptomatique

➡ GUERR I

Long Terme

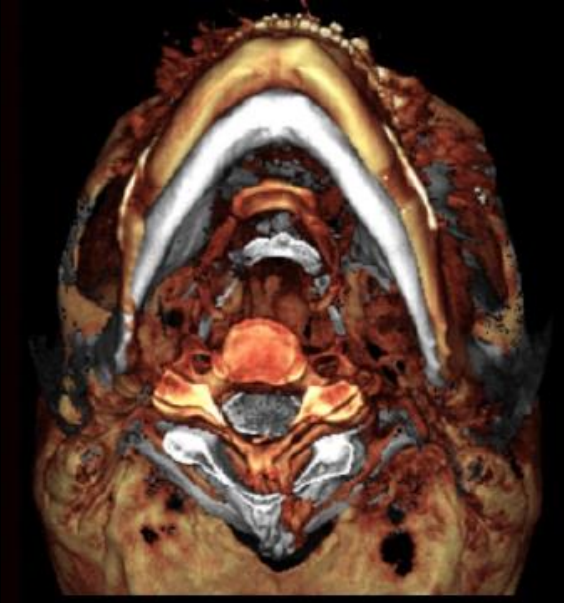


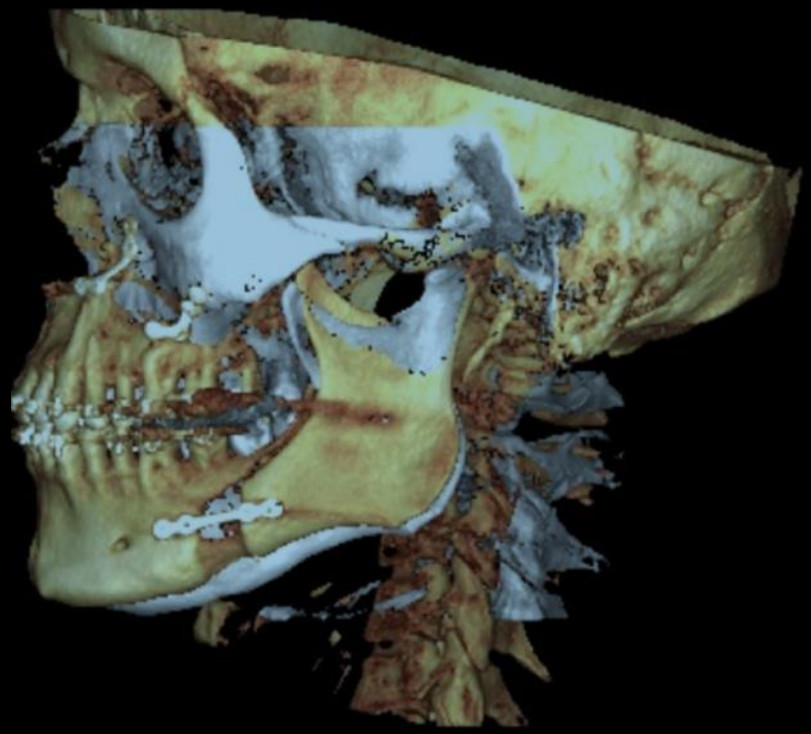


Inconvénients de la chirurgie MF

- Critères à définir
- Parcours LOURD
  - Long
  - Coûteux

  = Parcours de soins stricts





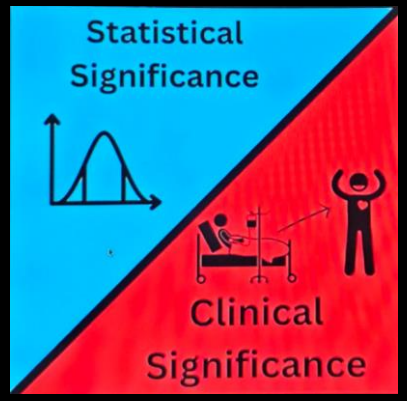
?

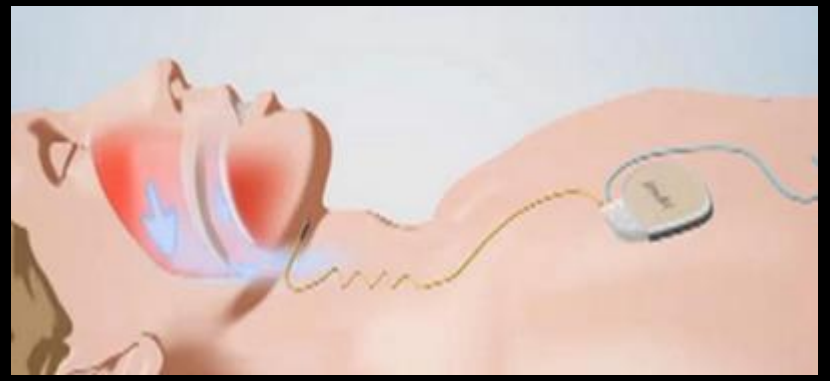
Nico

Seul face à son destin,

Avec notre accompagnement pluridisciplinaire

Chirurgie MF ou stimulation nerf XII?





L’avenir,

- Mieux définir SAOS, RAVAS …
- Etudes sur la dimension VAS nécessaire
- Mieux connaître les phénotypes morphologiques
- Mieux individualiser le diagnostic et le traitement ….

L’avenir,

- Mieux définir SAOS, RAVAS …
- Etudes sur la dimension VAS nécessaire
- Mieux connaître les phénotypes morphologiques
- Mieux individualiser le diagnostic et le traitement ….

Je vous remercie de votre attention