



Ocular Burns in Children

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Why in News?

A new study sheds light on the **major role played by "chuna" or slaked lime in causing ocular burns among children** in the Indian subcontinent.

- Most individuals with **acute ocular burns were male**, constituting over **80% among adults and over 60% among children**.

What is Slaked Lime?

- **About:**
 - **Slaked lime ($\text{Ca}(\text{OH})_2$)**, is obtained by **mixing quicklime (calcium oxide) with water**, resulting in a chemical reaction that **produces calcium hydroxide**.
 - The process of slaking quicklime with water is **highly exothermic**, generating a significant amount of heat.
 - It has a **high pH value**, making it highly alkaline and caustic.

Note:

- **Alkali is the Base that dissolved in water.** Base refers to a type of chemical substance that has a high pH value, typically above 7 on the pH scale.
 - **Alkalis are also known as bases** and are characterized by their ability to neutralize acids, producing salts and water in the process.
 - Common examples of alkalis include **sodium hydroxide (NaOH) and potassium hydroxide (KOH)**.
- **Acid** is a type of chemical substance that has a **low pH value, usually below 7 on the pH scale**. Acids are characterized by their ability to **release hydrogen ions (H^+) in a solution**. They can react with metals, carbonates, and bases to form salts and water.
 - Common examples of acids include **hydrochloric acid (HCl) and sulfuric acid (H_2SO_4)**.
- **Application:**
 - Slaked lime has been used for various applications throughout history, including in **construction and agriculture**.
 - It is **traditionally used as a chuna (a binding agent)** in the preparation of paan, a popular **traditional chewable mixture in South and Southeast Asia**.
- **Issue:**
 - Loose and poorly sealed packets of chuna are posing a risk of **ocular burns**. An exploding packet of chuna can cause alkali to **encounter a person's eyes, resulting in chemical burns to the ocular surface** and potentially causing severe damage.
 - Chemical burns to the **corneal limbus**, the specialized stem cell-rich area of the [cornea](#), can impair its ability to repair itself, **leading to long-term vision issues**.
- **Children At Risk:**
 - **Alkalis accounted for 38% of all ocular burns**, with chuna being the most common

alkali agent, responsible for **32% of all alkali burns** among children due to their close contact with chuna in households and in fireworks.

Note: Ocular burns refer to injuries caused by **exposure of the eye to harmful chemicals, intense heat, or radiation**, resulting in damage to the eye's surface or internal structures.

Ocular burns can be caused by various substances, such as acids, alkalis, solvents, or even exposure to high-energy sources like welding arcs or lasers.

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