

## **Toxicology module awareness campaign**

**Name of Faculty:** Faculty of Pharmacy

**Name of module:** Toxicology (Pharm D: PCL407 & Pharm DC: PCLc407).

**Degree year:** Four

**Nature of student activity:** Awareness campaign among BUE students

**Name of campaign:** "Everyday toxic exposures"

**Under supervision of:**

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### **Summary:**

A total of 309 students enrolled in degree year 4 in Pharm D and Pharm D clinical programs participated in an awareness campaign as part of a graded project in Toxicology module; (Code: PCL407 & PCLc407). The awareness campaign was conducted on campus **from Sunday 26<sup>th</sup> of November to Thursday 30<sup>th</sup> of November, 2023**).

This activity aimed to raise awareness among BUE community regarding the toxic substances we encounter in our daily lives and served as a way of giving back to the community from the knowledge acquired in our module.

The student-led campaign contributed to the United Nations Sustainable Development Goals (SDGs), specifically SDG 3 "Good Health and Well-Being" and SDG 4 "Quality Education," by fostering educational opportunities through community-centered activities and raising public awareness about mitigating everyday toxic exposures to improve health conditions.

### **Topics covered:**

- **Toxicity from house-hold materials:**  
*Cooking utensils, electronic wastes, plastic materials, and cleaning products.*
- **Toxicity from personal products:**  
*Cosmetics, skin products, nail polish, toothpaste, and e-cigarettes.*
- **Toxicity from food and drinks:**  
*Energy drinks, nuts toxicity, honey, undercooked meat, canned food, and mercury in seafood.*
- **Toxicity from common drugs:**  
*NSAIDs, paracetamol, cortisone, bodybuilding supplements, and chemotherapeutics.*

**Samples of student photos:**



Samples of student flyers:

Toxicity of skin products



## Toxicity of e-cigarettes

### 1 What are they composed of?

- Propylene glycol (PG): toxic with certain dose of exposure
- Glycerol: its combustion generates known toxic and carcinogenic emissions
- Concentrated flavours
- Nicotine: highly addictive substance



#### Short-term side effects

- Coughing
- Shortness of breath
- Eye irritation
- Headache
- Dry mouth and throat
- Nausea



#### Long-term side effects

- Asthma
- Lung scarring
- Organ damage
- Addiction
- Seizures
- Strokes

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### 3 Protective measures & precautions



- Educate yourself about the hazardous effects of e- cigarettes.
- Set a quitting date
- Seek encouragement from family and friends.
- Identify the triggers that prompts the desire to use e-cigarettes
- Replace with healthier alternatives such as chewing gum or exercising.
- Reduce your nicotine intake
- Do not use THC-containing e-cigarettes or vaping products.
- Avoid using informal sources, such as friends, family or online dealers to obtain a vaping device.
- Do not modify/add any substances to a vaping device that are unintentional by the manufacturer.

### Are e-cigarettes less harmful than regular cigarettes?

Yes—but that doesn't mean e-cigarettes are safe. E-cigarette aerosol generally contains fewer toxic chemicals than the deadly mix of 7,000 chemicals in smoke from regular cigarettes. However, e-cigarette aerosol is not harmless. It can contain harmful and potentially harmful substances, including nicotine, heavy metals like lead, volatile organic compounds, and cancer-causing agents.

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### Risk of the device



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Many e-cigarettes use lithium batteries because they can store a large amount of energy in a compact space. However, the inherent characteristics of lithium batteries can pose a risk of fire and explosion. Poor design, use of low-quality materials, manufacturing flaws and defects, and improper use and handling can all contribute to a condition known as "thermal runaway," whereby the internal battery temperature can increase to the point of causing a battery fire or even an explosion. The use of overcharging protection circuits, thermal power cutoffs, and internal overpressure relief mechanisms can help prevent and mitigate thermal runaway.

### 7 Exposure to toxic dose

PG is considered "practically non-toxic" orally, with acute lethal dose (LD50) values of 20 g/kg or greater. Signs and symptoms of acute toxicity included increased respiratory rate, loss of equilibrium, CNS depression, analgesia, coma, and death in 18 to 36 hours.

**Don't vape yourself away**



### Precautions of E-cigarettes

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- Do not use THC-containing e-cigarettes or vaping products.
- Avoid using informal sources, such as friends, family or online dealers to obtain a vaping device.
- Do not modify or add any substances to a vaping device that are not intended by the manufacturer.

## Toxicity of NSAIDs



**TOXIC EFFECTS**

**SHORT TERM**

- stomach upset with dyspepsia
- Peptic ulceration
- Renal effects
- CNS effects
- Hepatotoxicity

**LONG TERM**

Treatment of chronic conditions such as osteoarthritis, rheumatoid arthritis and acute musculoskeletal injuries.

- peptic ulcer and stomach bleeding
- Aseptic meningitis.
- urinary retention.
- Renal complications (interstitial nephritis)
- Liver toxicity, especially at high doses.

**PROTECTIVE MEASURES**

To minimize potential risks and side effects:

- Follow the prescribed dosage.
- Take with food or milk as NSAIDs can irritate the stomach lining.
- Avoid alcohol
- Drug-drug interaction.
- Limit long-term use and monitor side effects.

**WHAT IF YOU SUSPECT NSAID TOXICITY AT HOME ?**

Take immediate action, which is :


- Stop taking NSAIDs immediately, to prevent further harm.
- Drink plenty of fluids, to flush out the NSAIDs from your system.
- Avoid foods that are (spicy, greasy or acidic)
- You must adhere to the dose time, if you miss it, do not double the dose.
- Check the expiry date of the medicine.
- If you become poisoned, you must go to the nearest hospital immediately.

**NSAIDS**

**HELP**


## NSAIDS

### Uses



Relieve symptoms of :

- Headaches
- Painful periods
- Strains and sprains
- Arthritis
- Cold and flu



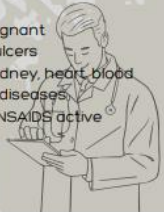
## EXPOSURE

**NSAIDS** → WITHOUT PRESCRIPTION  
→ NEED PRESCRIPTION

You should ask your doctor or your pharmacist if you are

**REMINDER**


- Over 65 years old
- Under 16 years old
- Breastfeeding or pregnant
- History of stomach ulcers
- History of any liver, kidney, heart, blood pressure and bowel diseases
- Allergic reactions to NSAIDS active constituents



## DOSE


According to age

### IBUPROFEN (BRUFEN)

**1**  Every 4 to 6 hrs


The daily limit is 1200mg, which is can't exceed 10 pills in 24 hours. Ibuprofen tablets are not recommended to children under 6 months of age.

### ASPIRIN (ASPIRIN PROTECT - ASPOCID)

**1 or 2**  Every 4 hrs

The daily limit can't exceed more than 12 pills in 24 hours, Aspirin tablets are not recommended to children aged under 16 unless on the advice of a doctor.

### CATAFLAM

**1**  Every 6 to 8 hrs

The maximum daily dose can't exceed 200mg per day. Cataflam tablets are not recommended for use in children and adolescents below 14 years of age.

## Toxicity of cleaning products

### EXPOSURE TO THE TOXIC SUBSTANCE

when: During cleaning activities

Where: At home, workplace

How: Inhalation, skin contact, ingestion

Dose: Quantity used or encountered

### PROTECTIVE MEASURES & PRECAUTIONS:

Wear protective gloves and clothing

Ensure good ventilation

Use masks or respiratory protection

Read and follow product labels

Keep products out of reach of children



### AT HOME MANAGEMENT

if one inhaled a toxic cleaning agent try to stay in open air and open all windows

if the cleaning agent came in contact with the skin wash it with soap and water

as soon as you come in

### SHORT-TERM SYMPTOMS

Respiratory irritation

Skin rashes

Eye irritation

### LONG-TERM MANIFESTATIONS:

Chronic respiratory issues

Dermatological conditions

Long-lasting eye problems

## Toxicity of canned products



### SHORT TERM EXPOSURE

- headache, nausea, vomiting and skin allergy.

### PROTECTIVE MEASURES

- Keep the container tightly closed.
- Store in a cool, dry place away from sunlight to maintain quality.
- Transfer the food to an airtight container to prevent bacterial growth.



**Yummy**  
And  
**Healthy**



### LONG TERM EXPOSURE

- Hormonal imbalance.
- Difficulty concentrating and muscle weakness.
- Increased risk of heart disease due to high concentrations of sodium.



**DO YOU THINK  
CANNED FOODS  
CAN BE  
TOXIC?**



It contains Bisphenol A used as a coating inside metal food cans