Allergie et premiers pas dans l’alimentation :
Influence des régimes spécifiques (riche en poissons, évictions)

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Conflits d’intérêts
5 dernières années

• Laboratoires (consultant, symposium, invitation à congrès) :
  – GSK (2015)
  – Chiesi (2015)
  – ALK (2016)
  – Astra Zeneca (2016)
  – Bausch + Lomb (Chauvin) (2019)
  – Mead Jonhson (2019)

• Autre(s), (consultant, site internet) :
  – Mutualité Française (2015)

• Participations financières dans le capital d’une société :
  – Stallergènes Greer
Pourquoi s’intéresser aux poissons ?

• Poissons, huile de poissons riches en **omega-3**, s’opposent à l’action des omega-6
• ↑omega-6 acides gras polyinsaturés (PUFAs) => ↗des maladies allergiques
• Omega-3 pourraient protéger contre les sensibilisations et manifestations allergiques.

Miles EA, Calder PC. Can Early Omega-3 Fatty Acid Exposure Reduce Risk of Childhood Allergic Disease? Nutrients. 2017 Jul 21;9(7).
• Omega 3 (trouvés dans les poissons comme saumon, truite, maquereau, thon frais (pas en boîte) contribuent à limiter le risque d’eczéma et de sensibilisations allergiques.

• ... Les femmes enceintes ne devraient pas consommer plus de deux portions de poissons gras par semaine (en raison des polluants contenus dans les poissons gras, le thon frais cuit doit être limité à 140 g)
Consommation de poissons pendant la grossesse et asthme, rhinite, allergies

• Prévention chez l’enfant à venir ?
  – De l’asthme et la rhinite allergique ¹
  – Des allergies ²

• Pas d’effet

Consommation de omega-3 LCPUFA pendant la grossesse et sensibilisations et maladies allergiques

• Maternal supplementation with 900 mg of ω-3 LCPUFA did not change the progression of IgE-mediated allergic disease symptoms or sensitization throughout childhood from 1 to 6 years.

Consommation poissons pendant la première année de vie et eczéma, rhinite

• Reduced:
  – the risk of eczema (RR 0.61; 95% CI 0.47, 0.80; p = 0.0003)
  – allergic rhinitis (RR 0.54; 95% CI 0.36, 0.81; p = 0.003).

• High-quality and adequately powered RCTs are warranted to confirm this.

Consommation poissons pendant les premières années de vie et asthme

• introduction of fish 6-9 months and regular consumption of all fish (at least once a week) reduces asthma and wheeze in children up to 4.5 years old,
• Fatty fish intake may be beneficial in older children.

Consommation huile de poisson pendant les premières années de vie et allergie alimentaire

• **food sensitization lower** in children who received regular fish oil supplementation (Relative Risk: 0.51, 0.32-0.82).

• **challenge-confirmed food allergy** was also **reduced**, although **not statistically significant** (RR: 0.57, 0.30-1.12).

• fish oil **< 6 months** significantly **more protected** than those who began later (P = .045 for sensitization, P = .018 for allergy).

• **allergy severity decreased** with increased fish oil consumption (P = .013).

Clausen et al Fish oil in infancy protects against food allergy in Iceland-Results from a birth cohort study. Allergy. 2018 Jun;73(6):1305-1312
Influence des régimes spécifiques : (rique en poissons, évictions)

• Poissons et huiles de poissons :
  – Grossesse ?
  – Enfants : effet préventif sur rhinite, asthme, eczéma, allergies alimentaires

• Evictions :
  – Prévention des allergies
  – Injustifiées

Bidat E 2019
Éviction et prévention des allergies … au revoir !

- « the concept of primary prevention has been until recently - mostly guided by the dogma that allergen avoidance is the most effective measure … It is clear now that these concepts need to be revised » (1)
- Scientific rationale for Finnish Allergy Programme 2008-2018: emphyasis on prevention and endorsing tolerance (2)

2. von Hertzen et al. Allergy 2009; 64: 678-701
Acquisition de la tolérance aux aliments : La fenêtre de tolérance

- Facteurs pour la tolérance
  - Microbiote digestif
  - Génétique
  - Allergène (nature, dose, intervalle, préparation, voie d’exposition)
  - Perméabilité intestinale/pH
  - LM prolongé
  - Autres (stress ?, AG?, anti-oxydants?)

The importance of early complementary feeding in the development of oral tolerance : concerns and controversies.
Prescott SL et al. PAI 2008 : 19 : 375-80
Oral tolerance, food allergy, and immunotherapy : Implications for future treatment. Burks W et al. JACI 2008 ; 121 : 1344
Le microbiote dépend du régime (fibres, diversité) …

JACI 2018;141:30-40
Eviction et prévention des allergies alimentaires

• L’éviction n’est pas conseillée
• Il faut diversifier entre 4-6 mois :
  – « aliments à risques » ?
  – Tous les aliments ?
  – À quel rythme ?
Development of atopic dermatitis according to age of onset and association with early-life exposures

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Background: Environmental factors can affect the development of atopic dermatitis, and this was described to be already effective during pregnancy and in early life. An important early postnatal exposure is nutrition, although its association with allergic disease remains unclear.

Objective: We sought to determine prospectively whether early postnatal exposures, such as the introduction to complementary food in the first year of life, are associated with the development of atopic dermatitis, taking into account the reverse causality.

Methods: One thousand forty-one children who participated in the Protection Against Allergy–Study in Rural Environments birth cohort study were included in the current study. Atopic dermatitis was defined by a doctor’s diagnosis reported by the parents of children up to 4 years of age, by questionnaires, and/or by positive SCORAD scores from 1 year of age and according to the age of onset within or after the first year of life. Feeding practices were reported by parents in monthly diaries between the 3rd and 12th months of life.

Results: The diversity of introduction of complementary food in the first year of life was associated with a reduction in the risk of having atopic dermatitis with onset after the first year of life (adjusted odds ratio for atopic dermatitis with each additional major food item introduced, 0.76; 95% CI, 0.65-0.88). The introduction of yogurt in the first year of life also reduced the risk for atopic dermatitis (adjusted odds ratio, 0.41; 95% CI, 0.23-0.73).

Conclusion: As early-life exposure, the introduction of yogurt and the diversity of food introduced in the first year of life might have a protective effect against atopic dermatitis. (J Allergy Clin Immunol 2012;130:130-6.)

Cohorte, cahiers hebdomadaires, introduction des aliments 3-12 mois, « reverse causality », eczéma 1 à 4 ans

JACI 2012; 130 : 130-6.
IMPORTANCE DE LA DIVERSITÉ

Eczéma > 1 an, groupes d’aliments introduits < 1 an

6 groupes d’aliments :
- légumes et fruits
- céréales
- pain
- viande
- gâteau
- yogourt

Increased food diversity in the first year of life is inversely associated with allergic diseases

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Zurich, Basel, and Davos, Switzerland; Munich, Ulm, and Marburg, Germany, Kuopio, Finland, Schwarzwald, Austria, and Besançon, France

Background: The role of dietary factors in the development of allergies is a topic of debate, especially the potential associations between infant feeding practices and allergic diseases. Previously, we reported that increased food diversity introduced during the first year of life reduced the risk of atopic dermatitis.

Objective: In this study we investigated the association between the introduction of food during the first year of life and the development of asthma, allergic rhinitis, food allergy, or atopic sensitization, taking precautions to address reverse causality. We further analyzed the association between food diversity and gene expression of T-cell markers and of Ce germline transcript, reflecting antibody isotype switching to IgE, measured at 6 years of age.

Methods: Eight hundred fifty-six children who participated in a birth cohort study, Protection Against Allergy Study in Rural Environments/EFRAIM, were included. Feeding practices were reported by parents in monthly diaries during the first year of life. Data on environmental factors and allergic diseases were collected from questionnaires administered from birth up to 6 years of age.

Results: An increased diversity of complementary food introduced in the first year of life was inversely associated with asthma with a dose-response effect (adjusted odds ratio with each additional food item introduced, 0.74 [95% CI, 0.61-0.89]). A similar effect was observed for food allergy and food sensitization. Furthermore, increased food diversity was significantly associated with an increased expression of forkhead box protein 3 and a decreased expression of Ce germline transcript.

Conclusion: An increased diversity of food within the first year of life might have a protective effect on asthma, food allergy, and food sensitization and is associated with increased expression of a marker for regulatory T cells. (J Allergy Clin Immunol 2014;133:1056-64.)

Key words: Asthma, food allergy and sensitization, food diversity, children

Nutrition is an important environmental factor in early life that influences the development of the child’s immune system. The role of nutrition during infancy on the development of allergies later in childhood remains controversial. Moreover, reverse causality is always a matter of concern.
IMPORTANCE DE LA DIVERSITÉ

Score de diversité alimentaire : 6 items alimentaires majeurs : fruits et légumes, céréales, pain, viande, gâteau et yaourt

A

Asthme

Allergies alimentaires

The variety of cheese consumed in early life could influence the immune system, through microbial components and by anti-inflammatory compounds (short-chain fatty acids).

Sophie Nicklaus, Divaret-Chauveau A et al. The protective effect of cheese consumption at 18 months on allergic diseases in the first 6 years. Allergy 2019
Food diversity in infancy and the risk of childhood asthma and allergies

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Background: Recently, the bacterial diversity of the intestinal flora and the diversity of various environmental factors during infancy have been linked to the development of allergies in childhood. Food is an important environmental exposure, but the role of food diversity in the development of asthma and allergies in childhood is poorly defined. Objective: We studied the associations between food diversity during the first year of life and the development of asthma and allergies by age 5 years. Methods: In a Finnish birth cohort we analyzed data on 3142 consecutively born children. We studied food diversity at 3, 4, 6, and 12 months of age. Asthma, wheeze, atopic eczema, and allergic rhinitis were measured by using the International Study of Asthma and Allergies in Childhood questionnaire at age 5 years. Results: By 3 and 4 months of age, food diversity was not associated with any of the allergic end points. By 6 months of age, less food diversity was associated with increased risk of allergic rhinitis but not with the other end points. By 12 months of age, less food diversity was associated with increased risk of any asthma, atopic asthma, wheeze, and allergic rhinitis. Conclusion: Less food diversity during the first year of life might increase the risk of asthma and allergies in childhood. The mechanisms for this association are unclear, but increased dietary antigen exposure might contribute to this link. (J Allergy Clin Immunol 2014;133:1084-91.)

\textbf{Key words:} Asthma, allergic rhinitis, atopic eczema, wheeze, food diversity, children

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Faible diversité alimentaire :

3, 4 mois \hspace{1cm} RAS
6 mois \hspace{1cm} rhinite allergique
12 mois \hspace{1cm} asthme, asthme atopique, sifflements, rhinite allergique
<table>
<thead>
<tr>
<th>General population</th>
</tr>
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<tbody>
<tr>
<td>- Complementary foods (including allergenic foods) from around 6 months.</td>
</tr>
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</table>

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<tr>
<th>High risk infants with eczema (particularly early-onset or moderate–severe eczema) or food allergy</th>
</tr>
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<tbody>
<tr>
<td>- Introduction of egg and peanut from 4 months.</td>
</tr>
<tr>
<td>- The benefits of allergy testing prior to introducing egg and peanut should be balanced against the risk of a delayed introduction.</td>
</tr>
</tbody>
</table>
- Traditions and feeding patterns in the population on types of complementary foods should be considered.
- Complementary foods ≥4–6 months.
- Allergenic foods ≥4 months.
- Infants at high risk of peanut allergy (severe eczema, egg allergy or both) should introduce peanut between 4 and 11 months; following evaluation by an appropriately-trained professional.
« Respecter les habitudes et traditions »

1,85 %

Allergie arachide 4-11 ans

0,17 %

Consommation arachide 8-14 mois (gr/mois)

UK 5171 enfants
Israël 5615 enfants

Influence des régimes spécifiques : (riche en poissons, évictions)

• Poissons et huiles de poissons :
  – Grossesse ?
  – Enfants : effet préventif sur rhinite, asthme, eczéma, allergies alimentaires

• Evictions :
  – Prévention des allergies
  – Injustifiées
Eviction injustifiée : perte de tolérance

• 24 cas rapportés
• Eczéma, sensibilisation à l’aliment, pas d’amélioration sous régime, poursuite de l’éviction, lors de la réintroduction :
  – David : 4 chocs
  – Larramendi : anaphylaxie
  – Flinterman : anaphylaxie
  – Barbi : décès

Barbi E et al. Recents Patents on Inflammation & Allergy Drug Discovery 2008;2:212-4
Que faire en cas d’éviction injustifiée

• rappeler qu’une exclusion rigoureuse peut entraîner une perte de tolérance, et parfois un accident grave, voir fatal, lors de la réintroduction.
• rappeler qu’un régime carencé en calcium est source d’ostéoporose précoce.
• plutôt que condamner le régime, équilibrer les apports nutritionnels.
• proposer une introduction lente du ou des aliments exclus pour « faciliter l’acquisition de la tolérance » ou pour « éviter la perte complète de tolérance ».

E. Bidat 2019
Influence des régimes spécifiques : (riche en poissons, évictions)

• Poissons et huiles de poissons :
  – Grossesse ?
  – Enfants : oui

• Evictions :
  – Prévention :
    • Favoriser la diversité
    • Respecter les habitudes culturelles
  – Injustifiées :
    • …
SAVE THE DATE

Xème SYMPOSIUM CICBAA
CERCLE D'INVESTIGATIONS CLINIQUES ET BIOLOGIQUES EN ALLERGOLOGIE ALIMENTAIRE

Bruxelles 2020
31 Janvier et 1er Février 2020