Trouble du Comportement Alimentaire du Petit Enfant (TCAPE) entre 1 et 6 ans

Docteur Il me mange rien !!!

Marc Bellaiche

Hôpital Robert Debré

CHIC : maison des TCAPE

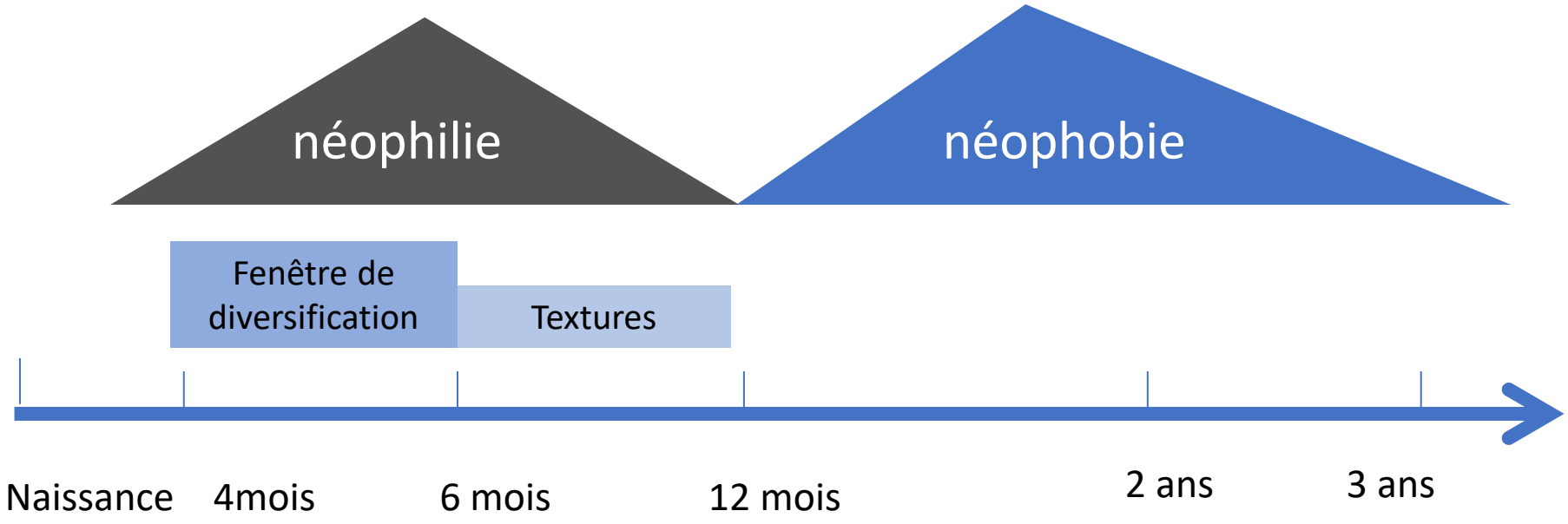
Question de timing?

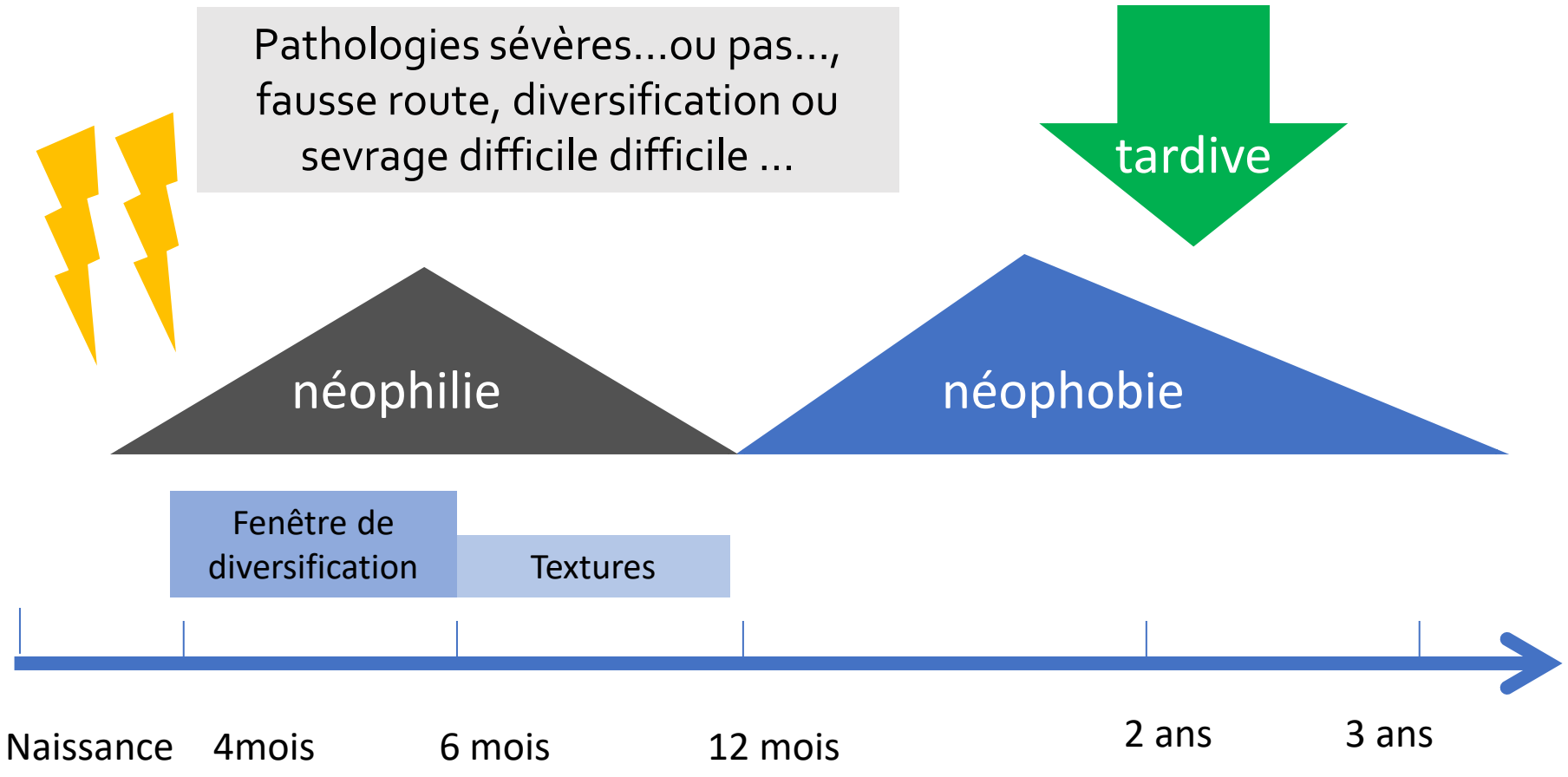
Les difficultés alimentaires surviennent le plus souvent aux moments d'acquisition de nouvelles compétences

- Diversification alimentaire
- Introduction des morceaux
- Sevrage de l'allaitement maternel ou du biberon

Carruth B et al J Am Diet Assoc. 2004
Kovacic K et al. J Pediatr 2021
Taylor CM et al Nutrients 2019

Calendrier du néophobe…




Pathologies sévères…ou pas…,
fausse route, diversification ou
sevrage difficile difficile …
tardive
néophilie
néophobie
Fenêtre de
diversification
Textures
Naissance
4mois
6 mois
12 mois
2 ans
3 ans

Prévalence des difficultés alimentaires

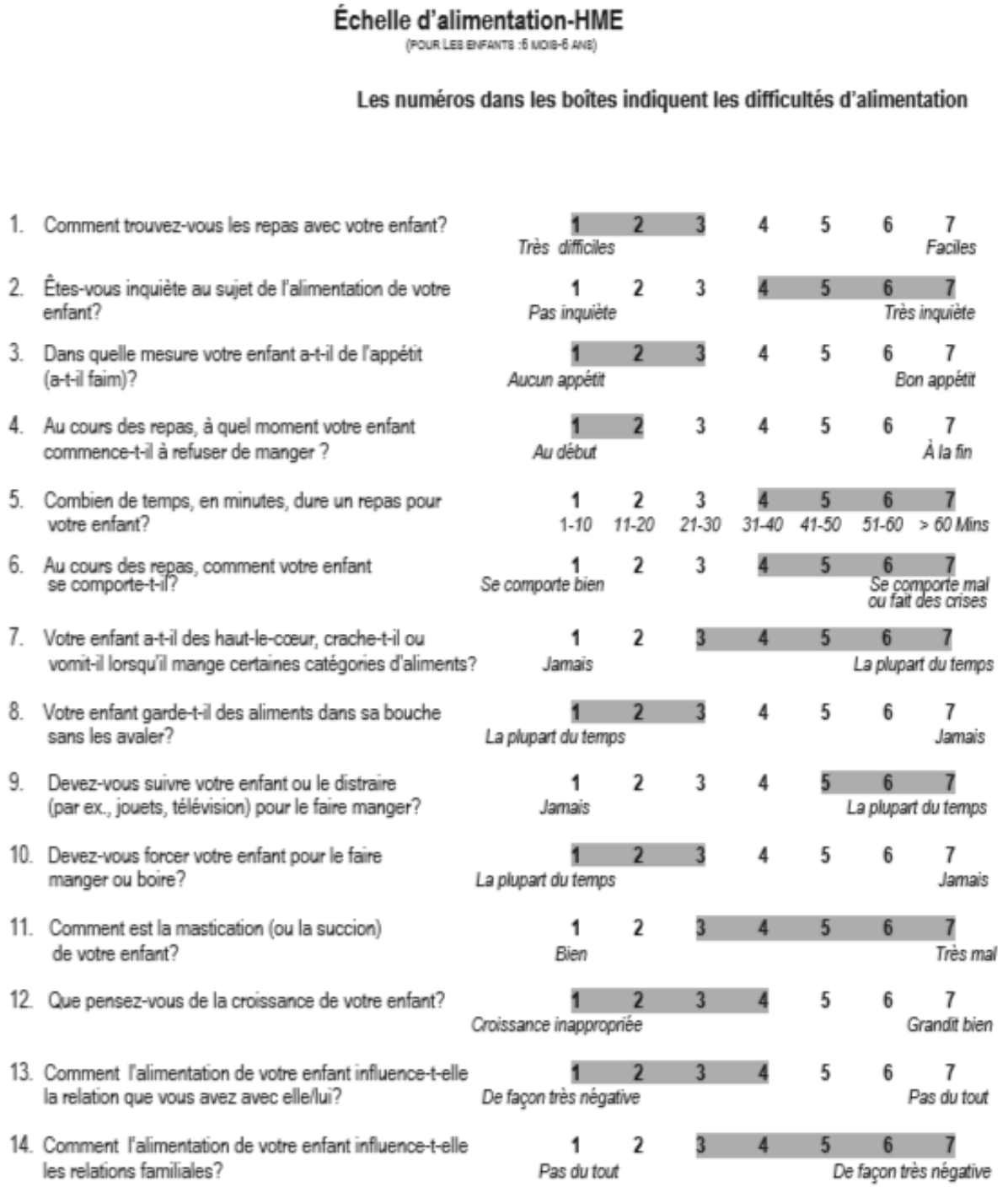
- A partir de questionnaires parentaux
  - 28% à 70% à 1 an
  - 6% à 60% à 3-7 ans

- Environ 2-3% des enfants <6 ans après évaluation médicale

Carruth B et al J Am Diet Assoc. 2004
Kovacic K et al. J Pediatr 2021
Taylor CM et al Nutrients 2019

Montreal Children's Hospital Feeding Scale (MCH-FS)

Ramsay et al, Paediatr Child Health. 2011



Échelle d'alimentation-HME

(POUR LES ENFANTS :6 MOIS-6 ANS)

Les numéros dans les boîtes indiquent les difficultés d'alimentation

		1	2	3	4	5	6	7
1.	Comment trouvez-vous les repas avec votre enfant?	*Très difficiles*						*Faciles*
2.	Êtes-vous inquiète au sujet de l'alimentation de votre enfant?	*Pas inquiète*						*Très inquiète*
3.	Dans quelle mesure votre enfant a-t-il de l'appétit (a-t-il faim)?	*Aucun appétit*						*Bon appétit*
4.	Au cours des repas, à quel moment votre enfant commence-t-il à refuser de manger ?	*Au début*						*À la fin*
5.	Combien de temps, en minutes, dure un repas pour votre enfant?	*1-10*	*11-20*	*21-30*	*31-40*	*41-50*	*51-60*	*> 60 Mins*
6.	Au cours des repas, comment votre enfant se comporte-t-il?	*Se comporte bien*						*Se comporte mal ou fait des crises*
7.	Votre enfant a-t-il des haut-le-cœur, crache-t-il ou vomit-il lorsqu'il mange certaines catégories d'aliments?	*Jamais*						*La plupart du temps*
8.	Votre enfant garde-t-il des aliments dans sa bouche sans les avaler?	*La plupart du temps*						*Jamais*
9.	Devez-vous suivre votre enfant ou le distraire (par ex., jouets, télévision) pour le faire manger?	*Jamais*						*La plupart du temps*
10.	Devez-vous forcer votre enfant pour le faire manger ou boire?	*La plupart du temps*						*Jamais*
11.	Comment est la mastication (ou la succion) de votre enfant?	*Bien*						*Très mal*
12.	Que pensez-vous de la croissance de votre enfant?	*Croissance inappropriée*						*Grandit bien*
13.	Comment l'alimentation de votre enfant influence-t-elle la relation que vous avez avec elle/lui?	*De façon très négative*						*Pas du tout*
14.	Comment l'alimentation de votre enfant influence-t-elle les relations familiales?	*Pas du tout*						*De façon très négative*

Il ne mange pas…

Comme ses parents aimeraient qu’il mange

~~Trouble de la déglutition ?~~

~~Anorexie organique ?~~

~~Anorexie anatomique ?~~

~~Anorexie génétique?~~

~~Trouble psychiatrique ?~~

Il ne mange pas …

~~Dysphagie ?~~

~~Odynophagie ?~~

~~Trouble de l'oralité alimentaire ?~~

Trouble de la déglutition ???

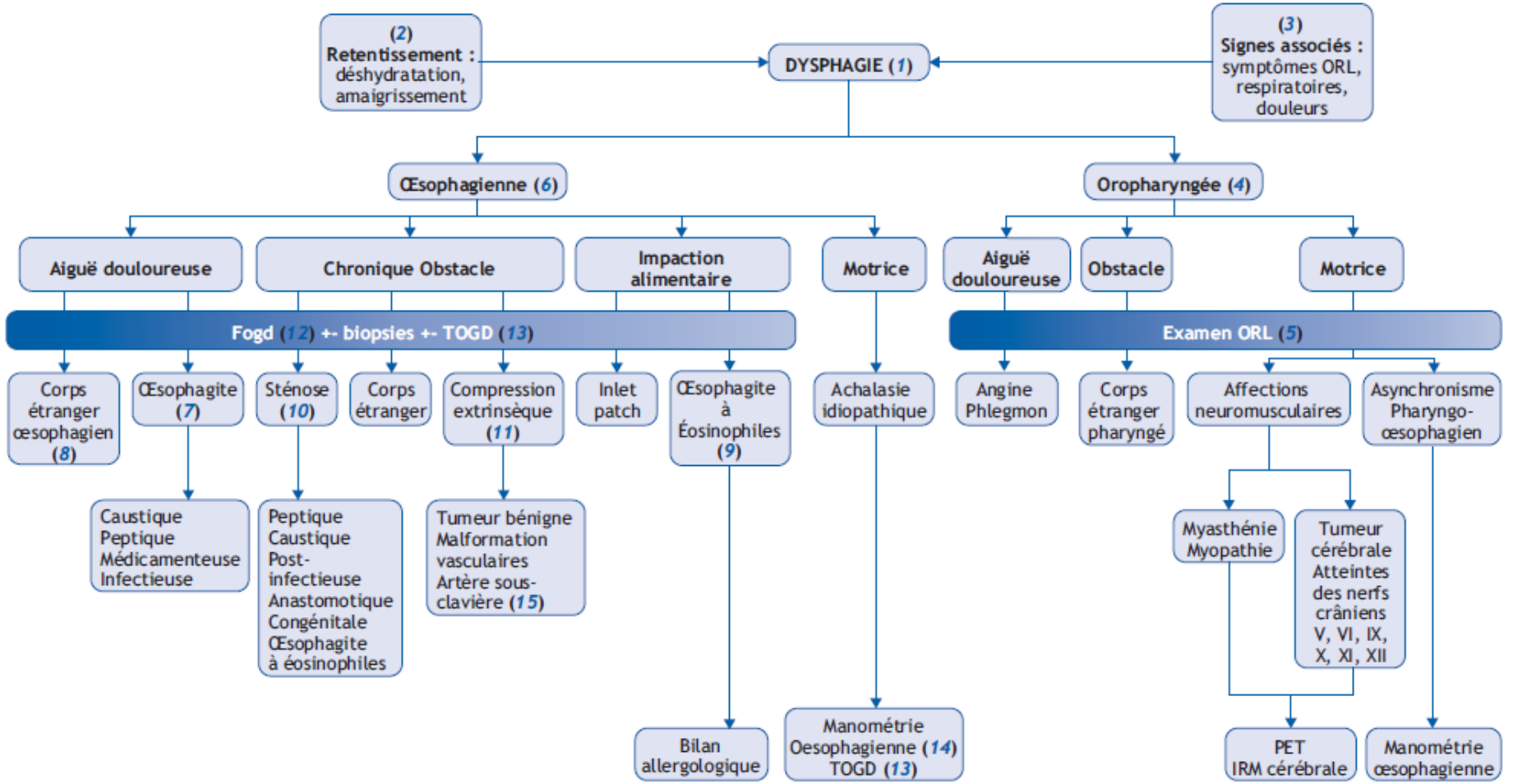
- Bouche ouverte, difficultés pour la fermer
- Bavage important
- Fuites de lait commissures
- Mauvaise coordination succion déglutition
- Pauses fréquentes et irrégulières à la succion …

~~Trouble de la déglutition ?~~

~~Dysphagie ?~~

~~Odynophagie ?~~

Il ne mange pas …



Abréviations

FOGD : Fibroscopie œsogastrique
PET : Potentiels évoqués du tronc
TDM : Tomodensitométrie
TOGD : Transit oeso-gastro-duodénal

~~Trouble de la déglutition ?~~

~~Dysphagie ?~~ ~~Odynophagie ?~~

~~Anorexie organique ?~~

Il ne mange pas …

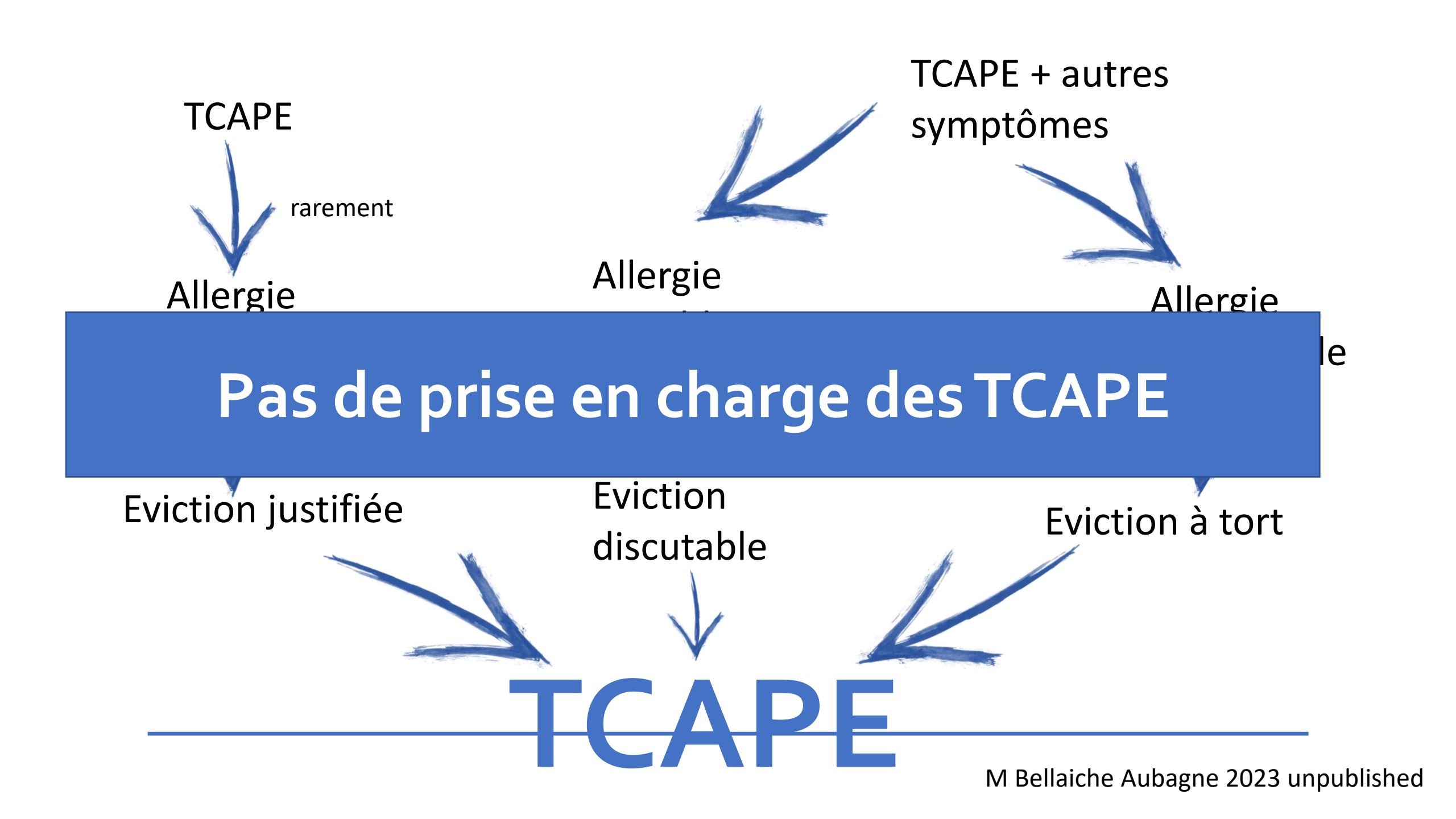
Pathologies organiques associées à des TCAP

- Pathologies digestives
  - APLV, oesophagite, maladie coeliaque etc…
- Pathologies extra-digestives
  - Tubulopathie, insuffisance rénale
  - Pathologie chronique (cardiopathie, hépatopathie…)
  - Maladies métaboliques (fructosémie, galactosémie…)
  - Tumeurs diencéphaliques…
- Pathologies neurologique et neuromusculaire,
- Anomales congénitales de la succion/déglutition

DIFFERENCE SIGNIFICATIVE ENTRE LES TCAPE ET LES TEMOINS POUR :

	TCAPE (n=57)	Témoins (n=46)	p
CESARIENNE	21	5	p < 0,002
PREMATURITE	14	0	p < 0,001
HYPOTROPHIE NEONATALE	12	3	p < 0,05
PATHOLOGIE NEONATALE	21	4	p < 0,001
TCA CHEZ PARENTS ET/OU FRATRIE	20	4	p < 0,001
CHANGEMENTS DE LAIT	42	19	p < 0,001
HYDROLYSATS PROTEINES LV	30	5	p < 0,001
INHIBITEURS POMPE A PROTONS	35	7	p < 0,001

S Dudebout et al arch Ped 2016; 23 : 570-6



M Bellaiche Aubagne 2023 unpublished

Effet du lansoprazole sur les symptômes attribués au RGO chez le nourrisson

	Lansoprazole double-blind (≤4 weeks, n = 81)*	Placebo double-blind (≤4 weeks, n = 81)*	*P* value†
Primary efficacy: Responder rate, n (%)	44 (54%)	44 (54%)	NS
Discontinued due to nonefficacy, n (%)	28 (35%)	29 (36%)	NS
Individual symptoms‡			
Cry, % of feeds/week (Appendix 2)	−20	−20	NS
Regurgitate, % of feeds/week	−14	−11	NS
Stop feed soon, % of feeds/week	−7	−8	NS
Feed refusal, % of days/week	−14	−10	NS
Arching back, % of days/week	−20	−18	NS
Coughing, % of days/week	0	−9	NS
Wheezing, % of days/week	−5	−6	NS
Hoarseness	2	−5	NS
Global severity assessment§			
Parent: Improved at week 4	45 (56%)	41 (51%)	NS
Physician: Improved at week 4	44 (55%)¶	40 (49%)	NS
Compliance			
≥90% for drug, % of subjects	93%	95%	Not tested
≥90% for daily diary, % of subjects	96%	100%	Not tested

Orenstein et al J Pediatr 2009;154:514-20

~~Trouble de la déglutition ?~~

~~Dysphagie ?~~ ~~Odynophagie ?~~

~~Anorexie organique ?~~

Il ne mange pas …

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- Pathologies neurologique et neuromusculaire,
- Anomales congénitales de la succion/déglutition

TABLE 6. DEFINITION OF OBSTRUCTIVE SLEEP APNEA ON DIAGNOSTIC TESTING AND ESTIMATED POPULATION PREVALENCE

Criteria for OSA Diagnosis	Location	No.	Age	Prevalence (%)
AHI ⩾ 10	United States (42)	126	2–18 yr	1.6
RDI ⩾ 10	Spain (22)	100	12–16 yr	2.0
AHI ⩾ 5 or apnea index ⩾ 1	Greece (50)	3,680	1–18 yr	4.3
AHI ⩾ 5	United States (19)	5,728	5–7 yr	5.7
AHI ⩾ 5	United States (20)	850	8–11 yr	2.5
AHI > 3	Italy (64)	895	3–11 yr	1.0
AHI > 3	Turkey (65)	1,198	3–11 yr	0.9
AHI ⩾ 1	Thailand (66)	755	9–10 yr	1.3
AHI ⩾ 1	Thailand (13)	1,008	6–13 yr	0.7
AHI > 1	Singapore (57)	200	6.4 ± 4 yr	0.1
ODI ⩾ 5	Italy (21)	604	3–6 yr	13.0
ODI > 3	Iceland (41)	454	6 mo–6 yr	2.9
Upper 5% for nocturnal movement, number of oxygen desaturations, and pulse rate, with subsequent examination of videos to determine etiology	United Kingdom (47)	782	4–5 yr	0.9

Definition of abbreviations: AHI = apnea–hypopnea index; RDI = respiratory disturbance index; ODI = oxygen desaturation index.
Study reference numbers are shown in parentheses.

Prévalence entre 2 et 4 % dans la population pédiatrique

Lumeng, Proc Am Thor Soc 2008

~~Trouble de la déglutition ?~~

~~Anorexie organique ?~~

~~Dysphagie ?~~ ~~Odynophagie ?~~

Il ne mange pas …

~~Anorexie anatomique ?~~

~~Trouble de la déglutition ?~~

~~Anorexie organique ?~~

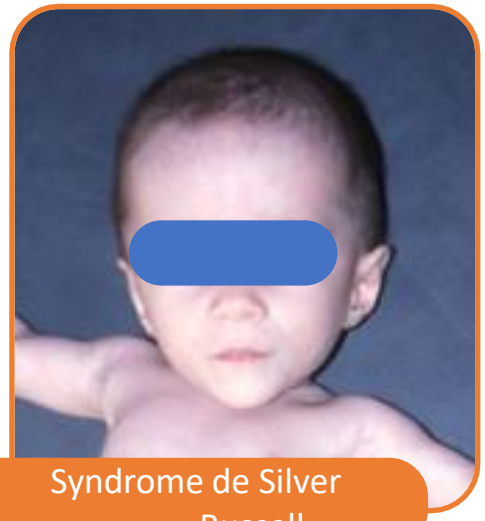
~~Dysphagie ?~~ ~~Odynophagie ?~~

~~Anorexie anatomique ?~~

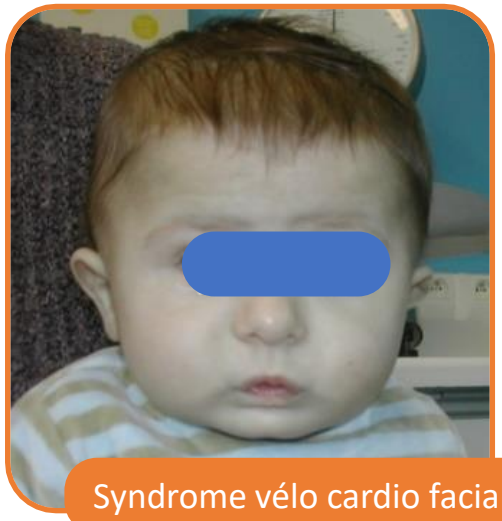
Il ne mange pas …

~~Anorexie génétique?~~

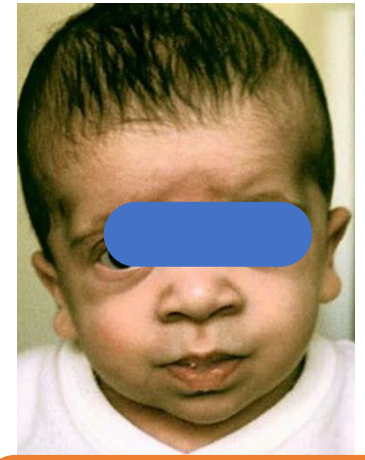
Je recherche un syndrome génétique sous-jacent ?



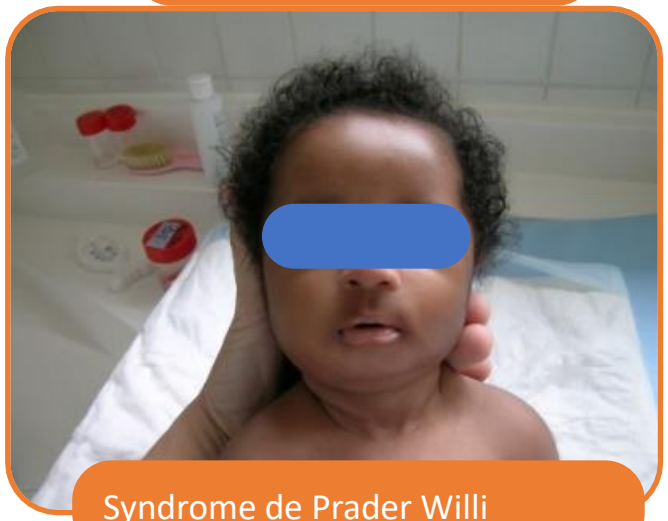
Syndrome de Silver Russell



Syndrome vélo cardio facial

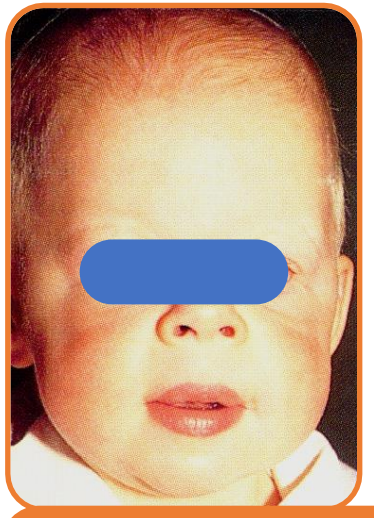


Syndrome de Noonan



Syndrome de Prader Willi

Séquence de Pierre Robin



Syndrome de Williams

~~Trouble de la déglutition ?~~

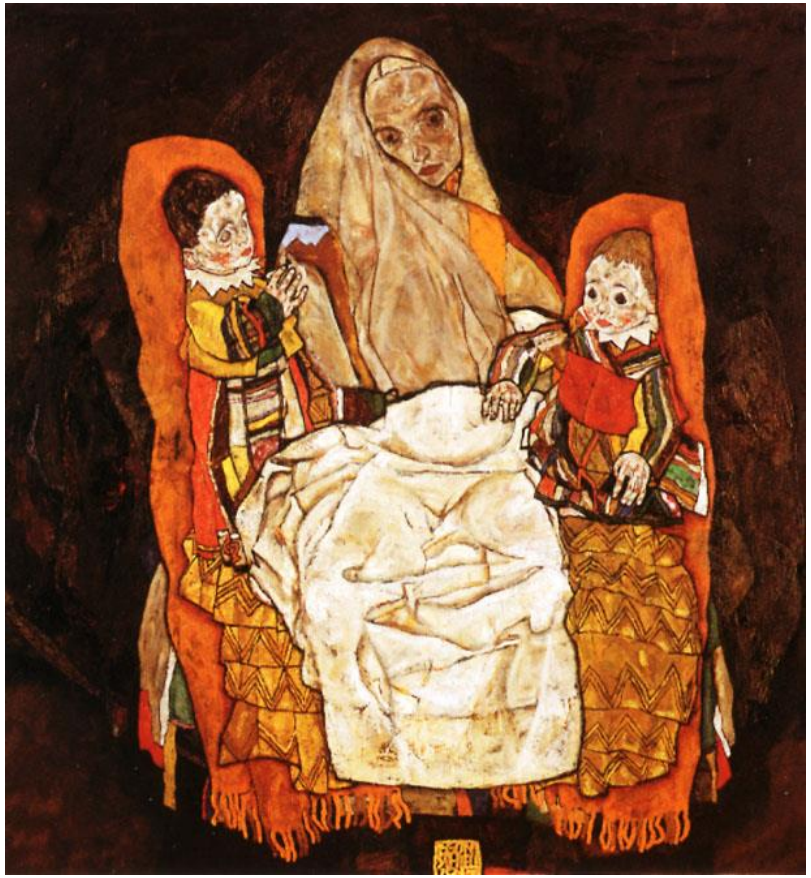
~~Anorexie organique ?~~

~~Anorexie anatomique ?~~

~~Anorexie génétique?~~

~~Trouble psychiatrique ?~~

Il ne mange pas …



Mère anorexique
mère dépressive…
enfant anorectique et dépressif ?

Les différentes formes d'anorexie psychogène du nourrisson

1) Les anorexies d'opposition
2) Les anorexies associée à une pathologie organique
3) Les anorexies « psychiatriques »
    1) Formes précoces de TSA
    2) Dépression
    3) Anorexie mentale infantile
4) L'anorexie par troubles de l'attachement

Goeb et al, Arch Ped, 2005
Poinso et al, Arch Ped, 2006
Le Heuzey, Arch Ped, 2011

~~Trouble de la déglutition ?~~

~~Anorexie organique ?~~

~~Anorexie anatomique ?~~

~~Anorexie génétique?~~

~~Trouble psychiatrique ?~~ Il ne mange pas …

~~Trouble de l'oralité alimentaire ?~~

La flaveur des aliments, votre langue au chat ?

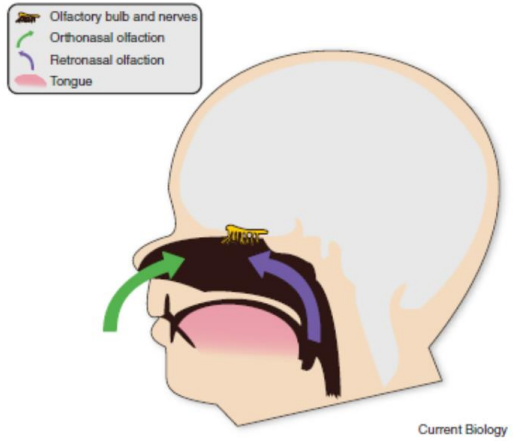
> Le goût, la gustation (langue) / sapidité (sucré, salé, acide, amer, umami)

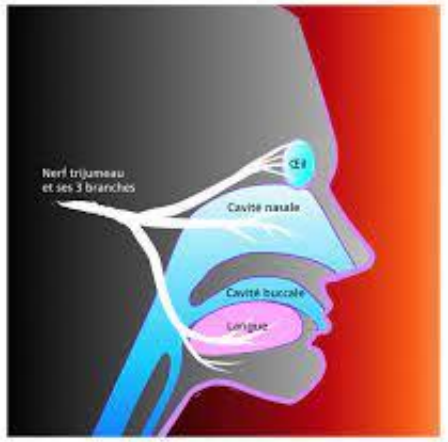
> La sensation trigéminale / sensations mécano-chémo-thermiques (yeux, nez, bouche)
(capsaïcine du piment, pipérine du poivre, bulles de CO^2 des eaux gazeuses,
fortes concentrations de citron, oignons, cuisson…)

L'olfaction (nez), ortho olfaction et rétro olfaction

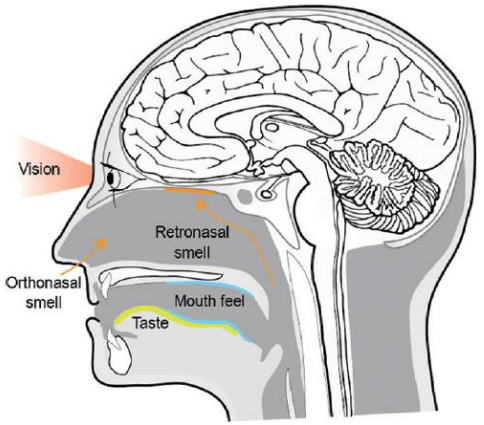
Au-delà du goût

- **Perception de Flaveur**
  - Goût (saveur)
  - Système sensoriel olfactif
    - Ortho et rétronasal (arômes)
  - Stimulations trigéminales
    - Texture, température, cuisson, piquant, frais
    - Stimulation sur l'amertume, l'acidité





- **Un processus sensoriel périphérique (Tous les sens !)**
  - Vision
    - Forme
    - Couleur
  - Toucher
  - Audition ?



Vermeir *Foods* 2020
Spence et al. *Multisens Res* 2019
Pereira et al. *J Oral Rehab* 2016

Modifiez le style du titre

- Mo masque
  -

~~Trouble de la déglutition ?~~

~~Anorexie génétique?~~

~~Anorexie organique ?~~

~~Anorexie anatomique ?~~

~~Néophobie alimentaire?~~

~~Trouble psychiatrique ?~~

Il ne mange pas …

~~Trouble de l'oralité alimentaire ?~~

OPEN

Pediatric Feeding Disorder—Consensus Definition and Conceptual Framework

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TAP

ABSTRACT

Pediatric feeding disorders (PFDs) lack a universally accepted definition. Feeding disorders require comprehensive assessment and treatment of 4 closely related, complementary domains (medical, psychosocial, and feeding skill-based systems and associated nutritional complications). Previous diagnostic paradigms have, however, typically defined feeding disorders using the lens of a single professional discipline and fail to characterize associated functional limitations that are critical to plan appropriate interventions and improve quality of life. Using the framework of the World Health Organization *International Classification of Functioning, Disability, and Health*, a unifying diagnostic term is proposed: ''Pediatric Feeding Disorder'' (PFD), defined as impaired oral intake that is not age-appropriate, and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction. By incorporating associated functional limitations, the proposed diagnostic criteria for PFD should enable practitioners and researchers to better characterize the needs of heterogeneous patient populations, facilitate inclusion of all relevant disciplines in treatment planning, and promote the use of common, precise, terminology necessary to advance clinical practice, research, and health-care policy.

Key Words: dysphagia, failure to thrive, feeding disorder

(*JPGN* 2019;68: 124–129)

What Is Known

- Pediatric feeding disorders lack a universally accepted definition.
- Previous diagnostic paradigms have defined feeding disorder from the perspective of a single medical discipline.

What Is New

- A unifying diagnostic term, ''Pediatric Feeding Disorder'', using the framework of the World Health Organization International Classification of Functioning, Disability, and Health is proposed.
- This term unifies the medical, nutritional, feeding skill, and/or psychosocial concerns associated with feeding disorders.
- The proposed diagnostic criteria should promote the use of common, precise, terminology necessary to advance clinical practice, research, and health care policy.

TCA pédiatrique selon DSM 5

A(voidance) R(estritive) F(ood) I (ntake)D(isorders) : profil personnalité

- Petit mangeur, enfant « difficile »
- Peur de manger
- Sélectivité alimentaire

Mérycisme

PICA

A Practical Approach to Classifying and Managing Feeding Difficulties.

Kerzner B, Milano K, MacLean WC Jr, Berall G, Stuart S, Chatoor I. Pediatrics. 2015 ;135:344-353.

Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en

Review article

Nutritional risks of ARFID (avoidant restrictive food intake disorders) and related behavior

F. Feillet [a,*], A. Bocquet [b], A. Briend [c], J.-P. Chouraqui [d], D. Darmaun [e], M.-L. Frelut [f], J.-P. Girardet [g], D. Guimber [h], R. Hankard [i], A. Lapillonne [j], N. Peretti [k], J.-C. Rozé [e], U. Simeoni [d], D. Turck [h], C. Dupont [j], Comité de nutrition de la Société française de pédiatrie (CNSFP)[l]

Disorders [2]. It is defined as an eating or feeding disturbance (e.g., apparent lack of interest in eating or food avoidance based on the sensory characteristics of food; concern about aversive consequences of eating) manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following criteria:

- significant weight loss (or failure to achieve expected weight gain or faltering growth in children);
- significant nutritional deficiency;
- dependence on oral nutritional supplements or enteral feeding or pronounced interference with psychosocial functioning.

To qualify for ARFID, the disorder must meet several exclusion criteria:

- food avoidance must not be due to lack of available food or adherence to culturally or religiously sanctioned precepts;
- it does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way in which one's body weight or shape is experienced [2];
- it is not attributable to a concurrent medical condition or not better explained by another mental disorder. When the eating disturbance occurs in the context of another condition or disorder, the severity of the eating disturbance exceeds that routinely associated with the condition or disorder and warrants additional clinical attention;
- ARFID does not refer to developmentally normal behaviors (e.g., picky eating in toddlers, reduced intake in adults).

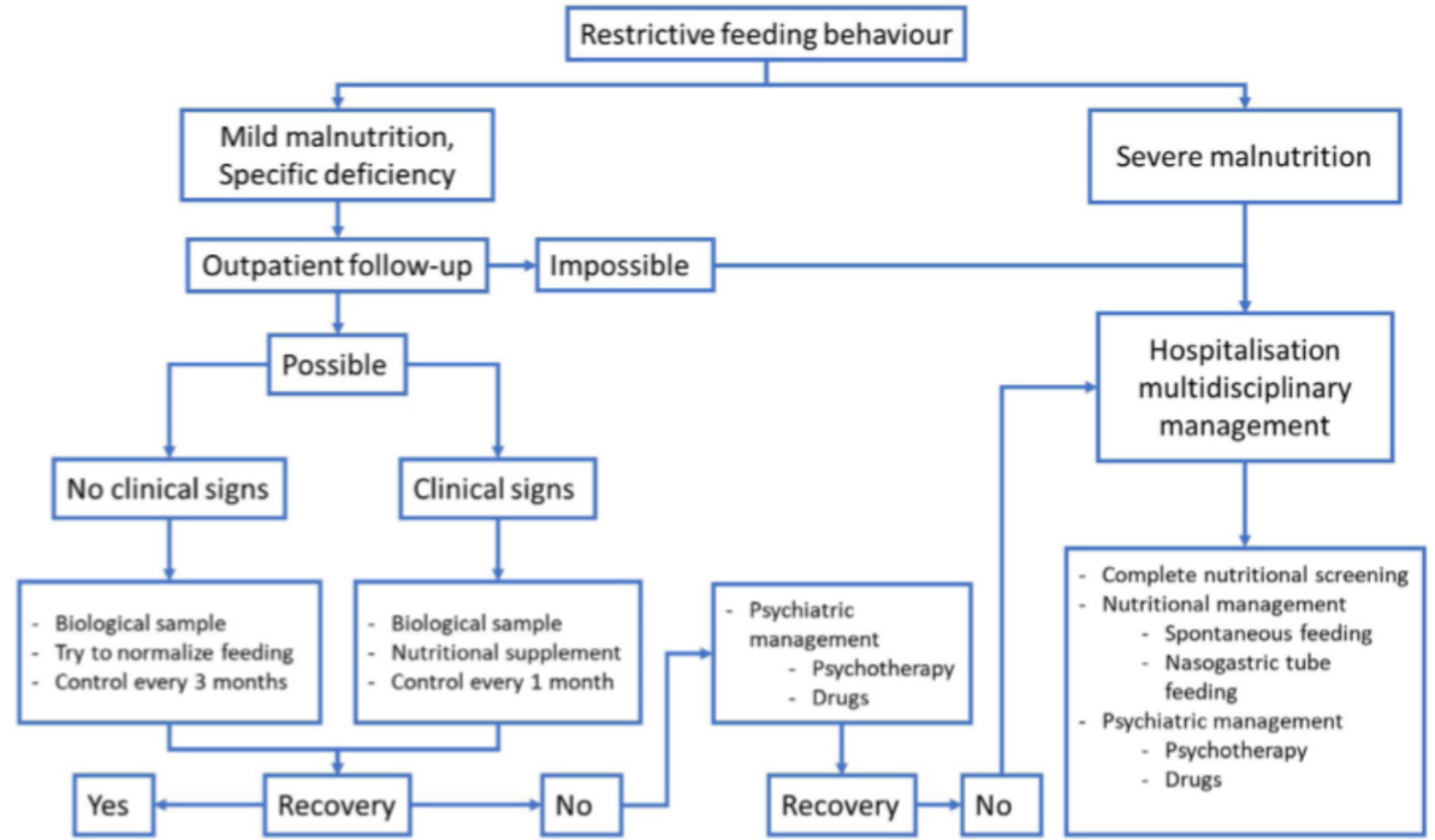

Fig. 1. Management of restrictive feeding behavior in children.

Assessment of Patients With ARFID Presenting to Multi-Disciplinary Tertiary Care Program

*†Tracy K. Richmond, MD, MPH, ‡§Julia Carmody, PhD, *§Melissa Freizinger, PhD, ‖Carly E. Milliren, MPH, †‡P. McGreggor Crowley, MD, *§Grace B. Jhe, PhD, and †‡Elana Bern, MD, MPH

ABSTRACT

There are no standard assessment approaches for Avoidant Restrictive Food Intake Disorder (ARFID). We describe our approach to multidisciplinary assessment after assessing more than 550 patients with ARFID. We collected online survey (ARFID-specific instruments, measures of anxiety, depression) measures. Electronic medical record data (mental health and gastrointestinal diagnoses, micronutrient and bone density assessments, and growth parameters) were extracted for the 239 patients with ARFID seen between 2018 and 2021 with both parent and patient responses to online surveys. We identified 5 subtypes/combinations of subtypes: low appetite; sensory sensitivity; fear + sensory sensitivity; fear + low appetite; fear + sensory sensitivity + low appetite. Those with appetite-only subtype had higher mean age (14.0 years, $P < 0.01$) and the lowest average body mass index z score (–1.74, $P < 0.01$) compared to other subtypes. Our experience adds to understanding of clinical presentations in patients with ARFID and may aid in assessment formulation.

Key Words: ARFID, assessment, subtypes

(*JPGN* 2023;76: 743–748)

What Is Known

- Avoidant Restrictive Food Intake Disorder (ARFID) is a relatively new eating disorder diagnosis describing individuals with restrictive eating but without an underlying gastrointestinal disorder or other eating disorder pathology to explain the restriction.
- Three different subtypes have been described: those with restrictive eating due to sensory characteristics, fear of negative consequences, or due to low appetite

What Is New

- In the largest cohort of patients with ARFID to date, we find considerable overlap in the described subtypes.
- Those with appetite only subtype had the oldest age at presentation as well as the lowest z score for body mass index.

Cohorte d’enfants avec PFD ARFID ou non

- Equipe tertiaire prenant en charge des enfants <19 ans avec difficultés alimentaires avec un impact nutritionnel, développemental ou sur le fonctionnement psycho-social

- Classification ARFID/non-ARFID selon la définition du DSM-V des 536 patients reçus dans le service entre 2013 et 2019

Farag et al. Dev Med Child Neurol. 2022

	n (*n*=536)	ARFID (*n*=263) *n* (%)	Non-ARFID (*n*=273) *n* (%)	Statistic	*p*
Age, y[a]					
0–3	69	26 (9.89)	43 (15.75)	2.00[b]	**0.046**
4–9	360	194 (73.76)	166 (60.81)		
≥10	107	43 (16.35)	64 (23.44)		
Sex					
Male	401	215 (81.75)	186 (68.13)	13.182[c]	**<0.001**
Female	135	48 (18.25)	87 (31.87)		
Comorbid ASD					
ASD	247	144 (54.75)	103 (37.73)	15.625[c]	**<0.001**
Non-ASD	289	119 (45.25)	170 (62.27)		
Nutritional adequacy[d]					
Adequate nutrition without supplement	90	29 (11.03)	61 (22.34)	31.891[c]	**<0.001**
Inadequate with oral supplement	172	80 (30.42)	92 (33.70)		
Inadequate with enteral feeding	49	15 (5.70)	34 (12.45)		
Inadequate with inadequate supplement	225	139 (52.85)	86 (31.50)		
Diet range[e]					
Full range	68	17 (6.46)	51 (18.68)	41.026[c]	**<0.001**
Selective diet	192	77 (29.28)	115 (42.12)		
Severe selectivity (<10 foods)	139	92 (34.98)	47 (17.22)		
Extreme selectivity (<5 foods)	137	77 (29.28)	60 (21.98)		

[a]Statistical significance is based on age as a continuous variable, age ranges are only presented as descriptives. Statistical test is based on [b]independent samples *t*-test and [c]Pearson's χ^2 (significant values are in bold type). [d]χ^2 values are based on inadequate with inadequate supplement versus other categories. [e]χ^2 values are based on less than 10 foods versus other categories. ARFID, avoidant/restrictive food intake disorder; ASD, autism spectrum disorder.

Farag et al. Dev Med Child Neurol. 2022

TCAPE non ARFID

- **Objectif de l'étude**: décrire les signes cliniques en lien avec le développement sensori-moteur, le déroulement du repas et les troubles fonctionnels digestifs associés chez des enfants entre 1 et 6 ans avec et sans TCAPE
- **Méthodologie: étude cas/témoins monocentrique**
  - **CAS: 244** patients de 1 à 6 ans recrutés consécutivement au sein de la cs multidisciplinaire TCAPE de Debré, **sans dénutrition, ni carence et sélectifs**
  - **TEMOINS: 109** enfants de 1-6 ans, sans difficultés alimentaires (échelle de Montreal <60) recrutés en crèche et écoles maternelles
  - **Questionnaire standardisé sur le développement** (inspiré de l'échelle de Denver), **le déroulement des repas, la sensorialité (**inspiré de l'échelle de Dunn) et **les TFI** (critères de ROME)
- Avis CPP Sud-Est VI, numéro : 21.00685.000004. ClinicalTrial.gov, NCT05157633.

Partie 1 – Développement

Psychomotor development	Cases (N = 244) %	Controls (N = 109) %	P-value
First walk >18 months	24%	0%	**<0.001**
Language delay	33%	6,5%	**<0.001**
Good hand mouth coordination	96%	100%	**NS**
Object exploration through mouthing	33%	95%	**<0.001**

Partie 2 – Temps du repas

mealtime practices	Cases (N = 244) %	Controls (N = 109) %	P-value
Distraction : always screens	77,5%	6%	**<0.001**
Conflict, forcing at mealtime	52,5%	7,5%	**<0.001**
Refusal pieces	89%	8%	**<0.001**
Food selectivity (< 10)	46%	3%	**<0.001**

Partie 3 – Hyperirritabilité sensorielle

Sensory Disorders	Cases (N = 244) %	Controls (N = 109) %	P-value
Tactile	> 50%	20%	**<0.001**
Visuelle	19%	2%	**<0.001**
Olfactive	32%	3%	**<0.001**
Peri et intra oral	29%	2%	**<0.001**

Partie 4 – Troubles Fonctionnels Intestinaux (TFI)

GI disorder	Total (N = 353)	Cases (N = 244)	Controls (N = 109)	P-value
Functional GI disorder	175	134	41	0.003
Constipation	137	117	20	**<0.001**
History of infant colic	31	12	19	**<0.001**
Gastro-oesophageal reflux	87	69	18	0.0018
History of food allergy	15	15	0	0.007*

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Oral exploration and food selectivity: A case-control study conducted in a multidisciplinary outpatient setting

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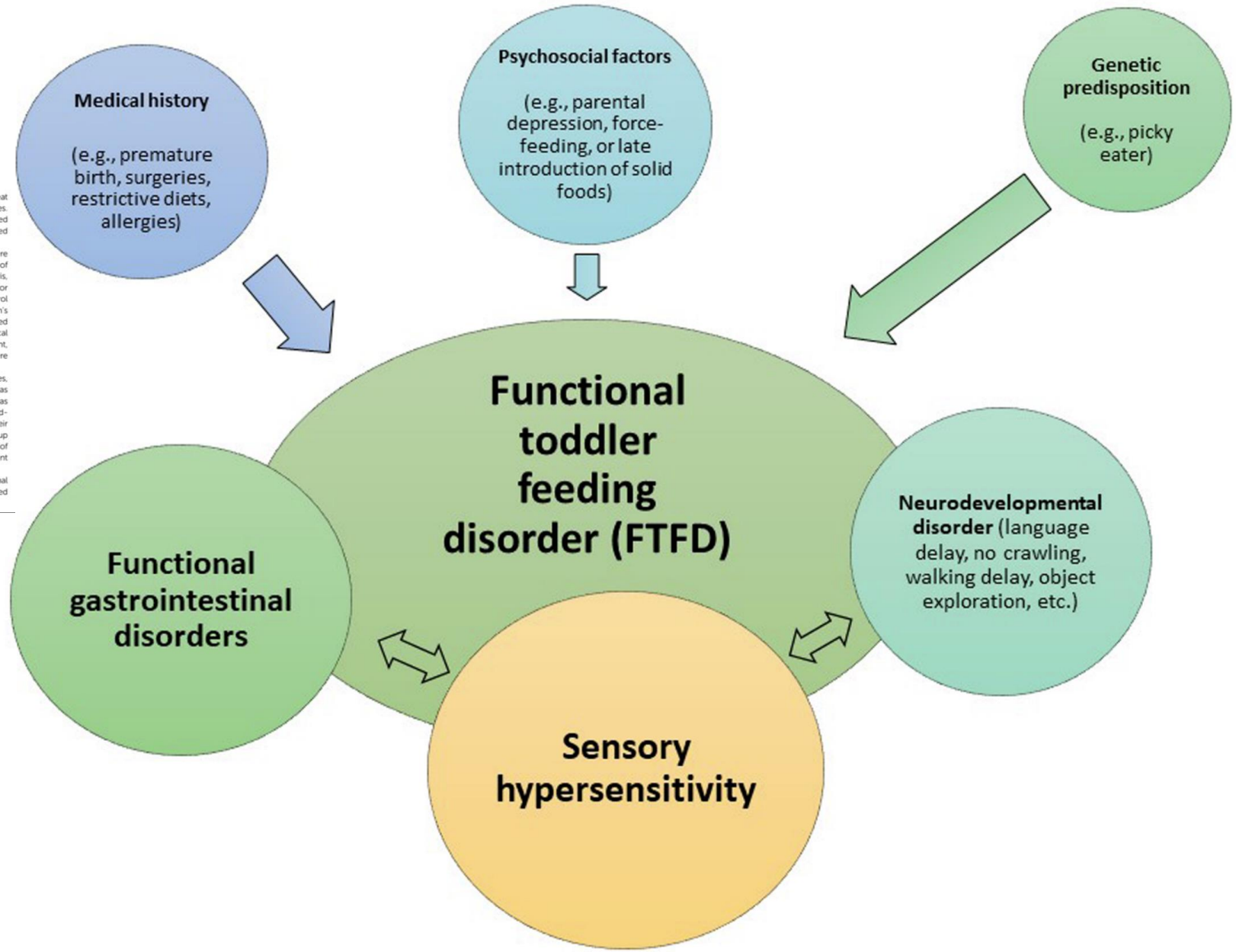
Background: Pediatric feeding disorders (PFDs) are common, and their great phenotypic variability reflects the breadth of the associated nosological profiles. PFDs should be assessed and managed by multidisciplinary teams. Our study aimed to describe clinical signs of feeding difficulties in a group of PFD patients assessed by such a team, and to compare them with children in a control group.

Methods: In this case-control study, case group patients 1 to 6 years old were consecutively recruited through the multidisciplinary unit for the treatment of pediatric feeding difficulties based at Robert Debré Teaching Hospital in Paris, France. Children with an encephalopathy, severe neurometabolic disorder, or genetic syndrome (suspected or confirmed) were excluded. Members of the control group, consisting of children with no feeding difficulties (i.e., Montreal Children's Hospital Feeding Scale scores below 60) or severe chronic diseases, were recruited from a day care center and 2 kindergartens. Data from medical histories and clinical examination related to mealtime practices, oral motor skills, neurodevelopment, sensory processing, and any functional gastrointestinal disorders (FGIDs) were recorded and compared between groups.

Results: In all, 244 PFD cases were compared with 109 controls (mean ages: cases, 3.42 [±1.47]; controls, 3.32 [±1.17]; $P = 0.55$). Use of distractions during meals was much more among PFD children (cases, 77.46%; controls, 5.5%; $P < 0.001$), as was conflict during meals. While the groups did not differ in their members' hand-mouth coordination or ability to grab objects, cases began exploring their environments later; mouthing, especially, was less common in the case group (cases, $n = 80$ [32.92%]; controls, $n = 102$ [94.44%]; $P < 0.001$). FGIDs and signs of visual, olfactory, tactile, and oral hypersensitivity were significantly more frequent among cases.

Conclusion: Initial clinical assessments showed that, in the children with PFDs, normal stages of environmental exploration were altered, and that this was often associated with signs of sensory hypersensitivity and digestive discomfort.



Bellaiche M, Leblanc V, Viala J, Jung C. Frontiers Ped 2023

Table 2. Parameters of growth and development of non-picky eating and picky eating groups.

	Non-picky eating [a] (n = 423)	Picky eating [a] (n = 488)	*p* value	Adjusted [†] β [‡]	SEM	95% confidence interval	Adjusted *p* value
Height, cm	110.45 ± 0.39	108.66 ± 0.33	< 0.001	-0.41	0.28	-0.96, 0.14	0.141
Height for age	0.31 ± 0.05	0.18 ± 0.04	0.046	-0.10	0.06	-0.22, 0.02	0.087
Weight, kg	18.96 ± 0.16	18.11 ± 0.13	< 0.001	-0.42	0.15	-0.72, -0.12	0.006
Weight for age	0.23 ± 0.05	0.08 ± 0.04	0.016	-0.14	0.06	-0.25, -0.02	0.017
BMI, kg/m^2	15.46 ± 0.07	15.28 ± 0.06	0.061	-0.21	0.09	-0.38, -0.04	0.016
BMI for age	0.04 ± 0.05	-0.06 ± 0.04	0.102	-0.12	0.06	-0.23, 0.00	0.056
Intelligence, IQ	100.65 ± 0.72	98.57 ± 0.62	0.026	-0.79	0.80	-2.36, 0.77	0.321

Importance du lait de croissance au delà de 3 ans pour les TCAPE

RESEARCH ARTICLE

Growth and Development in Chinese Pre-Schoolers with Picky Eating Behaviour: A Cross-Sectional Study

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Abstract

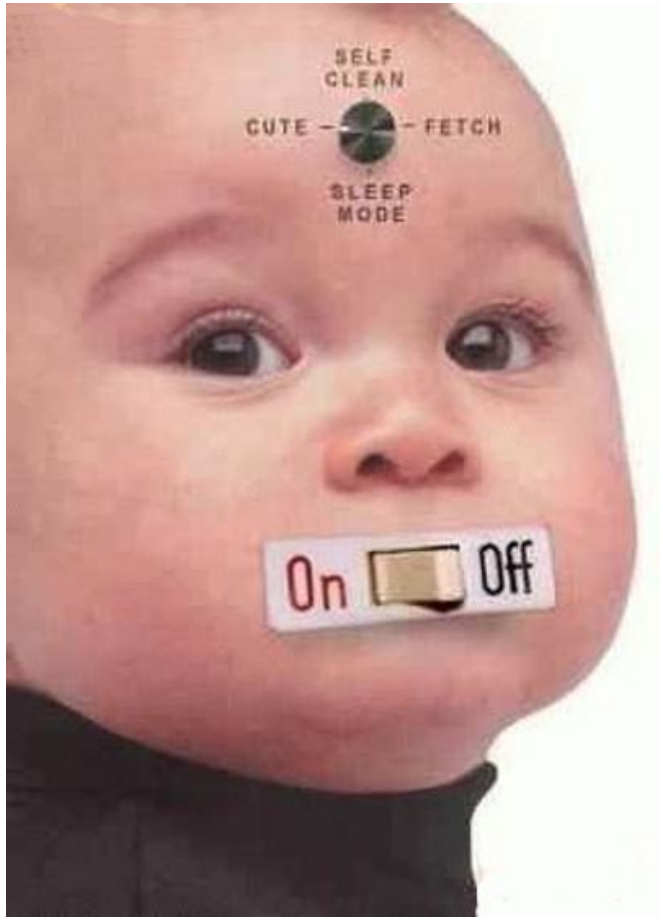
Objective

To explore the associations between picky eating behaviour and pre-schoolers' growth and development. Corresponding potential mechanisms, such as nutrient and food subgroup intake, as well as micronutrients in the blood, will be considered.

Table 5. Dietary intake of ener groups.

	Non-picky eating		Picky eating		*p* value	
	Mean	SE [e]	Mean	SE [e]	Unadjusted	Adjusted [†]
Energy (kcal)	1627.65	34.65	1554.05	34.27	0.133	0.232
Protein [a] (g)	55.77	1.37	51.81	1.10	0.023	0.038
Fat (g)	59.29	1.31	57.82	1.48	0.461	0.488
Carbohydrate (g)	225.11	5.77	213.77	5.17	0.143	0.300
Dietary fibre [a] (g)	7.61	0.28	6.83	0.21	0.027	0.049
Vitamin A (μgRE [b])	481.72	26.51	543.14	42.79	0.240	0.385
Thiamine (mg)	0.81	0.03	0.87	0.07	0.440	0.466
Riboflavin (mg)	0.93	0.05	0.91	0.05	0.774	0.714
Niacin (mgNE [c])	11.18	0.32	10.97	0.32	0.641	0.790
Vitamin C (mg)	63.95	2.42	66.70	3.21	0.505	0.715
Vitamin E (mgα-TE [d])	19.08	0.48	19.14	0.60	0.941	0.820
Calcium (mg)	443.05	22.87	446.17	24.42	0.926	0.975
Magnesium (mg)	230.54	6.72	210.49	5.35	0.020	0.059
Iron [a] (mg)	17.29	0.52	15.67	0.41	0.014	0.038
Zinc [a] (mg)	9.33	0.45	8.31	0.24	0.044	0.046
Copper [a] (mg)	1.48	0.04	1.62	0.09	0.128	0.157

Manger ce n’est pas qu’une histoire de bouche …



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