Interactions and support improve the outcome of asthma teaching. Therefore, we developed a new teaching concept especially tailored for children and parents, including action plan, asthma quality of life questionnaire and a booklet. It explains in an easy and illustrative way the various symptoms and the classification of asthma. It also advises children and parents how to avoid common triggers. Antiasmatic drugs are described, with emphasis on difference between acute and chronic medication, as well as different inhalation techniques. The teaching sessions for asthmatic children and their parents last 1x90 minutes. It has been worked out by hospital and practice pediatricians, pediatric and specialized nurses, and a physiotherapist to better answer personal needs of children and parents with the following objectives: recognition of asthma attacks, adequate use of medications to avoid emergency visits, hospitalizations and school absences. During teaching sessions, the interaction between families is stimulated and allowing also teaching by peers, which confers a membership and support feeling. Our presentation will detail the working-out and the first experiences with asthma education in Valais. Such an education programme is important to decrease morbidity of asthma in children.

Recurrent spontaneous pneumothorax: treatment by simple talc poudrage under videothoracoscopy and local anesthesia

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Patient 1: A 14-year-old boy presented with left complete pneumothorax which was drained by a chest tube. However, the pneumothorax recurred almost every time the drain was clamped. After 8 days of unsuccessful attempts, a videothoracoscopy was performed under local anesthesia. Surprisingly, many blebs and bullae were discovered on both the apical and basal regions of the lung parenchyma. Taic (1 g) was gently sprayed over the visceral pleura. The patient was discharged after 4 days but relapsed 8 days later and was treated by surgical pleurectomy. No skin lesions or signs of Marfan syndrome were observed and alpha 1-antitrypsin deficiency was also excluded. Despite a negative family history for recurring pneumothorax or renal cancers, Birt-Hogg-Dubé syndrome is suspected and results of FLCN gene analysis are pending.

Patient 2: A 15-year-old boy suffered from left complete pneumothorax, successfully drained by a chest tube. Five months later a new pneumothorax occurred controllately, on the right lung, and was successfully treated by the same technique, which showed again bullae on the lung parenchyma. Taic (1 g) was gently sprayed over the visceral pleura. The patient was discharged after 4 days but relapsed 8 days later and was treated by surgical pleurectomy. No skin lesions or signs of Marfan syndrome were observed and alpha 1-antitrypsin deficiency was also excluded. Despite a negative family history for recurring pneumothorax or renal cancers, Birt-Hogg-Dubé syndrome is suspected and results of FLCN gene analysis are pending.

Take home message: Simple talc poudrage under videothoracoscopy is a safe minimvasive technique to control persistent or recurrent pneumothorax, allowing, in case of relapse, to perform surgical pleurectomy or with but without bullae, Recurrent spontaneous pneumothoraces in children should make one consider a genetic etiology, such as Marfan syndrome or the cancer-prone Birt-Hogg-Dubé syndrome.

Association between breastfeeding and lung function in childhood

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Aim: It has been postulated that breastfeeding may influence lung development in children, but findings are inconclusive. Some studies reported even a protective effect in school-age children of asthmatic mothers (Gulibert, AMJRCCM, 2007). We examined this relationship in a large population-based cohort.

Method: Breastfeeding and its duration were recorded at enrollment in 1998 in children from a population-based cohort study in Leicestershire, UK. Lung function was assessed by spirometry (FVC, FEV1, and FEF50) after several years in a nested sample (N = 1005) of children aged 9–13. Lung function in breastfed and non-breastfed children was compared using linear regression adjusting first for anthropometric factors (height, weight, age, and sex) and then also for potential confounders (birth weight, ethnicity, maternal asthma and parental smoking). Cut-offs of 3 months and 6 months for breastfeeding duration and effect modification by maternal asthma were also tested.

Results: Of the 1005 children in the sample 673 (67%) were breastfed, 363 (36%) for over 3 months and 222 (22%) for over 6 months; 176 (17%) children had asthmatic mothers. We found no difference between breastfeeding children who were breastfed or not breastfed when adjusting for anthropometric factors: FVC(L) 2.58 vs. 2.62 (p = 0.06); FEV1 (L): 2.24 vs. 2.27 (p = 0.19); FEV1/FVC(%): 86.9 vs. 86.3 (p = 0.18) and FEF50(Ls): 2.92 vs. 2.88 (p = 0.45). Results remained similar after adding children who were breastfed or not breastfed when looking at children breastfed for >3 months or >6 months. There was little evidence for effect modification by maternal asthma (all p-interaction >0.09).

Conclusion: In our dataset breastfeeding was not associated with lung function assessed by spirometry at school age. Importantly, we found no evidence for a harmful effect of breastfeeding in children with asthmatic mothers.

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Use of NSAIDS compared to paracetamol as potential risk factors for asthma

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Introduction: Use of paracetamol has been associated with an increased risk of asthma in several epidemiological studies. In contrast, it has been suggested that non-steroidal anti-inflammatory drugs (NSAIDs) might be protective (Kanabar, Clin Ther 2007), but data relating to these drugs are scarce.

Methods: Prevalence of asthma and intake of analgesics in the past 2 years were assessed by questionnaire in 2008 in young adults (≥16 years) diagnosed with cancer between 1976 and 2003 (Swiss Childhood Cancer Survivor Study). In a multivariate logistic regression we analysed the association between asthma and intake of paracetamol only, NSAIDs only or their combination, adjusting for age, sex, cancer diagnosis, cancer therapy and time since diagnosis.

Results: Of the 1293 participants (response rate 68%), 83 (6%) reported asthma and 845 (65%) intake of analgesics in the past 2 years. Of these, 257 (29%) took paracetamol only, 224 (25%) NSAIDs only, 312 (35%) a combination of both and 52 (6%) other analgesics. Adjusted Odds ratios for asthma were 2.2 (95% CI 1.0-4.7; p = 0.04), 1.9 (9.0–4.3; p = 0.12) and 2.9 (1.4–6.1; p <0.01) in those using paracetamol only, NSAIDs only or their combination respectively.

Conclusion: These cross-sectional data in a selected population do not support a protective effect of NSAIDs against asthma, neither taken alone nor in combination with paracetamol. All analgesics were positively associated with reported asthma episodes in the past two years. This can be explained by reverse causation, with intake of analgesics being a result rather than a cause of asthma events. Randomised controlled trials in unscreened populations are needed to clarify the direction of causation.

Validating of the Tucson asthma predictive index in an independent cohort

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Introduction: The loose and stringent asthma predictive indices (L_API and S_API; Castro-Rodriguez AJRCCM 2000), very popular clinical decision rules for children, need validation. We assessed the predictive performance of the API in an independent cohort and compared it with the simple predictor “frequency of wheeze”.

Methods: 3155 3-year old children from a population-based cohort study in Leicestershire (UK) were classified as being at no, medium (L_API) or high (S_API) risk for later asthma. We then assessed odds ratios for asthma were 2.2 (95% CI 1.0-4.7; p = 0.04), 1.9 (9.0–4.3; p = 0.12) and 2.9 (1.4–6.1; p <0.01) in those using paracetamol only, NSAIDs only or their combination respectively.

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Conclusion: These cross-sectional data in a selected population do not support a protective effect of NSAIDs against asthma, neither taken alone nor in combination with paracetamol. All analgesics were positively associated with reported asthma episodes in the past two years. This can be explained by reverse causation, with intake of analgesics being a result rather than a cause of asthma events. Randomised controlled trials in unscreened populations are needed to clarify the direction of causation.
Liver transplantation for inborn errors of metabolism in children: the Geneva experience
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Background: Liver transplantation (LT) is accepted as the treatment of choice for inborn errors of metabolism (IEMs) that are difficult to manage medically or are associated with end-organ damage secondary to toxic metabolites.

Aim: The aim of this study was to evaluate retrospectively the outcomes of the pediatric cohort transplanted in Geneva for IEMs.

Methods: The Geneva transplant registry was queried for LT and IEMs in children. This cohort was then analyzed according to demographic parameters, pre- and post transplant variables, and long term outcomes including actuarial survival, associated renal transplantation, and special diet post LT.

Results: 16/100 patients required LT for IEMs (16%). Indications were similar to published series from other centers (4 had Wilson's disease = 25%). Median age at transplant was 9 years (0.5–17) in contrast to 15.5 years for the overall cohort. No living-related transplants were performed for IEMs. Actuarial survival was 90% for the overall cohort (n = 100) and 88% for the IEM cohort (p = ns). There were 2 early deaths owing to acute, non-metabolic complications (12.5%). Median follow up was 8.9 yrs. 2/16 patients with oxalosis (12.5%) required associated renal transplantation. Patients with oxalosis or OTC deficiency were maintained on specific diets post LT with the view to optimize metabolic stability during growth and development. No patient required re-transplantation. Patients requiring phototherapy pre-LT for Crigler Najjar syndrome were maintained post LT.

Summary and conclusion: LT for IEM is an acceptable therapeutic option offering good actuarial survival in our center. Further studies are required 1) to determine optimal timing for transplant to minimize the need for combined transplants 2) to establish the necessity for post LT dietary restrictions in patients with IEMs.

Assessment of Autoimmune Interpretation of a Rapid Celiac Assay in a Ward Setting
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Celiac Disease (CD) is an autoimmune condition that can cause several preventable diseases. To prevent these complications, prevention is recommended. The goal of this study was to determine if a rapid Celiac assay performed in a ward setting could add value to the diagnostic process.

Methods: Patients were enrolled at the pediatric Department of the Hospital of Geneva. Local ethical committee approval was granted. Criteria for inclusion, apart from signed informed consent, were clinical symptoms suggestive of CD, known CD or first-degree relatives of CD patients. Intestinal biopsy and genetic test were not recommended. A total of 122 patients were sequentially submitted for CD testing, identified as a Randomized Controlled Trial (1:1 ratio). Patients were determined with the CD-LFIA assay based on the detection of: a) IgG against tissue transglutaminase (tTG) and tissue transglutaminase (TTG), and b) CD antibodies against deamidated gliadin peptides (DGP) and total IgA was evaluated. Whole-blood sample results were compared to anti-transglutaminase (tTG) and total IgA determination.

Results: A total of 122 patients were sequentially submitted to CD testing using ELISA and CD-LFIA devices. A positive CD seroprevalence was found in 17 patients (13.9%) of which 10 were new CD patients and 7 were known CD patients with good GFD. CD-LFIA results included siblings and a diagnosis of biliary atresia. Education was predictive of better adaptation at 2 yrs. Fathers scored higher than mothers for performance at all time points. Conclusions: In this representative cohort, we show that there is a trend toward increasing psychomotor impairment post LT, confirming the findings of others. Novel findings include: parental education has unpredictable effects on CD peri-transplant, maternal functioning is more severely affected than paternal, and employment and siblings aid in the recovery of maternal functioning.

A successful intervention to increase immunization and protection in liver transplanted children: tailored recommendations based on serologies
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Despite well established vaccine recommendations for solid organ transplanted patients, children referred for orthotopic liver transplantation (OLT) in Geneva, Switzerland, were not vaccinated optimally. In 2002, new guidelines recommended to base catch-up immunization schedules on serum antibody titers against vaccine-preventable diseases assessed before and after OLT. We measure here the results of this intervention by comparing vaccine coverage and antibody titers in patients <10 yrs (pre-2000–2002) and the post-2002 (2002–2008), P2 intervention cohorts, P1 children (n = 44, 57% female, mean age at OLT 4.4yr, range 0.6–16.8yr) and P2 children (n = 30, 47% female; mean age at OLT 4.5yr, range 0.5–16.5yr) were evaluated.

At the pre-OLT visit, DT, Streptococcus pneumoniae (SPn) and MMR serologies were checked more frequently in P2 than P1 children (P = 0.001, <0.001 and 0.021 respectively). More P2 than P1 patients were up-to-date for DTAP (70% vs 43%, P = 0.023) and MMR (74% versus 44%, P = 0.013) or had received at least one dose of HBV, HAV, SPn and VZV vaccines (P = 0.001, 0.011, <0.001 and 0.029 respectively). In patients to whom pre-OLT catch-up immunizations were recommended, HBV, HAV, SPn and MMR and VZV serologies were assessed more frequently in P2 (P <0.001, <0.001, 0.0013 and <0.001 respectively). Pre-OLT antibody titers were higher in P2 patients for D, T and HAV (P = 0.007, 0.011 and 0.016 respectively). One year post-OLT, DT, SPn, MMR and VZV serologies were more frequently checked in P2 children (P <0.001, <0.001 and 0.159 respectively). Antibody titers were higher in P2 for D, T and HAV (P <0.001, 0.008 and 0.009 respectively). Confounding factors such as gender, age at OLT or diagnosis did not explain these differences. Among P2 patients, pre- and post-OLT titers for D, T, Hb, HBV, SPn14 and SPn19 were correlated (P = 0.025, 0.05<, 0.006, 0.045 and 0.013 respectively); however, there was no influence of pre- or post-OLT titers on titers after post-OLT booster immunization. Protection against vaccine-preventable diseases of high-risk children such as OLT patients may be significantly improved by tailored recommendations using serologies to vaccine-preventable diseases.