



IAEM Clinical Guideline

# Laundry Detergent Capsule Exposure Guideline

Version 1.2

September 2024

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**To reference this document please reference as:**

Mc Suibhne É. Laundry Detergent Capsule Exposure Guideline. IAEM Guidelines 2024. <https://iaem.ie/professional/clinical-guidelines/> (accessed 2<sup>nd</sup> September 2024).

## **DISCLAIMER**

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

## Revision History

Date	Version	Section	Summary of changes	Author
August 2016	V1.0	All	Final version	E. Mc Suibhne
April 2019	V1.1	Front cover	Removed guideline number	C. Briant
September 2024	V1.2	All Front cover Contents	Updated formatting Added guideline referencing information Added table of contents	C. Briant C. Briant C. Briant

## CONTENTS

GLOSSARY OF TERMS .....	4
INTRODUCTION .....	5
PARAMETERS .....	7
AIM .....	7
MANAGEMENT OF INGESTIONS .....	8
COMPANION DOCUMENTS .....	10
LINKS TO USEFUL WEBSITES .....	10

## GLOSSARY OF TERMS

Coag	Coagulation profile
CXR	Chest x-ray
ECG	Electrocardiogram
FBC	Full blood count
LDC	Laundry detergent capsules
U&E	Urea and electrolytes
VBG	Venous blood gas

# Laundry Detergent Capsule Exposure Guideline

## INTRODUCTION

Laundry Detergent capsules (e.g. Liquitabs) are household domestic products usually packaged as small, brightly coloured concentrated detergent sachets. While manufacturer's contents may vary, the majority of laundry detergent capsules contain a combination of agents, of which include, an anionic detergent (20-30%), a non ionic detergent, propylene glycol (15 – 20%), and ethanol (2 – 5%) and a cationic surfactant. These agents are dissolved in water to form an alkaline solution.<sup>1,2</sup>

A large UK case series<sup>3</sup> has demonstrated the following:

- Most patients are <5 years old (96.1%)
- Exposure to liquid detergent capsule results in
  - Ingestion alone in 80% of cases
  - Eye contact alone in 9% of cases causing
    - Conjunctivitis
    - Eye pain
    - Keratitis
- Skin contact alone in 1% of cases

Severity of ingestion exposure may range from mild oedema of the arytenoids to ulceration of the oesophagus and gastro-oesophageal junction to subglottic oedema with resulting soft subglottic stenosis at follow up.<sup>4</sup>

Liquid detergent capsule exposure: Symptom, in order of likelihood	
1	Vomiting
2	Coughing
3	Nausea
4	Drowsiness
5	Rash
6	Diarrhoea
7	Pulmonary congestion/bronchospasm
8	Stridor
9	Abdominal pain
10	Pharyngitis/oesophagitis
11	Increased saliva production
12	Chemical burn

## PARAMETERS

### Target audience:

Health-care professionals engaged in the care of infants and children presenting to the Emergency Department.

### Patient population:

Children 1 to 16 year, with acute exposure to laundry detergent capsules who require immediate assessment and management.

## AIM

To provide an evidence based guideline on the management of paediatric patients presenting to the ED with exposure (splash and ingestion) to laundry detergent capsules.

## MANAGEMENT OF INGESTIONS

1. Establish history of laundry capsule exposure.
2. Assess, examine and consider the major symptoms as described in the management flow chart.
3. Activated charcoal is contraindicated.
4. Gastric lavage is not recommended.
5. If resuscitation is required, perform an ABC assessment and treat as per APLS guidelines.
6. **Always assess the airway.**
  - If a supraglottic – epiglottic burn is noted, seek expert airway input (anaesthetics) as a priority.
  - If erythema, oedema and burns of the mouth, lips or pharynx are present this is usually a sign that further oedema will occur that may lead to airway obstruction. It is an indication for consideration of early intubation.
7. If you have **any concern** there may be airway involvement or ulceration:
  - Do an erect Chest X-ray +/- PFA (supine & decubitus).
    - Erect Chest X-ray is not always possible in the very young.
  - Provide supportive management.
    - Intravenous fluids and analgesia.
  - A surgical assessment and consideration for an early endoscopy/ CT are recommended.
  - Give broad-spectrum antibiotics if proven perforation.
  - The use of antacids, intravenous H2 antagonists or proton pump inhibitors has not been studied in detail but if given in the early stages they may help to reduce the extent of corrosive injury.



**See the rapid reference management flow charts for the management of:**

1. [Link to Ingestions management flow chart](#)
2. [Link to Skin exposure management flow chart](#)
3. [Link to Eye exposure management flow chart](#)

## **NOTE**

Although no cases have been documented, ulceration may be sufficiently severe to cause perforation with complications including mediastinitis, pneumonitis and cardiac injury. The depths of the burns are usually much greater with alkalis, and may continue to develop some time after exposure. The arytenoids, epiglottis and oesophagus are particularly vulnerable to exposure after ingestion.<sup>6</sup> A decrease in GCS has been documented to occur up to 4-6 hours post exposure.<sup>5</sup>

In patient with GCS of 15

- Observe for 6 hours and monitor vitals.
- Do a 12 lead ECG to assess QRS and QT intervals.
- Repeat 12 lead ECGs are recommended, especially in symptomatic patients.

In patient with GCS of less than 15

- Take bloods including FBC, U&E, COAG and VBG.
- Do a 12 lead ECG.
- Complete primary and secondary assessment.

## COMPANION DOCUMENTS

- [Link to Parent Information Leaflet](#)
- [Link to References and Evidentiary Table](#)

## LINKS TO USEFUL WEBSITES

1. <https://www.toxbase.org/>
2. <http://www.rch.org.au/clinicalguide>
3. <http://www.alsg.org/home/>