



CHILDREN'S & WOMEN'S HEALTH CENTRE OF BRITISH COLUMBIA

Department of Anesthesia
British Columbia Children's Hospital
4480 Oak Street
Vancouver, BC
V6H 3V4
Tel 604 875 2711
Fax 604 875 3221

SUBJECT INFORMATION AND CONSENT FORM

Title of Study:

Emergence Delirium in Children: Total Intravenous Anesthesia with Propofol and Remifentanyl versus Inhalational Sevoflurane Anesthesia.

Principal Investigator:

Dr. Carolyne Montgomery
Department of Anesthesia
BC Children's Hospital
Telephone: 604-875-2711

24-hour Emergency Telephone
Number:

604-875-2161
Ask to page the anesthesiologist on
call.

Co-Investigators:

Dr. John Chandler
Ms. Disha Mehta
Department of Anesthesia
BC Children's Hospital
Telephone: 604-875-2711

Dr JM Ansermino
Dr C Reichert
Ms M Misse

1. INTRODUCTION

You are invited to have your child participate in this study because he/she is undergoing an operative procedure that requires a general anesthetic. We are investigating the differences between two standard general anesthesia techniques.

2. YOUR PARTICIPATION IS VOLUNTARY

Your child's participation is entirely voluntary, so it is up to you to decide whether or not to have your child participate. Before you decide, it is important for you to understand what the research involves. This consent form will tell you about the study, why the research is being done, what will happen to your child during the study, and the possible benefits, risks, and discomforts.

If you do decide to have your child participate, you will be asked to sign this form. You are still free to withdraw at any time and without giving any reasons for your decision.

If you choose not to be involved or to withdraw your child from the study, you do not have to tell us why. The medical care that your child will receive as a participant in this study will not be any different or less than the care he/she would normally receive. Please take time to read this information and ask any questions that may help you understand the study before you decide whether or not to be in the study.

3. BACKGROUND

Children having an anesthetic in BC Children's Hospital are sent to sleep and kept asleep during the operation using one of two common anesthetic methods. The first uses an intravenous (IV) injection (through a small plastic tube inserted in a vein) of a combination of two anesthetic medications, Propofol and Remifentanyl. This technique is called total intravenous anesthesia, or TIVA. The alternate method to anesthetize children is by breathing an anesthetic gas, Sevoflurane, which is given by a mask. TIVA is a newer method than Sevoflurane that has been used safely in children for over ten years. Both methods are safe and accepted techniques. However, as with any anesthetic medication or administration technique, each method has advantages and disadvantages.

For this study, we are interested in measuring emergence delirium (ED). ED is a side effect that some children may experience during the first 30 minutes or so after they first wake up from anesthesia. All anesthetic agents can cause ED. An episode of ED may include symptoms such as restlessness, excitation, refusal to follow commands, and, very rarely, memory impairment. In certain instances these symptoms can lead to patients becoming very upset and hurting themselves, e.g., by pulling out drips. These episodes typically last 2–10 minutes. Children developing ED are treated with intravenous sedative medication to relax and calm them.

We are interested in determining if ED occurs equally after Sevoflurane and TIVA anesthesia. Previous studies allow us to estimate that ED occurs in about 30% of children receiving Sevoflurane anesthesia. We do not know how commonly it occurs when TIVA is used. Sevoflurane is more commonly used than TIVA in North American children's hospitals.

No rigorous scientific studies have compared the incidence of ED associated with TIVA and Sevoflurane anesthesia. Therefore, we do not know with any

confidence which anesthetic is better to use in children. We are conducting this study to conclusively show the differences between Sevoflurane anesthesia and TIVA. The results of this study will help reduce the incidence of ED and inform safe anesthetic practice in the future.

When most new drugs are introduced, studies by the drug manufacturer have only been done in adults. These drugs are still used in children but are termed an “off label” use of the drug. For this study, propofol is considered off-label for children less than 3 years old. More than half of the drugs routinely used in children are used off label. When using drugs “off label” in research we need approval from the Canadian Government. This study has been approved by the Therapeutics Product Directorate of Health Canada.

4. WHY IS THIS STUDY BEING DONE?

This study will help us to determine which of two standard anesthetic techniques for children is associated with a lower incidence of emergence delirium.

5. WHO CAN PARTICIPATE IN THE STUDY?

In order to participate in the study, your child must be aged 2–6 years and be undergoing strabismus repair or surgery with a standard general anesthetic. Your child’s anesthesiologist will determine whether your child is eligible.

6. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

Children who are taking behaviour-altering medications or have been diagnosed with neurological and/or psychiatric conditions will not be included. Children with abnormal fat or carbohydrate metabolism should not participate. Also, if your child has been seen in the pre-admission clinic, your child should not participate.

5. WHAT DOES THE STUDY INVOLVE?

The study is taking place in the operating rooms (OR) of British Columbia Children’s Hospital. We will recruit 190 subjects for the entire study.

Your child will be assessed as meeting the inclusion criteria and will be placed into either the group receiving TIVA or the group receiving Sevoflurane. The group your child is placed in will be decided randomly, as with the flip of a coin. In surgical daycare, before entering the OR, your child will receive acetaminophen (Tylenol) and ibuprofen (Advil) by mouth for pain management. A numbing cream will be applied to the skin that will numb the site for IV placement. This is all part of our existing standard practice.

If your child is assigned to the TIVA group, an intravenous catheter (IV – a small skinny plastic tube in the vein) will be inserted in the OR. Your child will go to

sleep with an injection through this IV. If your child is in the Sevoflurane group, your child will go to sleep by breathing the gas through a mask. One parent will be with your child until he or she goes to sleep.

After falling sleep, your child will be given some intravenous pain medication (Fentanyl) and also a medicine to prevent nausea and vomiting after surgery. (Ondansetron), regardless of which group he or she is in. These are also standard medications routinely given at this hospital.

In addition to standard monitoring, children in this study will receive a sensor designed to measure how “sleepy” he/she is during the procedure. This sensor has 3 sticky pads, which attach to the forehead, very similar to the electrocardiogram (ECG) stickers placed on the chest and used for monitoring the heart. It picks up the normal electrical activity in the brain and gives out a reading of the effect of the anesthetic. These sensors are being used specifically for this study because they will allow us to better manage the level of anesthesia. They will be applied once your child is asleep.

After the procedure is completed, your child will be taken to the post-anesthetic care unit (PACU), as is routine practice.

We will observe and record your child’s behaviour in the PACU after he/she wakes up. You (one parent) will be allowed into the PACU as soon as your child is awake and the PACU nurses have determined that it is safe for you to be there. Your child will be assessed for signs of pain and ED using special scoring systems. The scoring system for pain (FLACC) is routinely used in PACU. The system used to measure ED (PAED) is being used especially for this study. If your child is in pain he/she will receive pain-relieving medications and will be excluded from further study.

If your child shows signs of ED (defined as a PAED score of greater than 10 out of 20 points) they shall receive a sedative medication to calm them. Your child will receive the same standard of care as if he/she were not participating in the study.

6. WHAT ARE THE POSSIBLE HARMS AND SIDE EFFECTS OF PARTICIPATING?

The adhesive on the depth of anesthesia sensor may leave some small red marks on your child’s forehead, which should disappear in less than one hour.

Both the Sevoflurane and TIVA medications used in this study are recognized as routine methods of going to sleep and staying asleep, so the risk is that of having an anesthetic. Being part of this study adds no further risk to the anesthetic.

You do not get to choose which anesthetic your child will receive.

7. WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

There are no direct benefits to your child's participation in this study. The information we obtain from the study will be used to advise anesthesiologists in the future. There is no financial reimbursement for participation.

8. WHAT HAPPENS IF I DECIDE TO WITHDRAW MY CONSENT TO PARTICIPATE?

Your child's participation in this research is entirely voluntary. You may withdraw your child from this study at any time. If you decide to enter your child in the study and withdraw at any time in the future, there will be no penalty or loss of benefits to which you and your child are otherwise entitled, and your child's future medical care will not be affected.

If you choose to enter the study and then decide to withdraw at a later time, all data collected about your child during his/her enrolment in the study will be retained for analysis. By law, this data cannot be destroyed.

9. WHAT HAPPENS IF SOMETHING GOES WRONG?

By signing this consent form you are in no way waiving your or your child's legal rights or releasing the investigator or anyone else from their legal and professional responsibilities.

10. CAN MY CHILD BE ASKED TO LEAVE THE STUDY?

The study doctor(s)/investigators may decide to discontinue the study at any time, or withdraw your child from the study at any time, if they feel that it is in your child's best interests.

11. WHAT WILL THE STUDY COST ME?

There will be no additional cost to you for your child's participation in the study. You will not be charged for any research procedure. You or your child will not receive any remuneration/reimbursement for participation.

12. WILL MY CHILD'S PARTICIPATION IN THIS STUDY BE KEPT CONFIDENTIAL?

Your child's confidentiality will be respected. No information that discloses your child's identity will be released or published without your specific consent to the disclosure.

Research records and medical records identifying your child may be inspected, in the presence of an Investigator or his or her designate, by representatives of the UBC Research Ethics Board or Health Canada, for the purpose of monitoring the research. However, records that identify your child by name or initials will

be kept in a locked cabinet and will not be allowed to leave the Investigators' offices. Copies of relevant data, which identify your child only by code number, may be required by regulatory agencies. However, your child will not be identified by name, initials, or date of birth as part of this study data.

13. WHO DO I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY DURING MY CHILD'S PARTICIPATION?

If you have any questions or desire further information about this study before or during your child's participation, you can contact Dr. Montgomery at 604-875-2711.

14. WHO DO I CONTACT IF I HAVE ANY QUESTIONS OR CONCERNS ABOUT MY CHILD'S RIGHTS AS A SUBJECT DURING THE STUDY?

If you have any concerns about your child's treatment rights as a research subject, please contact the Research Subject Information Line at the University of British Columbia Office of Research Services at 604-822-8598.

15. CONSENT TO PARTICIPATE

I have read or have had read to me all of the above. I have had enough time to consider entry to the study. All of my questions have been answered to my satisfaction. I understand that my child's participation is entirely voluntary and that he/she may refuse to participate, or I may withdraw my child from the study at any time.

The parent(s)/guardian(s) and the investigator are satisfied that the information contained in this consent form was explained to the child to the extent that he/she is able to understand it and that all questions have been answered.

I acknowledge having received a signed and dated copy of this consent form for my own records.

Name of Subject: _____

Printed name of subject's parent / Legally acceptable representative	Signature	Date
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Printed name of witness	Signature	Date
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Printed name of principal investigator/ Designated representative	Signature	Date
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