

Pulmonary physiology unit for babies :

The pediatric pulmonology service at Sainte-Justine UHC needs to purchase an additional component for one of its facilities (plethysmographic box for babies) for its pulmonary function laboratory. This component, on the cutting edge of technology, is used to study lung function of young preschoolers.

The cost of this equipment is \$ 32,050.

ADD-ON TO THE PEDIATRIC PLETHYSMOGRAPH

It is critical that pathologies such as congenital malformations, and chronic respiratory diseases like asthma, bronchopulmonary dysplasia and cystic fibrosis, be diagnosed and treated early, ideally at the start of lung growth. As a result, many young Québécois need to undergo a spirometry test called FVC (forced vital capacity) to test for these diseases.

Infant plethysmograph

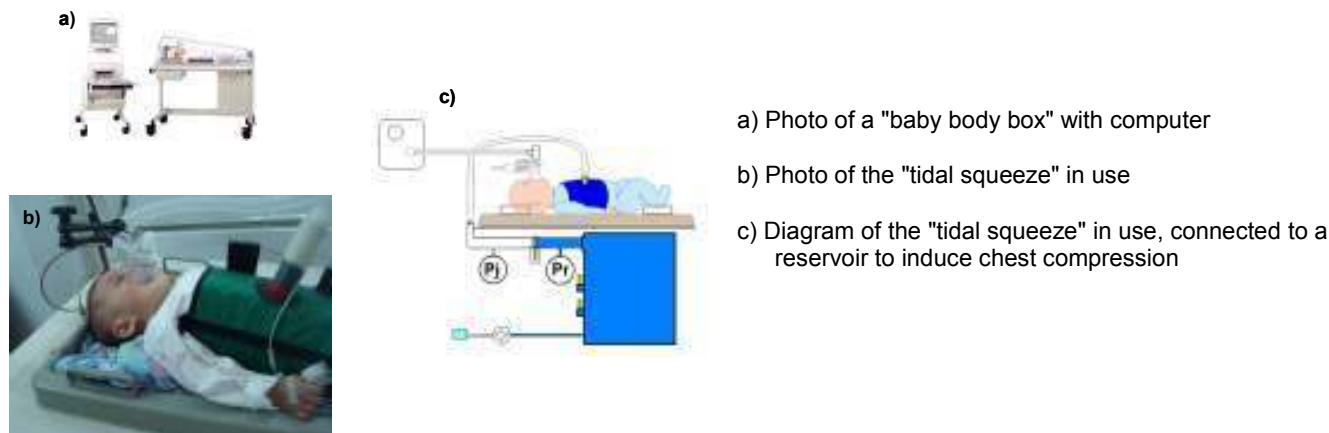
The pediatric respirology department at Centre hospitalier universitaire Sainte-Justine recently acquired an infant plethysmograph (baby body box or BBB) for its pulmonary function lab. This leading-edge instrument will be used to study the pulmonary function of preschool-aged children. Figure 1 a) shows a photo of a BBB.

"Tidal squeeze" add-on

The FVC test involves forcefully exhaling by compressing the chest and abdomen. While older children can produce this type of movement at the doctor's request, this is impossible between birth and 2 years of age. To compensate for this fact, a new method was introduced called the "tidal squeeze," an add-on to the BBB that must be used with specific software. Currently, infant pulmonary function tests are not available anywhere in Québec or in eastern Canada.

Because CHU Sainte-Justine's pulmonary function lab treats infants, the "tidal squeeze" add-on will be required. Figure 1 c) shows a diagram of how the "tidal squeeze" works. This add-on will be used to study pulmonary function in preschool-aged children (including infants), which will be helpful as there is a distinct lack of sensitive and reproducible diagnostic tools for evaluating pulmonary function in children in this age range. This acquisition would enable CHU Sainte-Justine to perform the FVC test on children aged 0-2 in order to then provide them with the best possible care.

Figure 1: Illustration of the BBB plethysmograph and the "tidal squeeze" add-on



Cost of the "tidal squeeze" add-on: \$32,050

We sincerely hope to partner with you to make a difference in the lives of numerous children and families across Québec.

Apnea monitors

Patients with [Pierre Marie Robin syndrome](#) must have this equipment to receive treatment at home. Pierre Robin syndrome is a malformation syndrome that results in cleft lip palate, the tongue falls to the back of the oral cavity and abnormal mandibular development. These defects result in moderate to severe respiratory disorders.

The total cost for the purchase of the equipment is **\$ 70,000**.

Causality

Obstructive sleep apnea is a serious respiratory disorder that causes a person to stop breathing during sleep, which could result in death. It affects infants with certain pathologies such as:



Airway obstruction

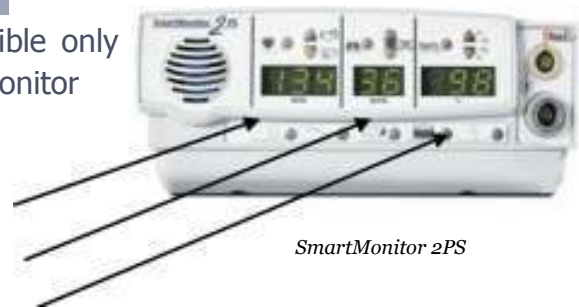
- Pierre Robin sequence, characterized by three congenital malformations of the mouth and face. Breathing difficulties in this case are related to the posterior retraction of the tongue, and lack of muscle tone at the base of the tongue, the pharynx and sometimes the larynx.

- Down syndrome.
- Insufficient weight gain, etc.

Management

Strict hospital monitoring. Surgery is possible only in certain cases. The main parameters to monitor are:

- Pulse
- Respiration
- Oxygen saturation



SmartMonitor 2PS

At-home monitoring

At-home monitoring is appropriate only under certain conditions:

- Monitoring of main parameters: SmartMonitor 2PS
- 24/7 telephone access (home care)
- Periodic medical visits



The home care department needs 10 SmartMonitor 2PS devices in order to offer patients the option of at-home management and monitoring.

Breast milk pump for feeding

Neonatology currently uses outdated equipment to deliver milk to babies. The CHU Sainte-Justine therefore needs to replace its fleet of 80 booster pumps for neonatology.

The total cost of this project is \$ 200,000. Kurling for Kids will buy seven of these pumps for \$ 17,500.



CHU Sainte-Justine
Le centre hospitalier
universitaire mère-enfant

Pour l'amour des enfants

Université
de Montréal

Gavage de lait maternel

Breast milk remains the first choice for newborns because of its exceptional benefits, which are unsurpassed by any other type of milk.



The goal is to support the nutritional status of premature infants and babies who cannot feed normally.

Tube feeding with breast milk consists in giving the infant the milk through a tube inserted in the mouth or nose.



The tube feeding equipment releases the breast milk at a very precise rate (between 2 and 60 mL/h) and is equipped with a milk reservoir set at a 30-degree angle to ensure the milk fat is distributed proportionally during feeding.



The support of Kurling for Kids, and the generosity of the many partners and players in this tournament will allow Sainte-Justine's young patients to benefit from today's most advanced treatments and technology...and enjoy the highest possible standard of care.

Thank you for taking action.

Thank you for helping us build a healthy future for our children.