

## TITLE

**BUTTON BATTERY INGESTION - PEDIATRIC**

## SCOPE

Provincial: Emergency Departments and Urgent Care  
Centres

## DOCUMENT #

HCS-288-01

## APPROVAL AUTHORITY

Vice President, Provincial Clinical Excellence

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## SPONSOR

Emergency Strategic Clinical Network

## REVISION EFFECTIVE DATE

Non applicable

## PARENT DOCUMENT TITLE, TYPE, AND NUMBER

Not applicable

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**NOTE:** The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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**OBJECTIVES**

- This Protocol is intended for pediatric **patients** who present to an Emergency Department (ED) or Urgent Care Centre (UCC) with suspected or confirmed **button battery** ingestion.
- To assist **health care professionals** when implementing specific diagnostics, therapeutics, and interventions for pediatric patients, prior to the initial Physician or Nurse Practitioner (NP) assessment.

**PRINCIPLES**

Button battery ingestions can be devastating and are considered a greater risk of esophageal injury if retained greater than two (2) hours. Each hour that passes increases the risk of severe esophageal injury.

Clinical presentation may vary according to the size and type of battery, the residual charge in the battery, time of ingestion, patient age, size, and medical co-morbidities.

Recommend urgent involvement of Pediatric Gastrointestinal (GI) and Surgical Services for treatment.

**APPLICABILITY**

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, students, volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

## ELEMENTS

### 1. Points of Emphasis

- 1.1 The health care professional shall immediately notify the Physician or NP of any pediatric patient that presents with a suspected or confirmed button battery ingestion.
- 1.2 This Protocol may be implemented when:
  - a) there may be a delay in Physician or NP initial assessment; and
  - b) the pediatric patient is in an appropriate location to manage ongoing assessment and reassessment.
- 1.3 All pediatric patients presenting with suspected or confirmed button battery ingestion are considered a surgical emergency. The Physician or NP should consult a Pediatric Gastrointestinal or Ear, Nose, and Throat Specialist via Referral, Access, Advice, Placement, Information & Destination (RAAPID) to facilitate patient transfer to the nearest children's hospital within two (2) hours of arrival within the ED or UCC.
- 1.4 A patient-specific **order** from a Physician or NP is required to implement this Protocol. This order authorizes the administration of all medications and interventions within this Protocol. This process ensures immediate Physician or NP notification of the presence of a patient with a button battery ingestion.
- 1.5 Consider consultation with Poison and Drug Information Service (PADIS), as appropriate.
- 1.6 Weigh or use a length-based resuscitation tape measure for all pediatric patients. Reported weights are not accepted.

### 2. Inclusion Criteria

- 2.1 This Protocol shall be implemented for any pediatric patient presenting with suspected or confirmed button battery ingestion.

### 3. Exclusion Criteria

- 3.1 This Protocol is not intended for:
  - a) **adult** patients; or
  - b) unstable or actively bleeding pediatric patients.

#### 4. Assessment and Treatment

- 4.1 Confirmed or suspected esophageal button battery ingestion needs urgent removal and shall be triaged at a minimum Canadian Triage and Acuity Scale (CTAS) Level 2.
- 4.2 The health care professional shall:
- a) complete a patient assessment including a provocation, quality, radiation, severity, and time (PQRST) assessment of the pain and associated symptoms. Obtain a full set of vital signs, including blood pressure, temperature, pulse, respiratory rate, and oxygen saturation (refer to the *AHS Assessment and Reassessment of Patients* Guideline [ESCN]);
  - b) as soon as reasonably practicable, obtain the following diagnostic imaging (refer to Section 1.4 above):
    - (i) posteroanterior (PA) or anteroposterior (AP) and lateral chest X-ray;
    - (ii) AP supine radiograph of abdomen; and
    - (iii) AP and lateral neck radiograph.
      - If access to an urgent x-ray is not available (e.g., within one [1] hour), do not delay the transfer of the pediatric patient.
  - c) for stable witnessed or suspected/unwitnessed ingestion:
    - (i) if ingestion of button battery is less than or equal to 12 hours:
      - give two (2) teaspoons (10 milliliters) of honey every 10 minutes (up to six [6] doses); or
      - give one (1) gram (5 milliliters of 200 milligram per milliliter [mg/mL]) of sucralfate every 10 minutes (up to three [3] doses). Note that sucralfate may leave a white esophageal coating and limit endoscopic visualization.
  - d) consult Pediatric Specialty for direction if ingestion of button battery is greater than 12 hours or the timeframe of ingestion is unknown prior to giving anything orally;
  - e) keep nil per os (NPO), other than as outlined in Section 4.2(c) above; and
  - f) start one (1) large bore intravenous (IV) saline lock.

## 5. Documentation

- 5.1 The health care professional shall document the following on the patient's **health record**:
- a) if known, record the battery size and the number of batteries ingested;
  - b) implementation of this Protocol, including notification of Physician or NP and calls for transfer;
  - c) assessments;
  - d) reassessments;
  - e) interventions; and
  - f) the pediatric patient's response to interventions.

## DEFINITIONS

**Adult** means a person 18 years and older.

**Button battery** means small batteries that are usually used to power small electronic devices or watches. They get their name because they are round and resemble buttons or coins. A button cell is a small single cell battery shaped as a squat cylinder typically 5 to 25 mm (0.197 to 0.984 in) in diameter and 1 to 6 mm (0.039 to 0.236 in) high — resembling a button. A metal can forms the bottom body and positive terminal of the cell.

**Health care professional** means an individual who is a member of a regulated health discipline, as defined by the *Health Professions Act*, and who practices within scope or role.

**Health record** means the collection of all records documenting individually identifying health information in relation to a single person.

**Order** means a direction given by a regulated health care professional to carry out specific activity(-ies) as part of the diagnostic and/or therapeutic care and treatment to the benefit of a patient. An order may be written (including handwritten and or electronic), verbal, by telephone, or facsimile.

**Patient** means an adult or child who receives or has requested health care or services from Alberta Health Services and its health care providers or individuals authorized to act on behalf of Alberta Health Services. This term is inclusive of residents, clients and outpatients.

## REFERENCES

- Alberta Health Services Governance Documents:
  - *Assessment and Reassessment of Patients* Guideline ESCN (#HCS-181-01)
  - *Consent to Treatment/Procedure(s)* Policy (#PRR-01)
  - *Intraosseous Vascular Access* Protocol (#HCS-231-01)

- Massive Transfusion Protocols
- Alberta Health Services Resources:
  - *Button Battery Ingestions in Children: A Clinical Care Pathway for Child Health, Alberta Health Services* (May 2021)
- Non-Alberta Health Services Documents:
  - *National Capital Poison Centre Button Battery Ingestion Triage and Treatment Guideline* (National Capital Poison Center)

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