When the chest speaks, sometimes it's the liver that speaks out

Département de pédiatrie

Pianca Eva[1], Calinescu Ana M.[2], Spigariol Fabian[1]

Introduction

Hepatoblastoma is the **most frequent pediatric liver malignancy**, accounting for 1% of all pediatric malignancies. It usually occurs before the age of 3 years and commonly presents as a **painless abdominal mass**. Thoracic involvement is most often related to pulmonary metastases or mediastinal lymph node disease. **Primary thoracic symptoms** as an initial presentation **are rare** and may delay diagnosis.

Case presentation

We report the case of an 8-year-old patient presenting with: 3-day history of **left lower chest pain**, worsened by movements and breathing, **irradiating in the left upper abdomen**. The pain had a **sudden onset at rest,** without trauma or physical effort. No digestive symptoms were reported.

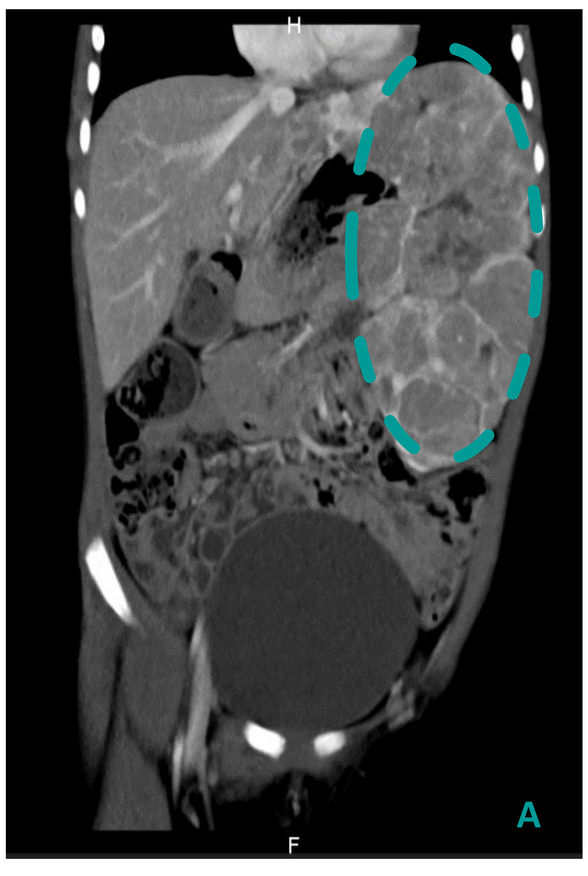
Physical examination: firm, irregular and tender mass measuring 8 × 15 cm **left hypochondrium** and flank, extending beyond the midline. Both the patient and her parents described the abdominal contour "as usual".

Investigations

Laboratory tests: mild elevation in inflammatory parameters, hepatic enzymes, alkaline phosphatase and gamma-GT. **Alfa-1-foetoprotein at 295000 kU/L**. Coagulation studies normal.

CT scan: large expansile lesion of the left hepatic lobe with extension into segment IV, 7 × 15 × 16 cm (transverse × anteroposterior × cranio caudal) with **cystic and necrotic components**, displacing adjacent structures.

Staged PRETEXT III multifocal.

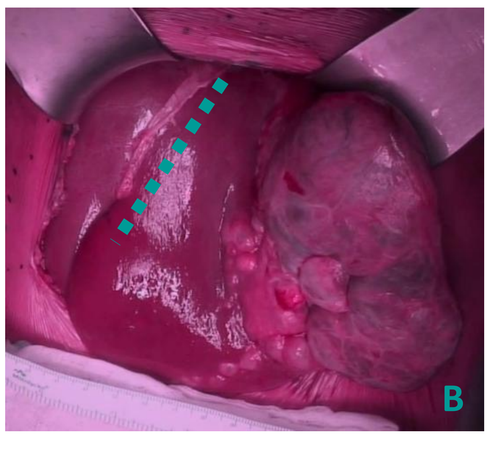


A: CT Scan showing a large expansile lesion of the left hepatic lobe with extension into segment IV, measuring 7 × 15 × 16 cm.

Management and outcome

Patient was transferred to a tertiary pediatric surgery center for **biopsy** that **confirmed a fetal hepatoblastoma**.

Neoadjuvant **chemotherapy** was initiated, followed by a **complete surgical resection** with left hepatectomy and **adjuvant chemotherapy.**



B: Intraoperative image showing left hepatectomy line

Conclusion

This case illustrates an **atypical presentation of hepatoblastoma** in terms of initial thoracic symptoms and patient age. It emphasizes that chest pain in children should prompt a thorough clinical examination, including abdominal assessment. **Significant physical changing may remain unnoticed by patients and families,** reminding clinicians that when the chest speaks, the liver may be the underlying cause.

[1] Department of pediatrics, Réseau Hospitalier Neuchâtelois (RHNe), 2000 Neuchâtel, Switzerland
[2] Division of pediatric surgery, Department of pediatrics, Gynecology and Obstetrics, University Hospitals of Geneva, University of Geneva, 1205 Geneva, Switzerland

References

Knowledge, Perceived Harms, and Reasons for Use of Disposable Electronic Cigarettes Among Youth: A Qualitative Study in Switzerland

Romaine Delacrétaz (1), Lorraine Chok (2), Luc Lebon (3), Jeremy Cros (3), Alexandre Dubuis PhD (4), Yara Barrense-Dias PhD (2) *, Anne-Emmanuelle Ambresin (1)*

Interdisciplinary Division for Adolescent Health, Lausanne University Hospital (CHUV), Av. de la Sallaz 2, 1011, Lausanne, Switzerland. 2. Department of Epidemiology and Health Systems, Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Vaud, Switzerland 3. Department of Health Promotion and Prevention, Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Vaud, Switzerland 4. Promotion Santé Valais, Sion, Switzerland. *co-senior last authors

Background

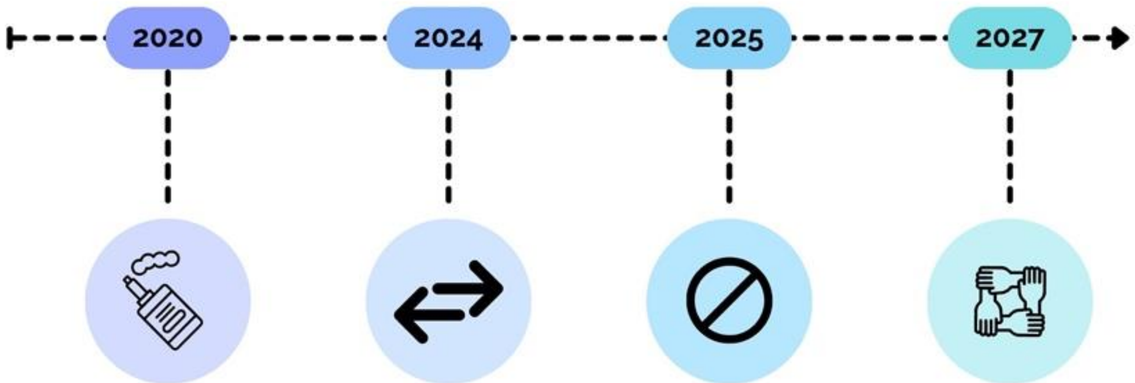
- Disposable electronic cigarettes (DEC) have gained popularity among adolescents and young adults (AYA) since 2020 (1)
- In Switzerland, 60% of AYA aged 14 to 25 have tried DEC, and 30% use them regularly (2)
- DEC present specific risks, including nicotine addiction, exposure to harmful substances, and a significant environmental impact (3, 4)
- There are concerns about a possible increase in nicotine dependence among young people (5-7). Indeed, most AYAs, including non-smokers, choose devices containing nicotine (2)
- Developmental specificities of AYA, such as peer influence, experimentation, growing autonomy and shaping of identity can affect substance use, which often begins during these years (8, 9)

Objectives & Methods

This qualitative study explored AYA's knowledge, perceived harms, and reasons for DEC use through a developmental lens, to better understand vulnerabilities specific to this age and inform prevention strategies targeting this population.

Eight focus groups were conducted via videoconference between October and December 2022 with 51 participants aged 14-25 years living in the Swiss cantons of Vaud and Valais. Discussions were transcribed, anonymized, and were analyzed using a thematic analysis approach.

Legislation



First DEC in Switzerland

Legislated by the Federal Act on Foodstuffs and Utility Articles, allowing their sales to minors and their use in public space

Reclassification

Reclassified as tobacco derived products

- prohibiting sales to minors
- restricting advertising and nicotine concentration to 20 mg/ml

Swiss parliament

Following the example of several European countries, the Swiss Parliament voted in favor of a ban on DEC. To this date, it has not been yet applied

Popular initiative

A popular initiative was approved in 2022 to better protect AYA from advertising and should strengthen legislation from 2027 onwards

Results

Product knowledge

Composition
- limited knowledge of components
- product information unclear
- traditional cigarettes are more "predictable"

Nicotine content/properties
- nicotine concentration unclear, hard to relate to other nicotine-derived-products
- percentage can lower harm perception
- addiction risk of nicotine is known
- participants have access to high levels of nicotine (50mg/ml) although prohibited

Harm Perception

Short-term physical health risks
- dizziness, abdominal pain and nausea associated with nicotine content
- throat and respiratory issues
- symptoms linked to higher number of inhalations compared to conventional cigarettes
- uncertainty of long term health risks
- features of DEC (fruit taste, packaging) tend to minimize harm perception

Addictive risk
- addiction risk facilitated by accessibility of the product
- higher nicotine intake than with conventional cigarettes
- gateway effect and risk of using DEC with nicotine even in never-smokers

! No meaningful differences in knowledge or harm perception were observed between cantons with differing regulations at the time of the study

"Well it doesn't say what's inside, that's actually what's annoying, like there's no way to know" (F14-17, VS)

"The percentages are usually pretty low, I think it never goes over... like 10 percent [...] I end up just telling myself that it's nothing" (M18-25, VD)

"[DEC with 5% nicotine] [...] it really hits you hard, it makes your stomach ache and makes you feel sick with like two hits" (F18-25, VD)

"[...] you're not gonna count each time you take a puff so, [...] I guess you smoke way more, I mean there actually isn't really a way to measure, right?" (F18-25 VD)

"It's very sugary, or even fruity [...] it kind of feels healthy, I mean things that are healthy like fruits [...]" (M14-17, VD)

"[...] people who aren't addicted to nicotine yet aren't necessarily careful and won't be interested in buying vapes without nicotine" (M18-25, VD)

Reasons for Use

Experimentation & Risk-taking

- Driven by curiousity and appeal of DEC
- Attractivity of flavors, in particular fruits
- Experimentation through "tricks"

« I'm not a smoker at all but I know that if someone hands me a vape or something, well you kind of want to take a hit to blow it out or try making circles or stuff like that » (M18-25, VS)

Autonomy & Transgression

- "Forbidden" nature described as drive for consumption
- Accessibility and absence of smell makes it easier to transgress

"[...] something that you can't smell, that you can smoke under your blanket at night without your parents knowing, it's too easy (laughs)" (M 18-25, VD)

Peer relationships & Group belonging

- Seen as social tools
- Interchangeable with conventional cigarettes to fit in specific groups
- Initiation and continuation often a consequence of group influence
- Group dynamics could be useful to quit

"Yeah, like it's a way to socialize, I mean having a crew, [...] you have your vaping crew and... yeah well it creates a sort of identity in the end"(F18-25, VS)

"But you usually don't get started by yourself, there's always people pushing you into it" (M14-17, VD)

Identity & Social image

- Participants associate the use of DEC with younger adolescents
- There is a gendered perception of DEC use in favor of girls
- Social media and influencers establish DEC as a fashion trend
- Possible temporary nature of DEC trend

"I have a bit of a cliché in mind of like... more of a young girl, I'd say [...] I know way more women or girls who use them than men."(M18-25, VD)

"[...] vaping, well it also became a trend [...] a few months, a few years they're like disappointed by it and they just move on to something else"(F14-17, VS)

Substitute for cigarette or smoking-cessation tool

- DEC and conventional cigarettes often described as interchangeable
- "Hand-to-mouth" gesture can help with smoking cessation
- Unintentional lead to dual use

"[...] when I'm out... either I lose my vape or it's out of battery, I'm usually always asking for cigarettes from other people but my goal is to smoke as little cigs as I can [...]" (F18-25, VD)

"For a friend of mine, it was the same, she... well she thought she would cut down on cigs by smoking vapes, but actually it's the opposite, she smokes (cigarettes) as much as she used to and on top of that she vapes"(F18-25, VD)

Conclusion

- **DEC ban limitations -** The ban is essential but insufficient, as DEC-like nicotine products are already available
- **Youth appeal drivers -** Regulation must target packaging, design, flavors, size, price, and other features that attract AYA
- **Enforcement challenges -** Regulations face enforcement difficulties; age limits alone do not shift perceptions or behavior
- **Need for harm research -** More evidence on vaping harms in AYA is required to guide prevention and clinical practice
- **Prevention -** Prevention must consider gender- and age-specific norms and include youth in design and testing
- **Monitoring -** Continuous monitoring is crucial to evaluate the ban's impact and detect shifts toward alternative nicotine products

References

UNIVERSITY
CHILDREN'S HOSPITAL
ZURICH
Children's Research Center CRC

The hospital of the
Eleonore Foundation

Universitäts-
Kinderspital Zürich – Eleonorenstiftung
Lenggstrasse 30
CH-8008 Zürich
www.kispi.uzh.ch

Oral Hygiene Behavior and Knowledge on Prevention of Infective Endocarditis in Transition-Aged Adolescents With Congenital Heart Disease

Céline Steiner[1,4,7], Ingrid Beck[2], Matthias Greutmann[3,7], Ramona Hämmerli[3], Oliver Kretschmar[4,5,7], Angela Oxenius[3,5], Beatrice Latal[1,4,6,7], Rabia Liamlahi[1,4,6]
[1]Child Development Center, University Children's Hospital, Zurich, Zurich, Switzerland; [2]Department of Research, Children's Hospital of Eastern Switzerland, St. Gallen, Switzerland; [3]Department of Cardiology, University Hospital Zurich, Zurich, Switzerland; [4]Children's Research Center, University Children's Hospital Zurich, Zurich, Switzerland; [5]Department of Cardiology, University Children's Hospital Zurich, Zurich, Switzerland; [6]University Research Priority Program (URPP), Adaptive Brain Circuits in Development and Learning (AdaBD), University of Zurich, Zurich, Switzerland; [7]University of Zurich, Zurich, Switzerland

Background

- Congenital heart disease (CHD) is the most common birth malformation.
- CHD often leads to significant medical, neurodevelopmental, and psychosocial challenges → specialised follow-up over the whole life-span of high importance.
- Transfer from paediatric to adult care is ideally part of a long-term transition process, during which adolescents learn to independently manage their CHD → e.g., to acquire knowledge about typical complications and how to prevent them.

Infective Endocarditis:
- Bacterial infection of the heart
- High morbidity and mortality
- Substantial lifetime risk in individuals with CHD
- Good oral hygiene and dental care important preventive factors

Aims

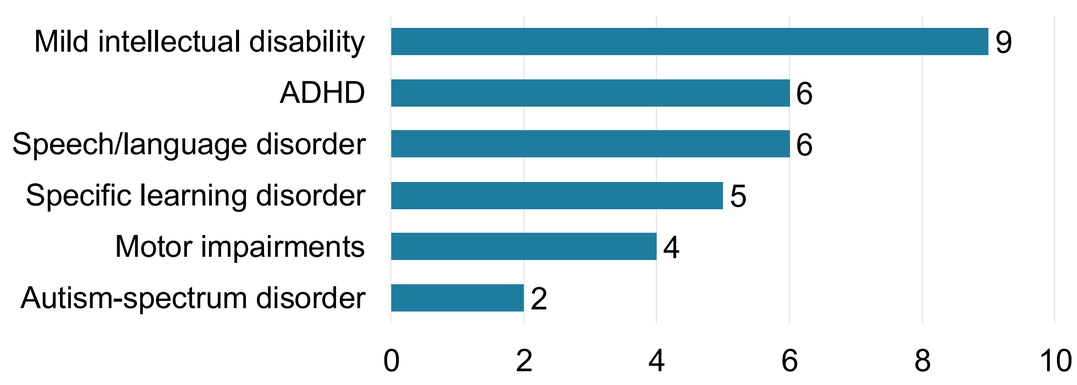
- Are adolescents with CHD aware about endocarditis and its prevention?
- Especially important during transition and transfer of care
- What about adolescents with CHD and comorbid neurodevelopmental disorders (NDDs)?

Methods

	CHD without NDDs (*n* = 69)	CHD with NDDs (*n* = 26)	*p*
Age [years, *M* (*SD*)]	17.9 (1.3)	17.8 (1.4)	0.820
Sex [male, *n* (%)]	36 (52.2)	17 (65.4)	0.355
Socioeconomic status [*Md* (IQR)][a]	6.5 (4.25)	6.0 (2.0)	0.450
Severe CHD [*n* (%)][b]	39 (56.5)	21 (80.8)	0.052
Univentricular CHD [*n* (%)]	13 (18.8)	5 (19.2)	0.999

[a]scale from 2 to 12 (2 = lowest, 12 = highest)
[b]According to Hoffmann & Kaplan *J Am Coll Cardiol* 2002

Included types of NDDs (*n*)[a]



[a]*n* = 8 adolescents had multiple NDDs

Results

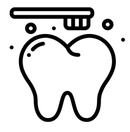
55.8%
of adolescents with CHD recognized the correct definition endocarditis (53/95)

52.5%
of those recognized its most characteristic symptom (30/53)

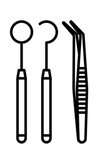
44.2%
of adolescents did **not** know the term endocarditis (42/95)

The proportion of adolescents not knowing «endocarditis» was larger in those with mild intellectual disability (59.3%, $p = 0.04$, $V = 0.22$)

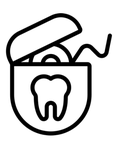
76.8%
of all adolescents were aware about the importance of good oral hygiene for CHD patients (43/56).



84.9%
of adolescents indicated to brush their teeth at least twice daily



89.5%
indicated to have visited the dentist within the last year



12.8%
indicated to use dental floss at least once a day

Conclusions

Psychoeducation on infective endocarditis remains important in patients with congenital heart disease.
→ Especially during transition from paediatric to adult care, as patients become more autonomous and risk-taking behaviour is enhanced.
→ Knowledge only partially translates into health behaviour.

References
Liu et al., *Int J Epidemiol*, 2019; Latal, *Clin Perinatol*, 2016; Moons et al., *EHJ*, 2021; Havers-Borgersen et al., *Am Heart J*, 2023; Moons et al., *Heart*, 2001; Goossens et al., *Eur J Cardiovasc Nurs*, 2013; Illustrations: Storyset.com

Funding
Children's Research Center (CRC), University Children's Hospital Zurich

Contact – Céline Steiner
University Children's Hospital Zurich
celine.steiner2@kispi.uzh.ch

Département femme-mère-enfant
Service de pédiatrie

CONGRÈS ANNUEL PÉDIATRIE SUISSE 2026

pédiatrie suisse
L'organisation professionnelle de la pédiatrie

Pediatric migration health: a holistic and regional approach to newly arrived asylum-seeking children in the Canton of Vaud

Elodie Manet[1], Paola Assandro[1]

[1] Consultation de Migration Pédiatrique, Département femme-mère-enfant, Centre Hospitalier Universitaire Vaudois, Lausanne

1. Introduction

In 2025, the Canton of Vaud reached a **milestone in healthcare equity for newly arrived asylum-seeking children (0–15 years)** through the full territorial deployment of the Pediatric Migration Consultation (MiP). By removing geographical and linguistic barriers, the MiP provides access to care for this vulnerable pediatric population.

2. Objectives

Using anonymized socio-demographic data, we describe a medical evaluation framework for asylum-seeking children. The model aims to **promote health equity through integrated clinical and social assessments, preventive medicine, and early access to psychiatric intervention**.

3. Methods

A descriptive analysis examines quantitative data regarding consultation volume, types of care, and the demographic profile of the children.

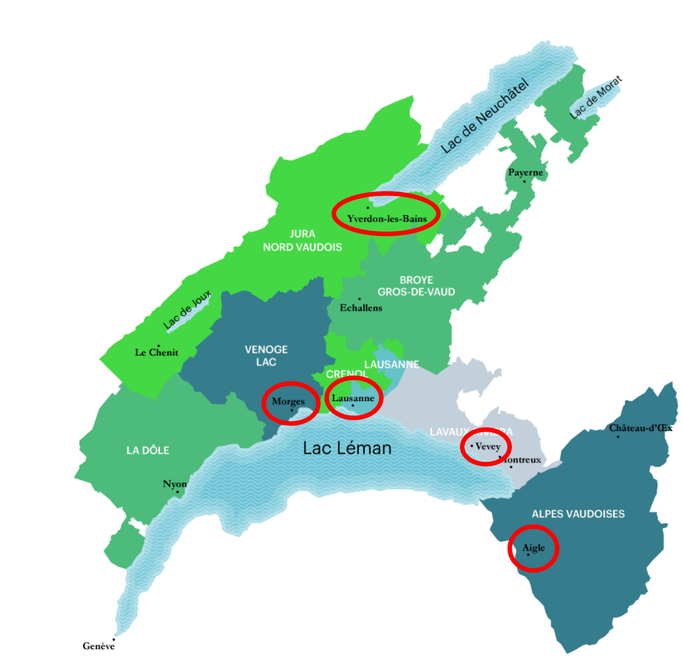
The MiP operates through a decentralized, multidisciplinary model across **5 regional sites** (Aigle, Vevey, Morges, Lausanne, and Yverdon) to ensure accessibility throughout the Canton of Vaud.
The initial check-up consists of:

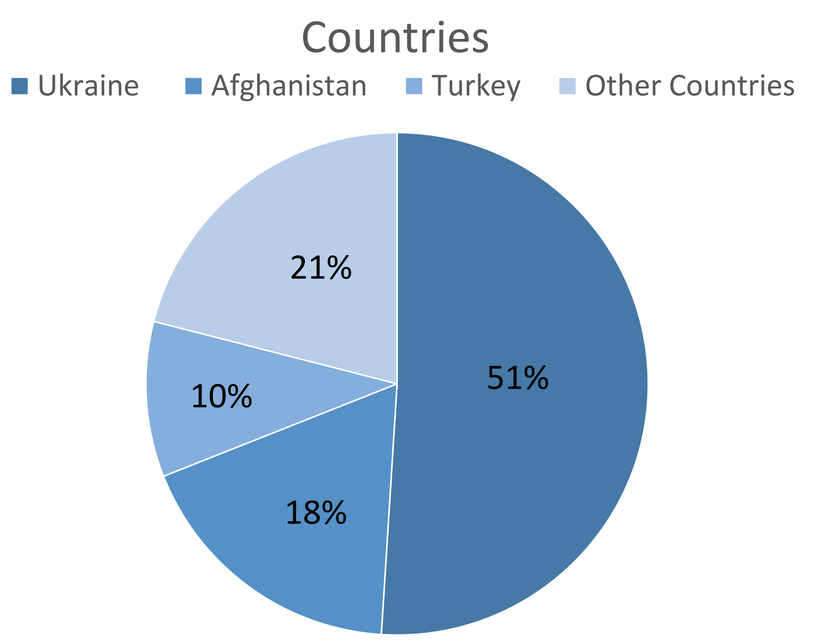
- **2-6 "pediatrician-nurse-interpreter" consultations** covering clinical history, migration journey, vaccination status, and somatic and mental health needs.
- **A "psychiatrist-pediatrician"** co-consultation is available for psychological needs.
- **Integrated collaboration** with social workers, other healthcare providers, and schools**.**

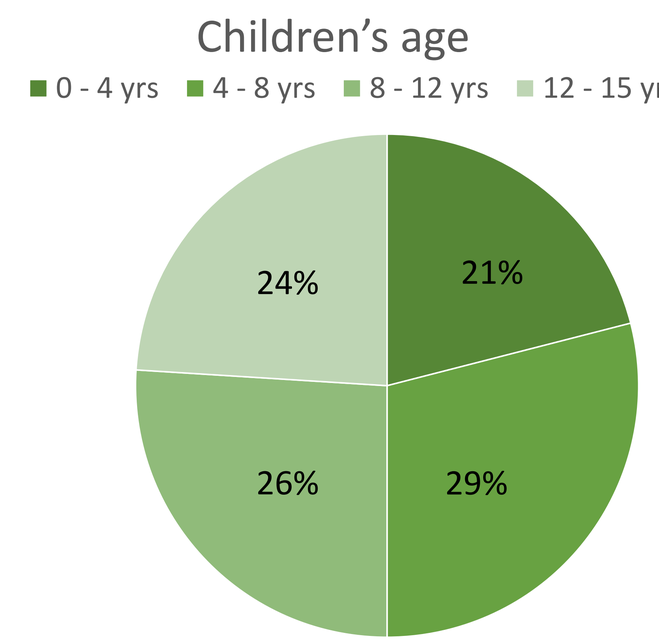
4. Results

In 2025

- **539 children** (aged 0–15) were evaluated, of whom 284 completing a full entry assessment.
- Patients originated from **18 countries**, primarily Ukraine (51%), Afghanistan (18%), and Turkey (10%).
- The data showed a **balanced age distribution** (0-4 yrs: 21%, 4-8 yrs: 29%, 8-12 yrs: 26%, 12-15 yrs: 24%).
- More than 2/3 of patients were scheduled for psychological co-consultations.
- For the 284 children who underwent the **full assessment**, evaluations covered **clinical history, migration journey, vaccination status, and mental health needs**. In accordance with the **Swiss Society of Pediatrics guidelines** for migrant children, vaccinations and blood screenings were systematically offered.







5. Discussion

This analysis offers a valuable perspective on access to healthcare for migrant children in Swiss shelters. Operating just one day a week per site, the on-site medical and nursing care model has successfully improved access to care. A major barrier to healthcare delivery is the challenge of securing interpreters for a wide variety of languages.

6. Conclusion

Through its unique holistic and networked approach, the MiP has become an indispensable resource for the Canton of Vaud. It ensures health equity, optimizes clinical care, facilitates integration into the Swiss healthcare system, and provides specialized expertise for all newly arrived asylum-seeking children under the age of 16.

Bibliography:

- Common health needs of refugees and migrants: literature review, World Health Organization 2021
- Promoting the health of refugees and migrants: experiences from around the world, World Health Organization 2023

The “More Is Better” Misconception: Vitamin D Overdose in a 4-Year-Old Child

Authors: Özdemir AB, Herterich R, Guggenheim R, Tomaske M. Department of Pediatrics, Stadtspital Zurich.

A 4-year-old child presented with fatigue, constipation, and nocturia. Repeated history-taking revealed **unsupervised prolonged high-dose vitamin D** and calcium intake for presumed immune support, initially **perceived as harmless** and therefore not reported.

APPROPRIATE VIT D USE*

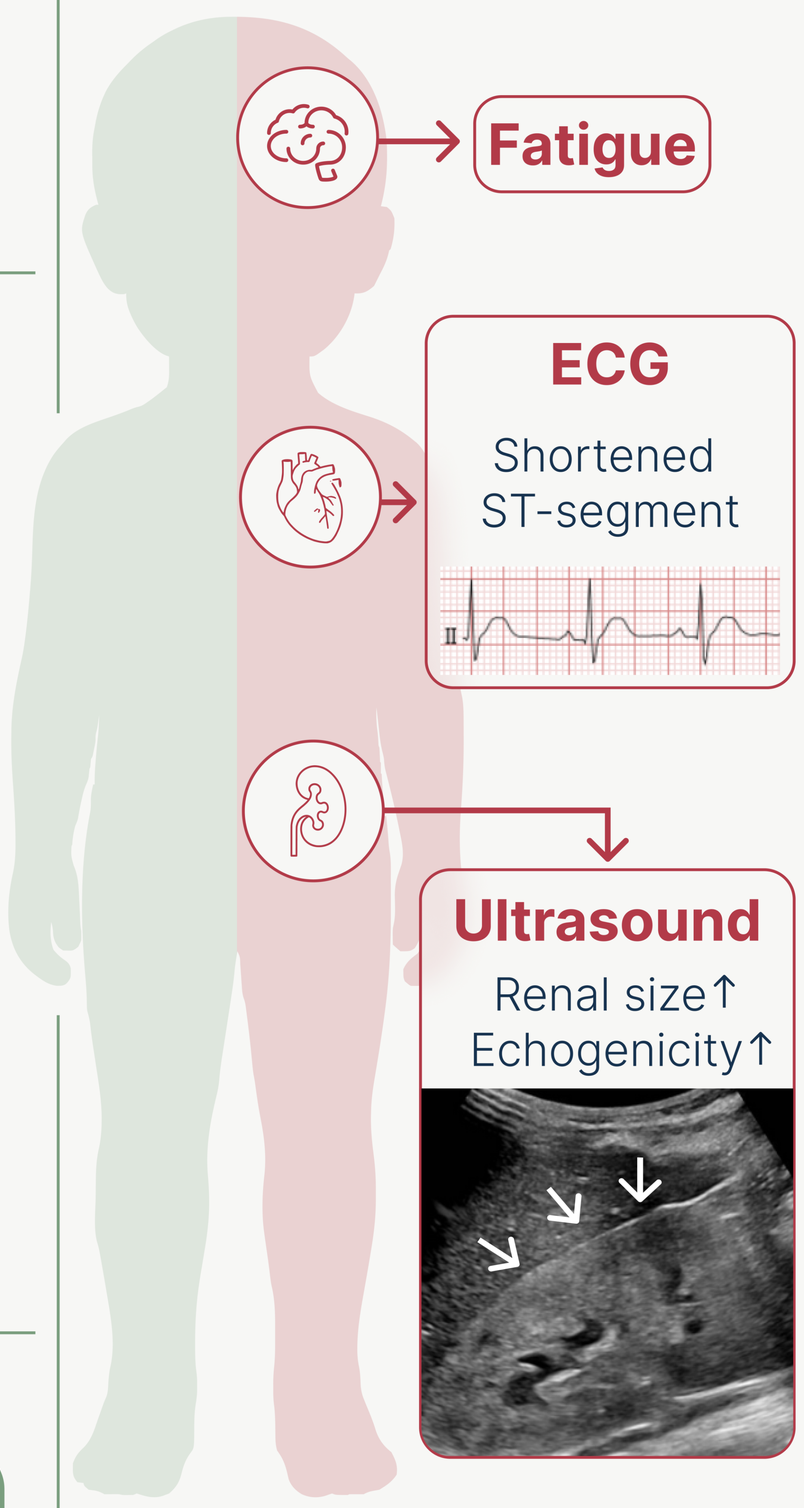
600 IU/day

Recommended pediatric (4y) daily intake

BENEFITS

- Immune function
- Bone development
- Muscle function

Safe when used supervised and as recommended



UNSUPERVISED HIGH-DOSE

20.000 IU/day
Calcium 1.9 g/day

~ 2 Months exprosure

SYMPTOMS

- Fatigue
- Polyuria
- Constipation

ASSESMENT

- Hypertension
- ECG
- Ultrasound

LABORATORY

Calcium (total)	25(OH)D
4.71 mmol/L	**1226 nmol/L**

MANAGMENT

- Tertiary care
- Intensive IV fluids

KEY MESSAGE

Unsupervised high-dose vitamin D supplementation may be **perceived as harmless** by caregivers, remain unreported, and lead to **life-threatening** hypercalcemia and **acute kidney injury**.

Caregiver education and supervised supplementation are essential to **prevent intoxication**.

Stadtspital Zürich

*According to Swiss BAG recommendations.

Convulsive seizure or opioid intoxication? Diagnostic pitfalls in a 16–month–old

Service d'Accueil et d'Urgence Pédiatriques (SAUP),
Département de la Femme, de l'Enfant et de l'Adolescent (DFEA), Hôpitaux Universitaires de Genève (HUG)

Megally A. [1]; Mrabet-Deraoui I. [2]

[1] Resident doctor, Department of Paediatrics, University Hospital of Geneva, Switzerland; [2] Senior doctor, Department of Paediatrics, University Hospital of Geneva, Switzerland

Context and clinical presentation

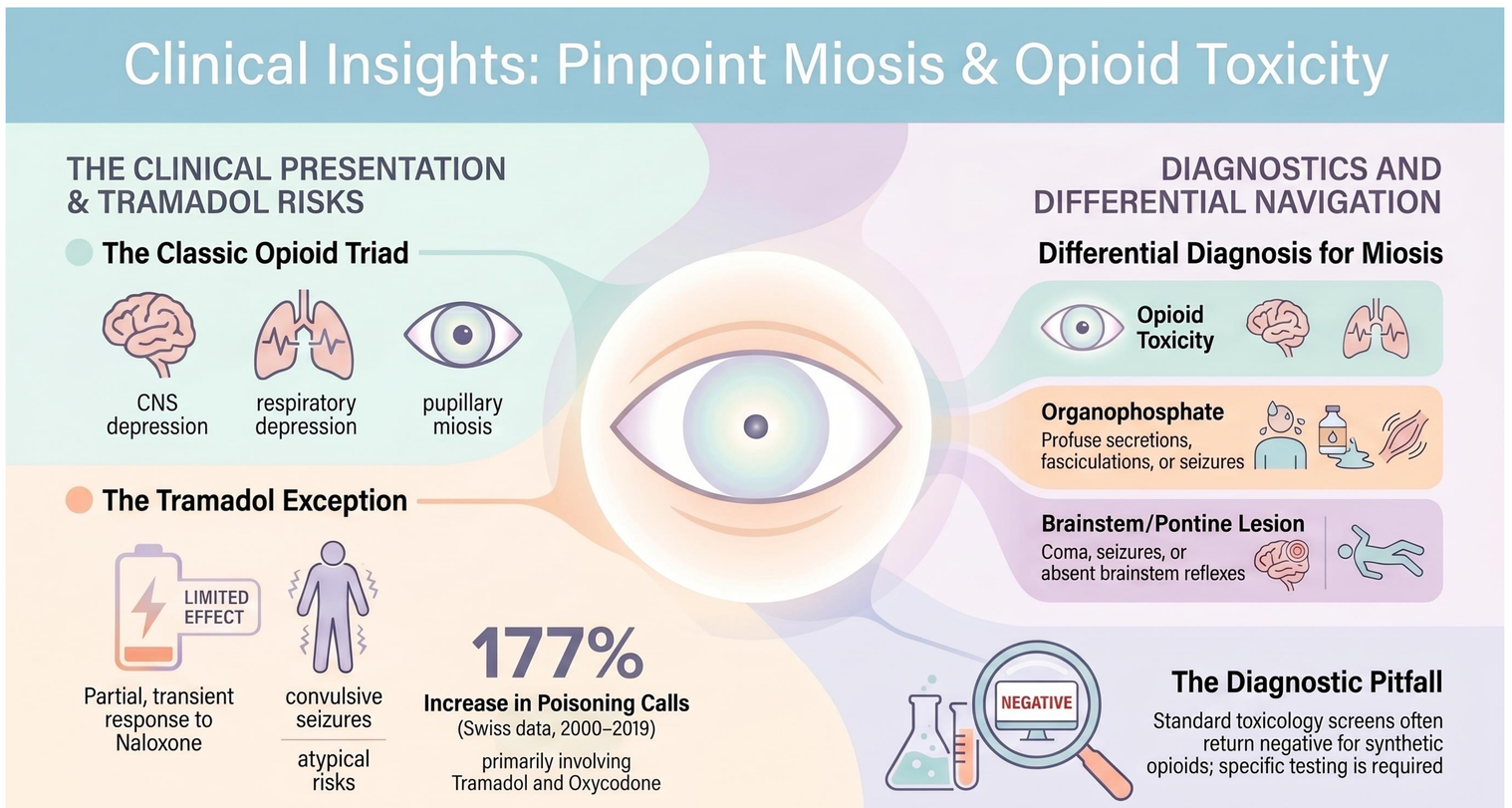
- A 16-month-old child presented with repeated vomiting and abnormal chewing movements.
- Clinical deterioration included altered consciousness (GCS 7-10/15), bilateral non reactive miosis, and bradypnea.
- Opioid intoxication was suspected, and naloxone administration led to partial transient improvement.
- The patient subsequently developed generalized seizure with hypertonia, ocular deviation, and trismus.
- Initial toxicology was negative for opioids.
- Further analyses were positive for tramadol and gabapentin.
- Encephalitis and intracerebral hemorrhage were excluded by brain MRI and lumbar puncture.

Discussion

- Opioid intoxication is an increasing public health concern in pediatrics, particularly in young children at risk of accidental ingestion.
- Clinical presentation may be atypical and can mimic other acute neurological conditions.
- In Switzerland, opioid-related poisoning calls increased by 177% between 2000 and 2019, mainly involving tramadol and oxycodone.[1]

Clinical triad presentation of opioid intoxication

CNS depression + respiratory depression + pupillary miosis



Differential diagnosis

- Pinpoint pupils + respiratory depression → Opioid or Organophosphate
- Pinpoint pupils + coma + absent brainstem reflexes → Pontine lesion
- Pinpoint pupils + profuse secretions + fasciculations → Organophosphate
- Pinpoint pupils + seizures → Organophosphate or Brainstem lesion

Conclusion

- Tramadol intoxication may present with atypical opioid toxicity, including seizures and an incomplete or transient response to naloxone.
- Routine toxicology screens may not detect synthetic opioids; specific toxicological testing should be considered when clinical suspicion persists.
- The rising incidence of pediatric opioid exposures highlights the importance of clinician awareness, early recognition, and preventive measures such as safe medication storage.

[1] PubMed PMID : 36090669.
[2] Infographic created with NotebookLM.

Contact :
nmgl@hug.ch;
imbt@hug.ch

Recurrent Atraumatic Limp:

When Transient Synovitis Isn't So Transient

Service d'Accueil et d'Urgence Pédiatriques (SAUP), Département de la Femme de l'Enfant et de l'Adolescent (DFEA)
Hôpitaux Universitaires de Genève (HUG)
Gonçalves D[1], Mrabet I[1], Fernandez B[1], Lutz A[1]
Correspondence e-mail address: dgnv@hug.ch

Introduction

- **Atraumatic, afebrile limp** is a common paediatric presentation, often posing a significant diagnostic challenge.
- **Transient synovitis** is a **common** cause of limp in children, most frequently between **3 and 8 years of age**.
- **Recurrence** rates of 4–15% have been reported, although most children have a **benign clinical course**.
- **Recurrent episodes** involving **large joints**, warrant careful evaluation to exclude **evolving systemic disease.**

Case Presentation

- **7-year-old child** presenting with right hip pain following a recent viral illness.
- No history of trauma or fever.
- **4 similar episodes** of transient synovitis over the previous 2 years.

Episode 1	Episode 2	Episode 3	Episode 4
April 2024 Right hip	October 2024 Left hip	November 2025 Left hip	January 2026 Right hip

- **No weight loss, no night sweats**, no deterioration in general condition.
- No contact with farm animals or ticks.
- **Personal history:** celiac disease.
- **Family history:** mother with celiac disease.
- **Physical examination:** right hip tenderness, limited range of motion.

Radiological Findings

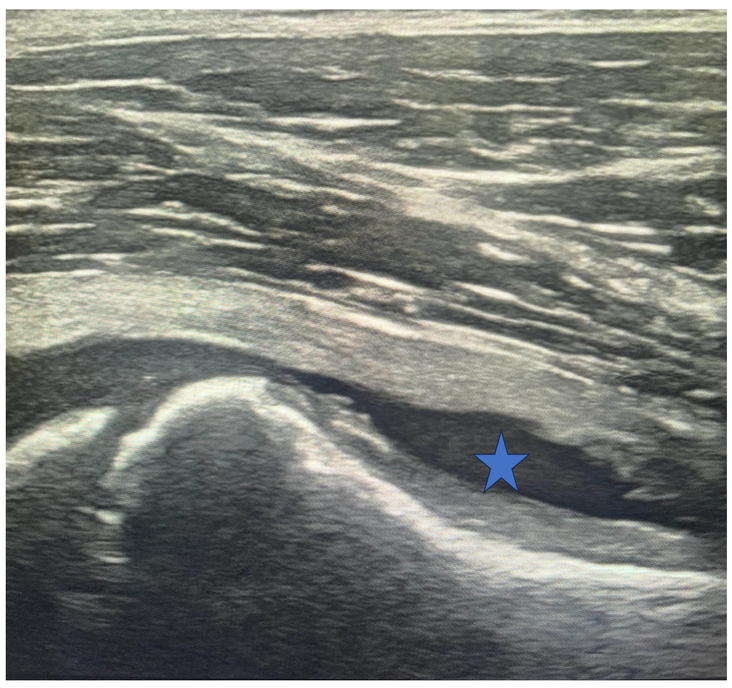


Image 1: Hip ultrasound
★ joint effusion consistent with synovitis; no septic joint or structural abnormality.

Investigations

Inflammatory markers	Negative

Pediatric Rheumatology recommends completing the workup:

Antinuclear antibody (ANA)	Negative
Rheumatoid factor (RF)	Negative
HLA-B27	Negative
Lyme serology	Negative

Differential Diagnosis

Suspected Condition	Clinical/Imaging	Status
Malignancy (bone, haematological)	No weight loss/night sweats/structural abnormality	Excluded
Septic arthritis / Osteomyelitis	Afebrile, clear ultrasound	Excluded
Lyme arthritis	Negative serology, no tick exposure	Excluded
Systemic rheumatologic disease	Negative work up (ANA, RF, HLA-B27)	Less likely
Extra-intestinal manifestation of celiac disease		Underlying Dx
Recurrent transient synovitis		Most likely

Discussion

Conclusion

- Although transient synovitis is usually self-limiting and benign, **recurrence should not be reassuring**.
- **Repeated episodes**, especially with involvement of large joints, should **raise suspicion** for early inflammatory arthritis or, in the appropriate context, an infectious cause.
- **Follow-up** is essential to detect an atypical course and avoid delay in diagnosing underlying disease.

References:
1. Uziel, Y., Butbul-Aviel, Y., Barash, J., Padeh, S., Mukamel, M. et al. (2006) 'Recurrent transient synovitis of the hip in childhood: longterm outcome among 39 patients', *Journal of Rheumatology*, 33(4), pp. 810–811.
2. Asche, S.S., van Rijn, R.M., Bessems, J.H.J. et al. (2013) 'What is the clinical course of transient synovitis in children: a systematic review of the literature', *Chiropractic & Manual Therapies*, 21, p. 39.
3. Sawyer, J.R. and Kapoor, M. (2009) 'The limping child: a systematic approach to diagnosis', *American Family Physician*, 79(3), pp. 215–224.

Paediatric Tick-Borne Encephalitis Despite Completed Vaccination

Zimnickaite E[1], Schöbi N[2], Duppenthaler A[2], Agyeman PKA[2], Barbani MT[3], Aebi C[2]

[1]Department of Paediatrics, Inselspital, Bern University Hospital, University of Bern, Switzerland;
[2]Division of Paediatric Infectious Diseases, Department of Paediatrics, Inselspital, Bern University Hospital, University of Bern, Switzerland;
[3]Institute for Infectious Diseases, University of Bern, Switzerland
emilija.zimnickaite@insel.ch

Background

Tick-borne encephalitis (TBE) is a potentially severe viral infection of the central nervous system and is endemic in many parts of Europe. As no specific antiviral treatment is available, vaccination remains the most effective preventive measure [1]. Although TBE vaccines are highly efficacious, breakthrough infections may occur for reasons that are not yet fully understood [2]. Identifying paediatric TBE vaccine breakthrough infections is essential for timely diagnosis, appropriate management, and follow-up.

Case Nr. 1

9-year old girl presented with repeated vomiting on an empty stomach, fever, headache and intermittent strabismus. She had gastrointestinal symptoms for one week prior to admission. Brain MRI showed mild bilateral supratentorial leptomeningeal enhancement. Cerebrospinal fluid (CSF) analysis revealed pleocytosis (see Table 1). CSF multiplex PCR (Biofire®) and tests *Borrelia burgdorferi were* negative. At one month follow-up, neurological symptoms had largely resolved, with mild behavioral changes such as irritability. The patient had received a full 3-dose TBE immunization series 3 years earlier and was at a summer camp in a TBE endemic region 5-12 days prior to the onset of illness.

Case Nr. 2

14-year old female adolescent presented with progressive headache, vomiting, bilateral leg weakness, dizziness, diplopia, and a slight fever for 5 days. MRI showed diffuse supra- and infratentorial leptomeningeal enhancement. CSF analysis demonstrated pleocytosis (see Table 1). CSF multiplex PCR (Biofire®) and antibody tests for *Borrelia burgdorferi were* negative. CSF CXCL-13 was bordeline. Clinical deterioration with radiculomyelitis on repeated MRI prompted high-dose corticosteroid therapy associated with gradual improvement. At 1.5-year follow-up, the patient had largely recovered, with only occasional exercise-induced paresthesia. The patient had received a full 3-dose TBE immunization series 6 years earlier and lived in a TBE endemic region.

Material	Parameter	Healthy person [3]	Typical TBE findings [1]	Case Nr. 1	Case Nr. 2
CSF	Cell count (cells/µl)	< 5	100	240	346
	Cell predominance	-	initially polymorphonuclear, in later stages mononuclear	57% polymorphonuclear	90% mononuclear
	Protein (g/l)	< 0.5	normal to moderately increased	0.38	0.66
	Lactate (mmol/l)	0.9–2.7	< 3.5	2.08	2
	Glucose (mmol/l)	>60% of plasma value	normal to slightly decreased	4.42	3.23
	Intrathecal TBE antibodies	negative	positive	inconclusive	IgM positive
Serum	TBE serology (U/mL)	negative	IgG negative/positive, IgM >150	IgG >3,000, IgM positive (1.4)	IgG >3,000, IgM positive (21.7)
	TBE NS1 IgG antibodies	negative	positive	positive	initially negative, positive after 4 months
Urine	PCR	negative	positive in some patients	not done	negative

Table 1. Characteristics of CSF and serum findings of healthy patient, typical TBE case and 2 index patients.

Conclusion

- TBE should remain a differential diagnosis despite vaccination in patients, presenting with compatible symptoms in endemic regions.
- The presence of serum/CSF IgM with high serum IgG andseroconversion for NS1 IgG are indicators of vaccine failure.

References
[1] Lindquist L, Vapalahti O. Tick-borne encephalitis. The Lancet. 2008 May;371(9627):1861–1871
[2] Andersson CR, Vene S, Insulander M, Lindquist L, Günther G. Vaccine failures after active immunisation against tick-borne encephalitis. Vaccine. 2010 Mar;28(16):2827–31.
[3] Tumani H, Petereit HF. Lumbalpunktion und Liquordiagnostik. S1-Leitlinie, AWMF-Registernummer 030/141. Deutsche Gesellschaft für Neurologie (DGN) in Zusammenarbeit mit der Deutschen Gesellschaft für Liquordiagnostik und Klinische Neurochemie (DGLN); 2026 Mar.

Beyond the Tropics:
Recognising arboviral infections in the pediatric traveller

Pediatric Emergency Department (SAUP), Department of Paediatrics,
University Hospital of Geneva
Rougier A, Hauri G, Faundez T

Introduction

- Arboviral infections: such as dengue, chikungunya, Zika, Yellow Fever, and West Nile virus now pose challenges in temperate regions, including Europe
- Their spread is driven by climate change, global mobility, and the expansion of Aedes mosquitoes
- In children, symptoms are often non-specific and resemble flu-like illness

Case study

8 year old boy, consult the emergency room after returning from a trip to the Carribean for fever since 3 days with headache, myalgia, arthralgia, retro-orbital pain

Physical examination multiple mosquito bites, maculopapular rash "Island of white in a sea of red"

Lab workup leucopenia, thrombopenia

Dengue

Symptoms
- High fever
- Severe headache
- Retro orbital pain
- Myalgia
- Arthralgia

Physical Examination
- Rash "Island of white in a red sea" *see picture*
- Pharyngeal erythema
- Cervical lymphadenopathy
- Hepatomegalie

After 7 days, most of people will recover.
But…

⚠ **Severe dengue manifestations:**

•2-4% of dengue cases (high probability in case of reinfection, without prior vaccination)
•Occurs after the fever has subsided
•Dengue hemorrhagic fever or shock syndrome

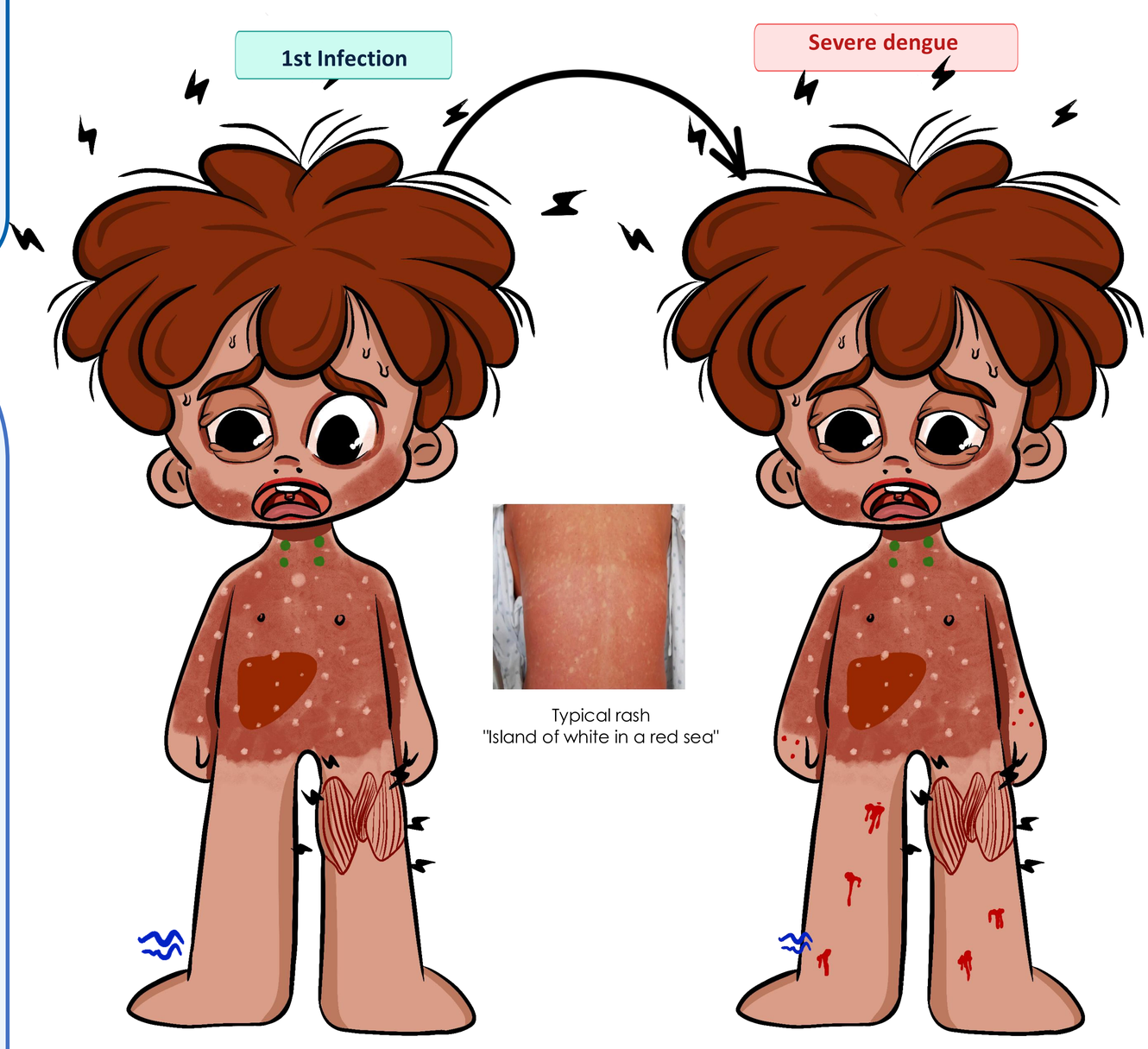
- **Dengue hemorrhagic fever:** capillary leakage, elevated hematocrit, and coagulopathy
- **Dengue shock syndrome:** hypovolemic shock

Diagnostic
Rapid test: antigen NS1 (D1-9) and IgM (D4)
PCR in the viremic phase (D1-D6)
Serology: IgM positive from D4 - IgG positiv from D14

Treatment Supportive treatment

NO NSAID / Aspirin

Illustration of the dengue symptoms



Typical rash
"Island of white in a red sea"

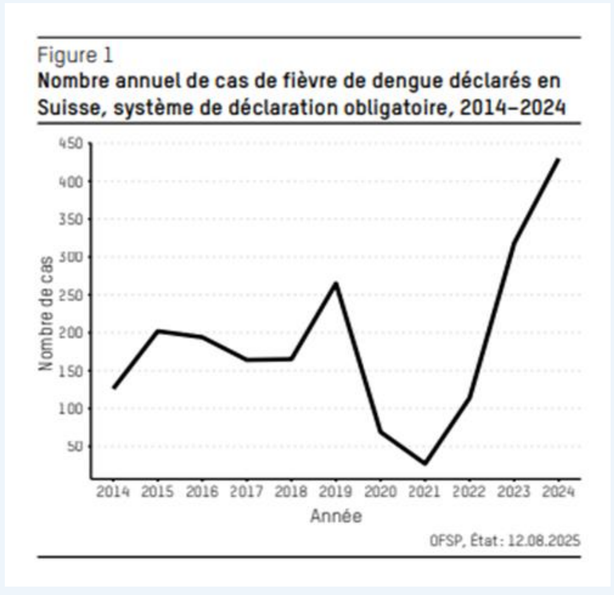
Vaccination

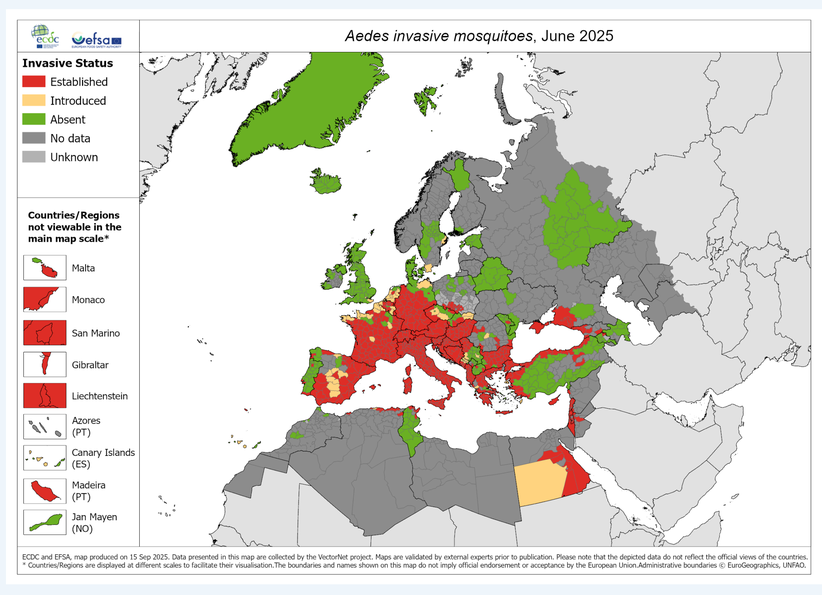
Vaccination is recommended only for travellers who have evidence of previous dengue infection and who will be exposed in a region with significant dengue transmission.

In seronegative patient it can increase the risk of sever dengue

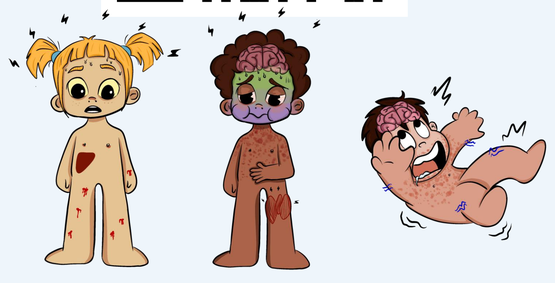
Conclusion

- In 2024, the Federal Office of Public Health recorded 429 dengue cases, a record compared to 318 in 2023.
- We are pleased to provide you with the pocket guide we have developed, which can be accessed by scanning the QR code.
- This card is intended as an aid tool and does not, under any circumstances, replace the local protocols in force. We disclaim any responsibility for its use.





Scan for pocket guide



•Pang, M., Sun, X.-z., He, T., Yang, H. and Chen, J. (2025), Clinical Manifestation of Arboviruses in Paediatrics. Rev Med Virol, 35: e70016. https://doi.org/10.1002/rmv.70016
•Christie CDC, Lue AM, Melbourne-Chambers RH. Dengue, chikungunya and zika arbovirus infections in Caribbean children. Curr Opin Pediatr. 2023 Apr 1;35(2):155-165. doi: 10.1097/MOP.0000000000001229. Epub 2023 Feb 22. PMID: 36801979; PMCID: PMC10090388.
•https://www.revmed.ch/revue-medicale-suisse/2016/revue-medicale-suisse-517/arboviroses-emergentes-quelle-demarche-diagnostique-chez-les-voyageurs
•https://www.ecdc.europa.eu/en/publications-data/aedes-invasive-mosquitoes-current-known-distribution-june-2025
•https://www.infovac.ch/docs/public/dengue/infections-au-virus-zika-dengue-chikungunya-du-nil-occidental-et-fievre-jaune-suisse-2024.pdf

Illustration by
FEEMAIN

Severe imported Plasmodium falciparum malaria in an adolescent in Switzerland

Lydia Mavraki[1], Gaëtan Zwingli[1], Nikola Passiouk[1], Rahel Erlacher[2]

[1] Service de Pédiatrie, Hôpital du Jura, Delémont
[2] Service d'Infectiologie, UKBB, Bâle

Introduction

- Malaria remains a global health problem and is encountered in non-endemic countries as an imported infection.
- **Severe** *P. falciparum* malaria may initially present with non-specific symptoms in children, delaying diagnosis and treatment.

Case presentation

PATIENT

15-year-old boy, recently migrated from Cameroon, with no significant past medical history

SYMPTOMS

Two-day history of intermittent fever, chills, headache, fatigue, loss of appetite

VITAL SIGNS

Temperature: 38.8°C
Heart rate: 110 bpm
SpO2 on room air: 98%
Blood pressure: 128/68 mmHg

PHYSICAL EXAMINATION

Cold extremities, dry mucous membranes, no focal signs

LABORATORY FINDINGS

Parameter	Value	Reference range
Hemoglobin (g/l)	128	135-175
Hematocrit (%)	37	39-55
White blood cell count (x10⁹/l)	4.3	4-10
Platelets (x10⁹/l)	65	150-400
CRP (mg/l)	130	<5
Total bilirubin (umol/l)	**64**	<21
Direct bilirubin (umol/l)	10	<5
INR	1.3	0.8-1.1
Creatinine (umol/l)	71	<106
Urea (mmol/l)	3.5	3-9
AST (U/l)	22	<40
ALT (U/l)	15	<45
LDH (U/l)	231	135-225
Venous blood gas	Normal	
Urine analysis	Normal	

DIAGNOSIS

- Positive malaria rapid antigen test
- Microscopy (thick and thin smear): **P.falciparum with 1% parasitemia**

EVOLUTION

- Clinical deterioration with hemodynamic instability

WHO Severe Malaria Criteria	Presence in our patient
Extreme weakness	X
Impaired consciousness	X
Repeated seizures	X
Respiratory distress	X
Circulatory collapse	✓
Jaundice/Total bilirubin>50 umol/l	✓
Abnormal bleeding	X
Pulmonary oedema	X
Macroscopic hemoglobinuria	X
Severe anemia	X
Hypoglycemia	X
Hyperlactataemia	X
Acute kidney injury	X
Acidosis	X
Hyperparasitaemia >2%	X

- Transfer to tertiary PICU

TREATMENT

- Fluid-refractory shock
  - Intravenous norepinephrine for 24 hours
- Single dose of vitamin K
- Intravenous artenusate
- Cautious fluid management
- Laboratory deterioration on day 2
  - Empiric antibiotic therapy with intravenous ceftriaxone
- Step-down to oral artemether/lumefantrine
- Transfer to the pediatric ward on day 3

Discharge after 7 days of hospitalisation, without sequelae.

Discussion

- Malaria should be suspected in any febrile child returning from endemic regions.
- Severe malaria may occur despite low parasitemia.
- Although severe disease occurs in a minority of cases, early recognition of severity criteria is crucial, as deterioration may occur rapidly.

Conclusion

- Prompt recognition of severe disease and appropriate triage remain key determinants of outcome in pediatric malaria.

References

1 Giannone B et al. Imported malaria in Switzerland (1990–2019): a retrospective analysis. Travel Med Infect Dis.2022;45:102251.
2 Wagner N et al. Prise en charge du paludisme chez l'enfant en Suisse. Rev Med Suisse. 2012;8:340.