सत्यमेव जयते

Ministry of Health & Family Welfare

Guidelines for Safe Handling and Use of Firecrackers in India

Trauma and Burn Division

Directorate General of Health Services

Ministry of Health and Family Welfare

Government of India

2026

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जगत प्रकाश नड्डा
JAGAT PRAKASH NADDA

सत्यमेव जयते

मंत्री
स्वास्थ्य एवं परिवार कल्याण
व रसायन एवं उर्वरक
भारत सरकार

Minister
Health & Family Welfare
and Chemicals & Fertilizers
Government of India

MESSAGE

Firecrackers have long been a symbol of joy and celebration across the globe. In the Indian context, they hold a unique and cherished place, illuminating homes and skies during festivals and special occasions. However, this tradition is often shadowed by recurring challenge of burn injuries.

Mishandling of firecrackers is a primary contributor to trauma and injury during festive seasons. From severe burns and ocular damage to complex blast injuries, these preventable incidents primarily affect the younger population, resulting in physical suffering, loss of productive life, and subsequent strain on our healthcare infrastructure.

Recognizing this, the Ministry of Health and Family Welfare is steadfast in its commitment to mitigating the risks associated with firecrackers. Our strategy is built upon three foundational pillars: Prevention, Public Awareness and Treatment Preparedness.

While the Ministry leads this endeavor through policy and standardization of care, safety remains a shared responsibility. The role of the public is essential; citizens must adhere to safety directives—such as lighting fireworks in open spaces, wearing appropriate footwear and avoiding flammable clothing-to protect themselves and their families.

By combining institutional regulations with public empowerment, we can ensure that our traditions are celebrated safely.

This publication serves as a vital guide in our collective mission to transform festive occasions into safe, injury-free celebrations for every citizen.

(Jagat Prakash Nadda)

कार्यालयः कमरा नं. 12107, 'सी' विंग, कर्त्तव्य भवन–1, नई दिल्ली–110001
Office: Room No. 12107, 'C' Wing, Kartavya Bhawan-1, New Delhi-110001
Tele.: (O): +91-11-24013301, 24013302, 24013303 • **E-mail:** min-hfm@gov.in

प्रतापराव जाधव
PRATAPRAO JADHAV

सत्यमेव जयते

आज़ादी का अमृत काल

राज्य मंत्री (स्वतंत्र प्रभार)
आयुष मंत्रालय
व
राज्य मंत्री
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार

MINISTER OF STATE
(INDEPENDENT CHARGE) OF
MINISTRY OF AYUSH AND
MINISTER OF STATE OF
MINISTRY OF HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

MESSAGE

Festivals in India are celebrated with immense joy, togetherness, and the vibrant sparkle of fireworks. While these traditions are a cherished part of our cultural expression, firecracker-related injuries, underscore the urgent need for clear, practical guidance for families, communities, and first responders.

The document “Guidelines for Safe Handling and Use of Firecrackers in India” has been developed to address this critical need. By integrating directives for safe handling with comprehensive First Aid instructions, this publication serves as a reliable roadmap for the festive season. It is designed to support caregivers and emergency personnel in ensuring that celebrations remain memorable for the right reasons—free from avoidable trauma and injury.

The strategy outlined in these guidelines focuses on empowering the public through awareness and preparedness. Safety is an essential shared responsibility; by adopting these responsible practices, we can protect our loved ones and reduce the strain on our healthcare system.

Government of India under the visionary leadership of Hon’ble Prime Minister Shri Narendra Modi ji is committed to ensure the safety and well-being of citizens in India. I believe that through the widespread adoption of these guidelines, we can move toward a future where festive joy is not overshadowed by injury. May our celebrations always remain safe, bright, and full of light.

With best wishes,

सर्वे भवन्तु सुखिनः। सर्वे सन्तु निरामयाः।

(Prataprao Jadhav)

Office : 250, 'A' Wing, Nirman Bhavan, New Delhi-110011
Tele. : 011-23061016, 23061551, Telefax : 011-23062828, E-mail : mos-health@gov.in
Residence : 23, Ashoka Road, New Delhi-110001, Tele. : 011-23740412, 23740413, 23345478
Camp office : Khasdar Jansampark Karyalay, Jijamata Krida Sankul, Buldhana, Maharashtra-443001
Telefax : 07262-247777, E-mail : prataprao.jadhav@sansad.nic.in

राज्य मंत्री
स्वास्थ्य एवं परिवार कल्याण
व रसायन एवं उर्वरक
भारत सरकार

MINISTER OF STATE
HEALTH & FAMILY WELFARE
AND CHEMICALS & FERTILISERS
GOVERNMENT OF INDIA

अनुप्रिया पटेल
ANUPRIYA PATEL

Message

It gives me immense pleasure to present the **"Guidelines for Safe Handling and Use of Firecrackers in India."** This document has been developed to address the significant national burden of burn injuries, blast trauma, ocular damage, and respiratory complications that frequently occur during the festive and celebratory use of fireworks.

While fireworks are a deeply rooted part of our cultural expression of joy, the recurring pattern of preventable harm, usually affecting children, adolescents, and bystanders necessitates a structured and proactive response. These guidelines bridge this gap by bringing together practical directions for manufacturers, evidence-based instructions for the public, and clear, decisive steps for first aid and timely medical referral.

A key focus of this publication is the transition toward a more responsible celebration. The Ministry's commitment to strengthening a culture of safety and preparedness is central to this endeavor. However, the health sector cannot achieve this in isolation. It is hoped that all stakeholders- State Health Departments, clinicians, emergency services, educators, and community organizations will actively utilize and widely disseminate these recommendations.

Safety is an **essential** shared responsibility. By collaborating closely with civil society and professional bodies, we can play a pivotal role in reducing avoidable injuries and ensuring that our festivals remain joyous and injury-free for all.

Together, let us ensure that future celebrations are remembered for their light and happiness, rather than for a tragedy.

(Anupriya Patel)

January 5, 2026
New Delhi

कमरा सं. 650, छठा तल, 'ए' विंग, निर्माण भवन, नई दिल्ली-110011, फोन : +91-11-23061998, 23062427
Room No. 650, 6th Floor, 'A' Wing, Nirman Bhawan, New Delhi-110011, Tele : +91-11-23061998, 23062427
E-mail: mosap-mohfw@gov.in

पुण्य सलिला श्रीवास्तव, भा.प्र.से.
सचिव
PUNYA SALILA SRIVASTAVA, IAS
Secretary

सत्यमेव जयते

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare

Message

Firecracker-related injuries are largely preventable when awareness, responsibility, and preparedness are present at every level, from manufacturing and regulation to household use and emergency care. These guidelines offer clear, practical advice on safe purchasing, storage, lighting and disposal of firecrackers; on recognising the specific risks of common fireworks and banned or improvised devices; and on providing prompt, correct first aid for burns, blast injuries, eye trauma and respiratory distress until definitive care is available.

States and health facilities are encouraged to integrate key messages into their information, education and communication activities, and to orient frontline workers, teachers, community leaders and the media in disseminating these safety practices ahead of major festivals. By collectively following these recommendations, we can celebrate our rich traditions while protecting the health, safety and dignity of every citizen, especially our children.

Together, these efforts will help embed a sustained culture of safe celebration, environmental consciousness and respect for the law across communities. As the Ministry remains committed to reducing preventable injuries and protecting vulnerable groups, it is envisaged that these guidelines will serve as a practical resource for policymakers, health professionals and citizens alike. With collective resolve and consistent implementation, we can keep our homes and neighbourhoods safer and healthier.

Punya Salila

(Punya Salila Srivastava)

Date : 30.1.2026
Place : New Delhi

#StopObesity

टीबी हारेगा देश जीतेगा / TB Harega Desh Jeetega

Room No. 11102, 'C' Wing, Kartavya Bhawan-1, New Delhi-110001
Tele.: (O) 011-24013601, 24013602, E-mail: secyhfw@nic.in

डॉ सुनीता शर्मा
Dr. Sunita Sharma
MD (Pathology)
स्वास्थ्य सेवा महानिदेशक
DIRECTOR GENERAL OF HEALTH SERVICES

सत्यमेव जयते

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
स्वास्थ्य सेवा महानिदेशालय
Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services

Message

Fireworks have long been part of the Indian celebrations and festivities. It is a common sight to witness a surge of burn injuries in our burn units on Diwali night or the following morning. Calling these incidents "accidents" feels unfair because so many of them could be easily prevented with basic awareness and simple common sense. It is especially heartbreaking to see young children suffer burns while they were simply enjoying their favourite festival, something they had eagerly waited for all year. This pattern highlights the urgent need for clear, focused guidelines on safe firecracker handling, along with widely shared preventive tips and basic first-aid measures to reduce avoidable harm during the celebrations.

The document "Guidelines for Safe Handling and Use of Firecrackers in India" has been developed to provide a practical guide for everyone. Since the majority of firecracker injuries occur among children and young adults, this document comes as clear directives not only for prevention but also on the steps to take when injuries happen in order to mitigate the harm. By spreading awareness and promoting responsible celebration, these guidelines seek to minimise avoidable harm and ensure that festivals remain joyful, memorable, and safe for everyone.

I thank all the experts for their invaluable contributions to this document. Their dedication will help prevent countless mishaps. I truly believe that, together, we will see the day when no one's festival is ruined because of firecracker injury. May our celebrations remain joyful, safe, and full of light.

Sharma 30.1.26

(Sunita Sharma)

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Acknowledgement

In India, occasions like Eid, Diwali, Christmas, New Year and the wedding season are marked by a wide range of celebratory activities, gatherings, and the use of fireworks. While fireworks can be enjoyed safely, it is important to be aware of the associated risks and follow proper safety measures. With firecracker related injuries being frequent and a significant proportion of cases involving young adolescents, this issue needed a focused, straightforward approach with clear guidance.

The “Guidelines for Safe Handling and Use of Firecrackers in India” is an effort to integrate preventives measure with First Aid instructions to reduce the burden of injuries associated with the mishandling of fireworks. The document is designed to provide clear directives in the form of Dos & Don’ts for general public. It not only highlights the preventive measures for the use of firecracker but also integrates guidance on first aid, emergency response, and environmental responsibility.

This document aims to support citizens, community leaders, local authorities, and healthcare providers with clear protocols on firecracker safety. Firecracker related injuries are largely preventable. We strongly believes that awareness, coupled with precaution, can transform festive moments into lasting memories rather than regrettable tragedies.

I am deeply grateful to Dr. Sunita Sharma, DGHS, MOHFW for her insightful guidance and constant support throughout the course of this work. My sincere thanks also go to Dr. RP Joshi, Addl DGHS, MOHFW for his thoughtful and thorough guidance. I wish to acknowledge with special appreciation Ms. Vandana Jain, Joint Secretary, MOHFW whose unwavering support was instrumental in advancing this endeavor.

I further extend my heartfelt thanks to the NPPMT&BI team members at Dte.GHS, Dr. Manas Pratim Roy, Dr. Sushma Adappa, Dr. Priya Redhu, and Dr. Swati Sharma, for their remarkable perseverance and dedicated efforts, which played a vital role in bringing this document to completion.

Dr Krishan Kumar
CMO (HAG)
Dte.GHS, MOHFW

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Abbreviations

BIS	Bureau of Indian Standards
CO	Carbon Monoxide
CSIR-NEERI	Council of Scientific & Industrial Research-National Environmental Engineering Research Institute
dB	Decibels
PESO	Petroleum and Explosives Safety Organization
PPE	Personal Protective Equipment
PM	Particulate Matter
SO2	Sulfur Dioxide
NOx	Nitrogen Oxides

List of Contributors

Dr. Gowri Nambiar Sengupta Director CHEB and DDG Public Health, Dte.GHS	**Dr. Sameek Bhattacharya** Professor & HOD, Department of Burns and Plastic Surgery, Dr. RML Hospital, New Delhi
Dr. Krishan Kumar CMO(SAG), Dte.GHS	**Dr. Savita Arora** Consultant, Burns Plastic and Maxillofacial Surgery, VMMC & Safdarjung Hospital, New Delhi
Dr. Manas Pratim Roy Assistant Director General, Dte.GHS	**Dr. Sujata Sarabahi** Professor, Consultant & Head, Department of Burns, Plastic and Maxillofacial Surgery, VMMC & SJH, New Delhi
Dr. Maneesh Singhal Professor & Head, Department of Plastic, Reconstructive & Burns Surgery, JPN Trauma Centre, AIIMS, New Delhi	**Dr. Sushma Adappa** National Consultant (Trauma & Burns), WHO India
Dr. Priya Redhu Consultant (Trauma & Burns), Dte.GHS	**Dr. Swati Sharma** Consultant (Trauma & Burns), Dte.GHS

Introduction to firecrackers

Globally, firecrackers serve as a vibrant symbol of celebration across diverse occasions. In India, they hold a particularly significant and cherished place in nearly every home during Diwali, the festival of lights. However, this integral part of festivities unfortunately often leads to burn injuries. Carelessness, coupled with the inappropriate production or use of fireworks, frequently results in severe and preventable accidents [1].

The impact of firework-related injuries extends beyond the immediate harm to the patient, imposing a heavy burden on families, the healthcare system, and society at large. With an annual incidence of firecracker-related injuries in India standing at 7 per 100,000 population, and an alarmingly high number of young adolescents involved in such incidents, this issue warrants greater attention from a public health perspective. Given the considerable prevalence of these injuries, a comprehensive re-evaluation of existing safety standards is imperative to ensure a truly safe and burn-injury-free Diwali[1].

[1] Kalita, Kabita; Gurindagunta, Swamy Vivek. Firecracker burn injuries during Diwali, a seasonal and preventable epidemic. Indian Journal of Burns 29(1):p 70-75, Jan–Dec 2021. | DOI: 10.4103/ijb.ijb_29_21

Directions to the manufacturers on safe handling of firecrackers

The manufacture of firecrackers involves highly sensitive and flammable materials, posing inherent risks to workers and the surrounding environment. They outline essential safety protocols, quality control measures, and responsible practices that all firecracker manufacturers must adhere to, ensuring a safe working environment and the production of safer products for consumers. Adherence to these directions is not just a legal obligation but a moral imperative to prevent accidents, injuries, and fatalities.

Key directives for manufacturers:

1. **Strict adherence to explosives rules and regulations:**
    - Comply rigorously with the Indian Explosives Act, 1884[2], and the Explosives Rules, 2008[2], including all amendments and relevant standards laid down by the Petroleum and Explosives Safety Organization (PESO)[2] and the Bureau of Indian Standards (BIS).
    - Ensure all necessary licenses and permits are obtained and renewed regularly from the competent authorities.
2. **Infrastructure and facility safety:**
    - **Building Design:** Manufacturing units, especially those involving chemical mixing, must conform to prescribed standards. Buildings should be constructed from non-flammable materials, with adequate ventilation and multiple, clearly marked exits that open outward and remain unobstructed.
    - **Shed Separation:** Mixing sheds and other critical process areas must be adequately separated from each other and from other buildings (e.g., 3-5 meters distance with baffle walls for mixing sheds).
    - **Housekeeping:** Maintain immaculate cleanliness throughout the factory premises. Promptly clean any chemical spills. Keep platforms, passages, and gangways free of obstructions.

[2] Petroleum & Explosives Safety Organization (PESO), Government of India. Available at: https://peso.gov.in/web/dos-donts-fireworks

- **Electrical Safety:** All electrical installations must be in conduits with flameproof junctions. Avoid loose wiring or any sources of spark or ignition. Main switches/circuit breakers should be easily accessible from outside the premises.

3. **Chemical handling and storage:**
    - **Segregation:** Store chemicals separately according to their compatibility and hazard classification to prevent accidental reactions.
    - **Mixing Procedures:** Chemicals must be mixed by trained personnel in designated, isolated sheds. Ensure workers are positioned near exits for quick escape in case of a spark or explosion.
    - **Prohibited Substances:** Strictly adhere to the prohibition of manufacturing, possessing, or importing explosives containing sulfur or sulphurated compounds in admixture with potassium chlorate or any other chlorate, as per government notifications.
    - **Composition Disclosure:** Clearly mention the composition of explosives and their quantity on the product labels as per Rule 15(4) of the Explosives Rules, 2008.
4. **Worker Safety and Training:**
    - **Protective Equipment:** Provide all workers with appropriate personal protective equipment (PPE), including asbestos aprons (or equivalent flame-retardant material) covering the chest, gonads, and thighs. Breathing apparatus must be used in mixing sheds.
    - **Anti-Static Measures:** In areas where aluminum and magnesium powders are used, provide anti-static footwear to combat static electricity.
    - **Training:** Conduct regular and comprehensive safety training for all employees on chemical handling, emergency procedures, fire prevention, and the correct use of PPE. Emphasize awareness of potential hazards and quick response protocols.
    - **Child Labor Prohibition:** Strictly prohibit the engagement of child labor at any stage of the manufacturing process.
5. **Product Quality and Safety Standards:**

- **Green Crackers:** Prioritize the manufacturing of "green crackers" with reduced emissions, as approved and certified by PESO and CSIR-NEERI.
- **Noise Limits:** Ensure that firecrackers comply with the prescribed noise emission standards (e.g not exceeding 125 dB (AI) or 145 dB(C)pk at 4 meters distance from the point of bursting for individual crackers, with adjusted limits for series crackers).
- **Chemical Limits:** Adhere to limits on hazardous chemicals like barium salts, lithium, arsenic, antimony, lead, and mercury.
- **Functionality and Stability:** Manufactured firecrackers must be stable, ignite predictably, burn at a regular speed, and not burst prematurely or shoot out particles violently.
- **Labelling:** Ensure all products are clearly and indelibly marked with:
  - Name, type, and size of the material.
  - Indication of the source of manufacture.
  - Batch number to trace the lot.
  - Month and year of manufacture.
  - Clear and prominent cautionary notes (e.g. "Use outdoors only," "Keep away from children," "Adult supervision required," "Do not hold in hand while igniting").

6. **Emergency Preparedness:**
   - **Firefighting Equipment:** Equip all manufacturing, storage, and sales locations with adequate ISI-approved firefighting equipment (e.g., fire extinguishers, water buckets, sand buckets).
   - **Emergency Response Plan:** Develop and regularly practice a comprehensive emergency response plan, including evacuation procedures and first aid protocols for burn injuries.
   - **Reporting:** Establish clear procedures for reporting any incidents or accidents to the relevant authorities immediately.
7. **Supply Chain Responsibility:**
   - **Authorized Distribution:** Ensure that products are sold only to licensed vendors who adhere to safety norms for storage and sales.

- **Transportation Safety:** Implement strict safety measures during the transportation of firecrackers, ensuring vehicles are equipped with firefighting equipment and follow designated routes.

By implementing and rigorously enforcing these, manufacturers can significantly contribute to a safer environment for their workforce and reduce the incidence of firecracker-related injuries during festive seasons and other celebrations in India.

Directions to the public on safe use of firecrackers

To ensure a joyous and safe celebration, it is crucial to handle firecrackers with utmost care and responsibility. Adhering to these general instructions will help prevent accidents and injuries[3].

General Instructions:

1. **Purchase and storage safety**
    - The crackers should be bought from a registered supplier, of reputed brand of recent make.
    - Old firecrackers/ unbranded fireworks tend to have an unpredictable behaviour so **DO NOT USE THEM.**
    - Store crackers away from sources of fire or ignition.
    - Store them in a cool and dry place.
2. **Pre-bursting precautions**
    - Never carry firecrackers in your pockets
    - Never experiment to make your own fireworks, such as Carbide gun with locally available combustible powder.
    - Open Space: Use fireworks in a wide-open area, away from buildings, people, and flammable materials.
    - Don't light firecrackers in narrow by lanes especially where vehicles are parked.

Figure 1: General measures for firecracker safety (Generated using Perplexity)

[3] Firecracker Safety and First-aid, Association of Plastic Surgeons of India. Available at: https://apsi.in/firecracker-safety-and-first-aid.php

Figure 2: General instructions for safe use (Generated using Perplexity)

3. During bursting - ignition and handling

- Never light firecrackers in a container (glass / metal).
- Never throw crackers at other people.
- Never throw a cracker at a person or an animal like dog, cat etc.
- Never light used crackers.
- Always wear protective eyeglasses when lightening the fireworks / closely witnessing fireworks.
- Only light one firework at a time.
- Do not mix different types of fireworks or attempt to ignite multiple fireworks simultaneously.
- Fireworks should be lightened only by adults or under close supervision of adults in case of children.
- Always use a long candle/'phooljhari' for igniting firecrackers and keep elbow joint straight to increase the distance between the body and the crackers.

- Keep a bucket full of water/ sand whenever you are planning to light a firework.
- Always use closed footwear while bursting crackers especially ground chakri.
- Lighting crackers in hand can cause very serious injuries. **DO NOT KEEP ANAR/BOMB IN HAND** while lighting them as it can cause blast injury to the hand along with multiple disease.

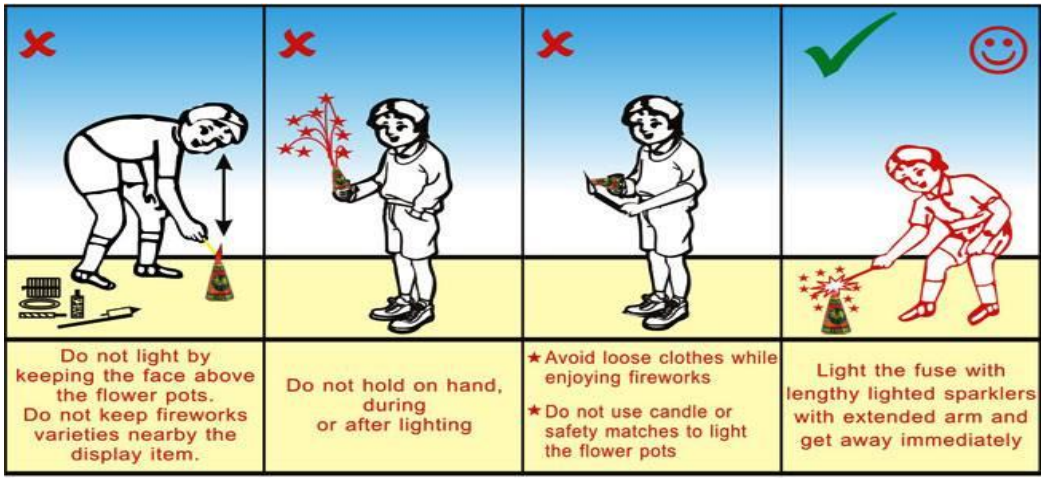

Figure 3:Safe distance maintenance from firecrackers

- While lighting a cracker, stand at arm's length from the cracker
- Don't light fireworks if you are wearing very loose, free flowing clothes like Ghagra.
- Dupatta, chunni should be tied snugly behind the back.
- Do not light diyas on ground level especially inside the house and along the stairs during diwali celebrations. Wearing of fancy synthetic clothes especially by women and children must be avoided due to their tendency to catch fire easily.
- Don't cover crackers with tin containers or glass bottles for extra sound effect.
- Keep the pets in closed doors and windows to avoid scaring them.

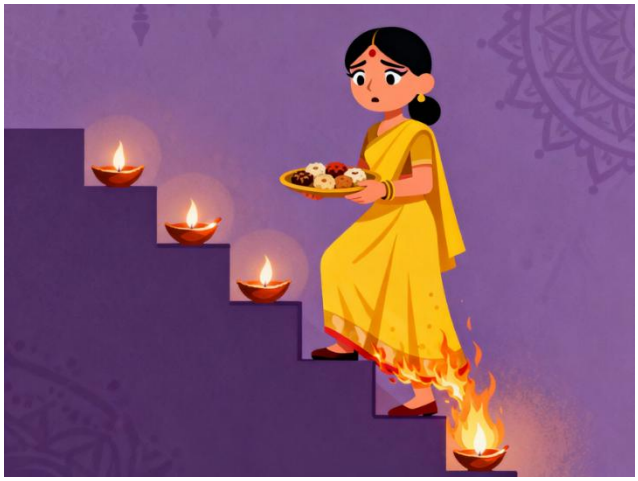

Figure 4: Safety measures when wearing loose clothes: Ghagra, Saree (Generated using Perplexity)

- Patients suffering from asthma or other respiratory illness should always stay indoors.
- Toxic substances released from firecrackers are harmful for all living beings. High levels of noise generated may lead to deafness. Crackers that make a noise of more than 125 decibels at 4 meters from point of bursting are banned by law.
- Celebrate Diwali in a manner that does not cause inconvenience or harm to your neighbor.
- Use a stable launch tube or a sturdy bottle (half-filled with sand/soil for stability) to support the rocket vertically.

Figure 5: Safe launch of rockets (Generated using Perplexity)

4. Post-bursting actions

- Discourage children from picking up firecrackers which have failed to explode. Such firecrackers must be doused with sand or water
- Discard used fireworks in bucket of sand or water to prevent injury to your feet

Figure 6: Safe discarding of firecrackers with sand

Figure 7: Safe discarding of firecrackers with water

Risks associated with commonly used firecrackers

Table 1: Risks associated with use of firecrackers

Firecracker Type	Description	Primary Risks
Sparklers (Fuljhadi)	A thin metal stick coated with pyrotechnic compounds that emit bright sparks when lit. Often considered "safe" for children.	• **Burns:** Despite appearing harmless, sparklers burn at extremely high temperatures (up to 1800°C/3300°F), hot enough to melt certain metals. They are a leading cause of burns, especially to hands and fingers, particularly in children. • **Clothing ignition:** Can easily ignite loose clothing due to high temperature and sparks. • **Eye Injuries:** Sparks can cause irritation or damage to the eyes.
Flowerpots (Anar / Fountain)	A cone-shaped firecracker that, when lit, produces a vertical fountain of colorful sparks and sometimes smoke.	• **Burns:** Direct contact with the hot sparks or the burning base can cause severe burns, especially to hands, face, and legs. • **Fire hazard:** Can ignite nearby flammable materials if placed improperly or if sparks spread. • **Eye Injuries:** Sparks and small particles can cause eye irritation or more serious injuries.
Ground Spinners (Chakri)	A disc-shaped firecracker that spins rapidly on the ground, emitting a shower of sparks and often colored light.	• **Burns:** Direct contact with the spinning firecracker or its sparks can cause burns. • **Unpredictable movement:** Can move erratically, potentially hitting bystanders or igniting flammable objects not initially in its path.

		• **Eye Injuries:** Sparks and debris can fly into eyes.
Rockets	A firecracker with a stick that propels itself into the air, often bursting with sound and light.	• **Burns/Blast Injuries:** Premature ignition or mishandling can lead to severe hand and facial burns or blast injuries. • **Unintended trajectory:** Can go off course, entering homes, landing on rooftops, or hitting people, leading to fires or direct impact injuries. • **Eye injuries:** High risk of severe eye injuries if it bursts close to the face or if debris enters the eye.
Bombs / Sounding Crackers (Sutli Bomb, Atom Bomb, Lar/Garland of crackers)	Designed primarily to produce a loud explosive sound, including highly dangerous, improvised devices like the carbide gun. "Lar" refers to a series of smaller bombs tied together.	• **Blast injuries:** The most significant risk is severe blast injuries leading to traumatic amputations (especially of fingers/hands), fractures, and deep lacerations. This often happens when held in hand or if an unexploded cracker is picked up. • **Hearing loss:** Extremely loud sounds can cause temporary or permanent hearing loss, ringing in the ears (tinnitus), or even ruptured eardrums. • **Facial/Eye injuries:** Debris and concussive force can cause severe injuries to the face and eyes, including blindness. • **Internal injuries:** In rare severe cases, can cause internal organ damage due to blast force.

Snake Tablets (Naag Goli)	Small black tablets that, when ignited, slowly expand and curl into an ash "snake" while emitting smoke.	• **Inhalation risks:** Produces a significant amount of smoke and fumes, containing particulate matter and various chemicals, which can cause respiratory irritation, especially for individuals with asthma or other respiratory conditions. • **Burns:** The ash "snake" can be hot and cause minor burns if touched. • **Environmental pollution:** Contributes to air pollution.

General risks associated with ALL firecrackers:

- **Air Pollution:** All firecrackers release harmful particulate matter (PM2.5), sulfur dioxide (SO2), nitrogen oxides (NOx), carbon monoxide (CO), and heavy metals (e.g., lead, cadmium, barium, strontium, copper, aluminum) into the air. This significantly worsens air quality, leading to respiratory problems (asthma attacks, bronchitis), cardiovascular issues, and long-term health effects.
- **Noise Pollution:** The loud explosions from many firecrackers contribute to noise pollution, which can be distressing for humans (especially children, the elderly, and those with heart conditions) and animals, potentially causing anxiety, stress, and hearing damage.
- **Fire Hazards:** Careless handling, improper storage, or duds can lead to accidental fires in homes, vehicles, or surrounding dry vegetation.
- **Environmental Impact:** Chemical residue and plastic/paper waste from firecrackers contribute to environmental pollution.

It is crucial for everyone to understand these risks and strictly follow safety guidelines to ensure a safe and healthy festive season.

Do’s and Don’ts for each of the types of firecrackers used in India

Table 2: Do's and Don’ts for use of firecrackers

Firecracker Type	Do's	Don'ts
Sparklers (Fuljhadi)	• Hold the sparkler at arm's length. • Light one sparkler at a time. • Wear closed-toe shoes and cotton clothing. • Keep a bucket of water nearby to immediately douse spent sparklers (the metal stick remains hot). • Ensure adult supervision, especially for children. • Consider having children wear gloves.	• Don't give sparklers to children under 5 years old. • Don't hold multiple sparklers at once. • Don't wave sparklers near people, especially faces or clothing. • Don't run with a lit sparkler. • Don't touch the hot metal stick after the sparks fade. • Don't throw spent sparklers on the ground where others can step on them.
Flowerpots (Anar / Fountain)	• Place the flowerpot on a firm, flat, non-combustible surface (e.g., concrete, bare ground). • Ensure there are no flammable materials nearby (dry leaves, paper, cloth). • Light the fuse with a long incense stick or punk stick, keeping	• Don't hold the flowerpot in your hand while lighting or after it's lit. • Don't place it on uneven surfaces or where it can tip over. • Don't lean over the flowerpot while lighting it. • Don't try to ignite a flowerpot that has malfunctioned or only partially burned. • Don't use it indoors or in enclosed spaces.

	your body at arm's length. • Stand back quickly after lighting. • Keep spectators at a safe distance.	
Ground Spinners (Chakri)	• Place the spinner on a smooth, hard, flat surface (concrete, tile) where it can spin freely. • Ensure the area is clear of all obstructions and flammable materials. • Light the fuse with a long incense stick and immediately step back. • Supervise children closely, keeping them at a safe distance from the spinning cracker.	• Don't hold the spinner in your hand. • Don't light it on uneven ground, grass, or sand where it might get stuck or flip over. • Don't try to stop a spinning chakri with your foot or hand. • Don't approach it if it stops spinning prematurely; it might still ignite suddenly. • Don't use it indoors or in crowded areas where its unpredictable movement could cause injury.
Rockets	• Use a stable launch tube or a sturdy bottle (half-filled with sand/soil for stability) to support the rocket vertically. • Ensure the launch tube is firmly embedded in the ground or securely held.	• Don't hold rockets in your hand or launch them without a stable base. • Don't launch rockets from glass bottles if they are likely to shatter on launch. • Don't point rockets horizontally or towards any person or property.

	• Do not use Plastic bottle to Light the rockets • If using a Glass bottle, use a thick Glass bottle as thin bottle might itself explode and cause injury • Point the rocket upwards, away from buildings, trees, overhead wires, and people. • Light the fuse with a long stick and step back quickly. • Check wind direction to ensure it doesn't fly towards populated areas. • Use in a very open, clear area with ample vertical and horizontal space. • Light rockets from terrace when there is not much wind. • Avoid Lightening Rockets from ground level if there are nearby open shops	• Don't try to launch a rocket that has a damaged stick or fuse. • Don't launch near dry leaves, tall grass, or any other flammable material. • Don't attempt to retrieve a rocket that has landed on a rooftop or in a dangerous spot.

Bombs / Sounding Crackers (Sutli Bomb, Atom Bomb, Lar/Garland of crackers)	• Use these only in extremely open and uncrowded areas, far from residences and animals. • Place the bomb on the ground. • Light the fuse with a long incense stick or punk stick and retreat immediately to a safe, covered distance. • Be aware of noise pollution and legal time restrictions for bursting.	• Never hold a bomb in your hand while lighting or after lighting. This is extremely dangerous and a common cause of severe blast injuries and amputations. • Never use or make improvised explosives like a Carbide Gun • Don't throw bombs at anyone or anything. • Don't light bombs in narrow lanes, near buildings, or in crowded areas. • Don't place bombs inside any container (like a bottle, tin, or clay pot) to amplify sound; this can create dangerous shrapnel. • Don't go near a bomb if it fails to explode; wait a long time (at least 20 minutes) and then douse it with water before disposal.
Snake Tablets (Naag Goli)	• Place the tablet on a non-combustible surface (e.g., metal tray, concrete slab). • Use outdoors or in a well-ventilated area. • Light with a match or lighter, keeping your	• Don't inhale the smoke directly, especially if you have respiratory issues. • Don't touch the "snake" while it's forming or immediately after, as it can be hot. • Don't use indoors without proper ventilation.

	face and hands at a safe distance from the fumes. • Supervise children, as these still involve a chemical reaction and heat.	• Don't allow very young children to handle or light them unsupervised.

General Do's & Don'ts for ALL Firecrackers:

Table 3: General Do's and Don'ts for all firecrackers

Do's	Don'ts
• Buy only from licensed vendors and choose "green crackers" where possible. • Read and follow all instructions on the cracker packaging. • Always have a bucket of water or sand, or a hose pipe, readily available for emergencies. • Wear close-fitting cotton clothing and sturdy footwear. • Burst crackers in open spaces, away from people, animals, and flammable materials. • Always supervise children closely. • Maintain a safe distance after lighting any firecracker. • Dispose of all used or un-ignited crackers by dousing them in water first. • Wash hands thoroughly after handling firecrackers.	• Don't try to make or modify firecrackers (e.g., carbide gun) at homes • Don't wear loose, synthetic, or flowing clothes. • Don't allow children to handle firecrackers unsupervised. • Don't re-light "dud" crackers; wait and douse with water. • Don't hold any firecracker in your hand while lighting (except sparklers, with caution). • Don't bend over firecrackers while lighting them. • Don't throw or aim lit firecrackers at anyone or anything. • Don't use firecrackers under the influence of alcohol or drugs. • Don't store firecrackers near a flame or heat source. • Don't try to make or modify firecrackers at home.

	• Don't use firecrackers indoors or in crowded areas. • Don't pick up unexploded crackers.

Figure 8: Do's and Don'ts (Generated using Microsoft Copilot)

Figure 9: Celebrate Diwali with fun and music

Common injuries following the use of firecrackers

Firecrackers, despite being a source of celebration, are a significant cause of various injuries, ranging from minor burns to severe life-altering trauma. The most common types of injuries are typically related to burns, blast effects, and direct impact from projectiles.

Table 4: Common injuries following the use of crackers

Injury Type	Description	Common body parts affected	Associated firecracker types & risks
Burns	Ranging from superficial (redness, pain) to full thickness (deep tissue damage, blistering, charred skin). Often due to direct contact with flames, sparks, or hot chemicals, or clothing catching fire. Can require skin grafting and extensive medical care.	• Hands & fingers (most common) • Face • Eyes • Legs • Chest • Abdomen	• **Sparklers, flowerpots:** High temperatures, even from "safe" crackers, cause severe burns. • **All firecrackers:** Accidental ignition of clothing or contact with hot remnants.
Blast injuries	Caused by the concussive force of an explosion. Can lead to immediate tissue damage, ruptures, or long-term complications. Often involves a combination of	• Hands & Fingers (leading to amputations), • Face • Ears • Eyes • Chest	• **Bombs/Sounding crackers:** High-yield explosives cause devastating blast injuries, often resulting in traumatic amputations of fingers and hands.

	burn, blunt, and penetrating trauma.	• Internal Organs	• **Carbide guns and Homemade/Illegal crackers:** Unpredictable and highly dangerous blast potential.
Eye injuries	Can range from minor irritation (foreign body sensation) to severe, permanent vision loss or globe rupture. Caused by sparks, chemical splashes, or flying debris. Includes corneal abrasions, chemical burns, hyphema (blood in eye), and retinal damage.	• Eyes • Eyelids	• **Sparklers, flowerpots:** Sparks are a common cause of superficial eye burns and foreign bodies. • **Bombs, rockets, aerials:** High-velocity debris can cause penetrating injuries, globe rupture, and even blindness. Bystanders are at high risk.
Lacerations & Abrasions	Cuts and scrapes on the skin, often caused by sharp edges of bursting firecrackers or flying shrapnel. Can be superficial or deep, potentially damaging underlying nerves, tendons, or blood vessels.	• Hands • Fingers • Face • Legs	• **All firecrackers:** Any explosive cracker can produce sharp debris. • **Bombs/Sounding crackers:** Particularly prone to causing deep lacerations from fragments.

Traumatic amputations	Complete or partial severance of a body part most commonly fingers or hands. A direct result of high-energy blast injuries. These are extremely severe injuries requiring complex reconstructive surgery, often with permanent functional loss.	• Fingers • Hands	• **Bombs/Sounding crackers:** The primary cause of traumatic amputations, especially when held in hand or if a dud is picked up.
Hearing Loss	Temporary or permanent damage to hearing, including ringing in the ears (tinnitus) or ruptured eardrums, due to exposure to extremely loud sounds. Sounds above 85 decibels can cause damage, and many firecrackers exceed 150 decibels.	Ears (internal ear structures)	• **Bombs/Sounding Crackers:** Designed for loud explosions, posing the highest risk of acute acoustic trauma and permanent hearing damage.
Respiratory Issues	Acute irritation or worsening of existing conditions (like asthma) due to	• Lungs, • Respiratory tract	• **All firecrackers:** Contribute to air pollution.

	inhalation of smoke, fine particulate matter (PM2.5), and toxic gases (e.g., sulfur dioxide, nitrogen oxides, heavy metals) released during combustion.		• **Snake tablets, crackers with heavy smoke:** Release significant fumes.
Fractures & dislocations	Bone breaks or displacement of joints, usually in the hands or face, caused by the direct force of an explosion or being thrown by a blast.	• Hands, • Fingers, • Facial bones	**Bombs/Sounding crackers:** High-energy explosions can cause significant bone damage.

It's important to note that a significant number of these injuries occur in children and young adolescents, and often involve bystanders rather than just those actively lighting the firecrackers. This underscores the critical need for public awareness, strict safety measures, and responsible practices to prevent these avoidable tragedies.

Carbide guns

A Carbide Gun (or PVC Pipe Gun) is a rudimentary, improvised explosive device often illegally promoted online as a firecracker alternative. The manufacture, sale, possession, and use of these devices are strictly prohibited and illegal under national laws. Citizens are urged to avoid them completely and report any sale or use to the authorities[4],[5],[6].

Mechanism and injury:

- It involves mixing Calcium Carbide with water, which generates highly volatile and explosive Acetylene Gas. The accumulated acetylene gas in the pipe explodes upon ignition (often via a rudimentary lighter mechanism), causing an unpredictable, powerful blast. This results in severe thermal, chemical, and blast injuries, including the projection of shrapnel (plastic/metal fragments)[7].
- Its use leads to unpredictable, high-pressure blasts that cause catastrophic injuries, including permanent vision loss (blindness), chemical burns, eyeball rupture, traumatic amputations, and severe facial trauma among children and adolescents who are drawn to the social media trend.

Prevention and Safety Measures

Prevention requires reinforcing the illegality of the device and focusing on supervision and awareness to counter this dangerous social media trend.

- The manufacture, sale, and use of this device are illegal at places and must be avoided (that's *Zero use policy)*
- When it is not illegal, mandatory use of face shields/protective goggles for the person using the device and all bystanders.
- Crucial parent supervision is required to prevent children and adolescents from accessing or experimenting with these devices.

[4] Ministry of Home Affairs (MHA): The Arms Act, 1959.
[5] Ministry of Home Affairs (MHA): The Explosive Substances Act, 1908.
[6] Ministry of Commerce and Industry: The Explosives Act, 1884
[7] Sabde, Yogesh & Trushna, Tanwi & Bhartiya, Prashant & Tiwari, Rajnarayan. (2023). Vision-threatening ocular injury secondary to calcium carbide gun use in Indian children and young adults: A case series. Indian Journal of Ophthalmology - Case Reports. 3. 840-843. 10.4103/IJO.IJO_3355_22.

- Public health awareness campaigns must be disseminated regarding the device's illegality and lethal danger.

Emergency First aid:

- Injuries from a Carbide Gun (which involves a highly dangerous mix of explosive blast trauma and severe chemical burns from Calcium Carbide) require immediate and specialized emergency care. The critical first step is to **call emergency services immediately**.
- First aid must focus on two priorities: controlling severe, life-threatening bleeding (blast trauma) by applying direct pressure and, most crucially, flushing the eyes and skin continuously with copious amounts of clean, cool water for at least 15-20 minutes if there was any chemical exposure.

Do not delay seeking emergency medical attention, as these injuries often result in traumatic amputation, severe internal trauma, and permanent vision loss due to corrosive chemical burns.

Green crackers and their significance

"Green crackers" are a significant development in India's efforts to mitigate the severe air and noise pollution caused by traditional fireworks, especially during festivals like Diwali. They were developed by the **Council of Scientific and Industrial Research (CSIR)**, specifically by its **National Environmental Engineering Research Institute (NEERI)**[8].

Benefit of green cracker:

- **Reduced pollution:** The primary goal of green crackers is to reduce pollution. They are designed to emit significantly less particulate matter (PM2.5, PM10) – reportedly 30-35% less than conventional crackers. They also aim to reduce emissions of harmful gases like sulfur dioxide (SO2) and nitrogen oxides (NOx), and the overall noise levels.
- **Modified chemical composition:** Green crackers achieve this reduction by
    - **Avoiding or minimizing harmful chemicals:** They either entirely remove or significantly reduce the use of highly polluting chemicals found in traditional crackers, such as barium nitrate (a major contributor to air and noise pollution, and used for green color), potassium nitrate, and sulfur. They also aim to reduce or eliminate lithium, arsenic, antimony, lead, and mercury.
    - **Safer alternatives:** They utilize alternative raw materials and chemical formulations that are less harmful to the environment. For instance, some green crackers might use magnesium instead of aluminum or incorporate specific additives (like zeolites or iron oxide) to suppress dust or dilute gaseous emissions.
- **Noise Levels:** Green crackers are designed to produce lower sound levels, typically in the range of 110-125 decibels, compared to traditional crackers that can emit around 160 decibels or more.

Types of Green Crackers: CSIR-NEERI has developed three main types of green crackers, each with a specific mechanism to reduce pollution:

[8] CSIR-National Environmental Engineering Research Institute, A constituent laboratory of CSIR Available at: https://www.neeri.res.in/abouts/details/green-crackers#googtrans(en|en)

- **SWAS (Safe water releaser):** These crackers release water vapor into the air, which helps suppress the dust and particulate matter released, reducing it by approximately 30%. They are free of potassium nitrate and sulfur.
- **STAR (Safe thermite cracker):** These crackers use a reduced quantity of thermite (a mixture of metals and metal oxide) and aim for reduced particulate matter disposal and lower sound intensity. They also do not contain potassium nitrate and sulfur.
- **SAFAL (Safe minimal aluminum):** These crackers minimize the use of aluminum, often substituting it with magnesium, leading to a reduction in particulate matter (around 35%) and sound intensity.

How to Identify green crackers: To distinguish them from regular crackers and prevent the sale of counterfeits, green crackers are identified by:

- A **green logo** of CSIR-NEERI.
- A **Quick Response (QR) code** on their packaging, which can be scanned to verify authenticity and product details.

Certification and Manufacturing: Only licensed manufacturers who have signed agreements with CSIR-NEERI and are approved by the Petroleum and Explosives Safety Organization (PESO) are authorized to produce green crackers. This ensures adherence to the prescribed formulations and safety standards.

Limitations and Concerns:

While a step in the right direction, it's important to acknowledge that "green crackers" are **not entirely pollution-free**. They still produce emissions, just at a reduced level. Some experts and environmentalists caution that even with a 30% reduction, the pollution levels can still be significantly higher than safe limits, especially in densely populated areas. There have also been concerns about the availability of information on the exact composition of all green crackers and the effectiveness of monitoring mechanisms.

Nonetheless, the concept of green crackers represents a conscious effort to balance cultural traditions with environmental responsibility and public health concerns. Their widespread adoption and stricter enforcement of their use can contribute positively to mitigating the adverse impacts of firecrackers.

First aid following injuries due to use of firecrackers

Burn injuries from firecrackers can range from superficial skin damage to severe, life-threatening trauma. Immediate and appropriate first aid is critical to minimize damage and prevent further complications.

General principles of first aid for burns:

1. **Safety first:** Ensure the area is safe. Remove the person from the source of the burn (e.g., away from the cracker, flames).
2. **Stop the burning process:** Extinguish any flames on clothing. If clothing is on fire, make the person stop, drop, and roll, or smother the flames with a blanket.
3. **Cool the burn:** This is the most crucial step.
4. **Cover the burn:** Protect the injured area from infection.
5. **Seek medical help:** Assess the severity and call for professional medical assistance if needed.

Step-by-Step First Aid Protocol [3]:

1. **Assess the situation and ensure safety:**
   - Move the injured person away from any unexploded firecrackers or fire.
   - If clothing is on fire, douse it with water or use a blanket to smother the flames.
2. **Cool the burn (THE MOST IMPORTANT STEP):**
   - **Immediately apply cool, running water** over the burned area. Do this for at least 10 to 20 minutes, or until the pain subsides significantly.
   - **Do NOT use ice, ice water, or very cold water**, as this can cause frostbite and further damage the tissue. Lukewarm or cool water is ideal.
   - **Do NOT apply any ointments, creams, butter, oil, toothpaste, or home remedies** to the burn. These can trap heat, increase the risk of infection, and make it difficult for medical professionals to assess the burn.
   - If running water is not available, immerse the burned area in a container of cool water.

Figure 10:Use of water over burn area

3. **Remove jewelry and constrictive clothing:**
    - Gently remove any rings, watches, bracelets, or tight clothing from the injured area **before swelling begins**. Swelling can make removal difficult and cause a tourniquet effect.

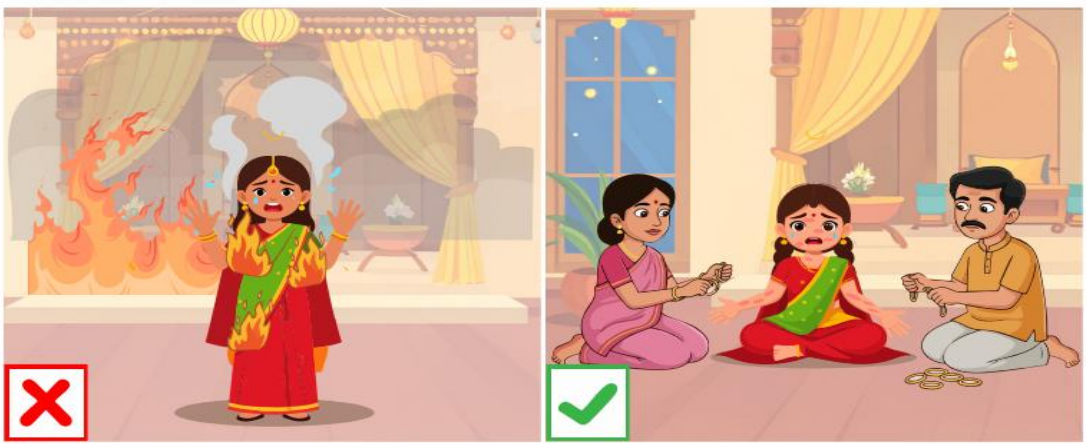

Figure 11: Safe removal of rings/bracelets in burn area

- If clothing is stuck to the burn, **DO NOT pull it off**. Cut around it and leave the stuck fabric in place.

4. **Cover the burn:**
   - After cooling, loosely cover the burn with a clean, dry, non-stick dressing. Sterilized gauze pads, clean plastic wrap (cling film), or a clean, lint-free cloth can be used.
   - This helps protect the burn from infection and reduces pain by preventing air exposure.
   - **DO NOT apply cotton wool**, as its fibres can stick to the burn.
   - **DO NOT break blisters.** If blisters form, leave them intact. Breaking them increases the risk of infection.
5. **Manage pain:**
   - Over-the-counter pain relievers like paracetamol (acetaminophen) or ibuprofen can be given for mild to moderate pain, if the person is conscious and able to swallow.
6. **Seek Medical Attention:**

   Call Emergency Services (112 or local emergency number) immediately or transport the person to the nearest hospital if:

   - **Any severe burn:** Deep burns (charred skin, white or leathery appearance, loss of sensation).
   - **Large burns:** Burns larger than the size of the injured person's palm.
   - **Burns on critical areas:** Face, eyes, ears, hands, feet, joints, or groin/genitals.
   - **Chemical burns** (e.g., if cracker chemicals splashed).
   - **Electrical burns** (less common with crackers but possible if they contact wires).
   - **Inhalation injury:** If the person has difficulty breathing, hoarseness, coughing, or facial burns (suggests smoke inhalation).
   - **Suspected internal injury** due to blast.
   - **The injured person is a child or elderly.**
   - **The person is in shock** (pale, clammy skin, weakness, rapid shallow breathing).

- **The burn is getting worse or showing signs of infection** (redness, swelling, pus, increasing pain).

For minor burns (small, superficial, redness only):

- Follow the cooling and covering steps.
- Monitor the burn for signs of infection.
- Consult a doctor if pain persists or if there are any concerns.

Specific considerations for firecracker injuries:

- **Eye injuries:** If chemicals or debris get into the eye, flush the eye immediately and continuously with copious amounts of clean, cool water for at least 15-20 minutes. Keep the eyelids open during flushing. **DO NOT rub the eye.** Seek immediate ophthalmological (eye specialist) attention.

Figure 12: Precautions following eye injury

- **Blast injuries (from bombs):** These are often complex and involve multiple types of trauma (burns, blunt force, penetrating wounds, internal injuries).

Prioritize controlling severe bleeding by applying direct pressure. Seek immediate emergency medical care.

Remember, prompt, and correct first aid can significantly improve the outcome of a burn injury. Do not delay in seeking professional medical help for anything more than a very minor burn.