



Il seguente articolo, pubblicato sul quotidiano pakistano Tribune, fu scritto nel 2012 dal Dr. Zeeshan Usmani, autore di ricerche sulla simulazione e la modellizzazione di onde esplosive in spazi aperti e confinati. La ricerca di Usmani (menzionata nel Wall Street Journal, AOL News, Wired Magazine, NPR, Technology Review del MIT, Florida Today e The Economist), trae le sue ragioni dalla situazione del Pakistan del 2012, quando gli attacchi terroristici con esplosivo avvenivano con una frequenza media di un ogni sei giorni. Dall'articolo si possono trarre indicazioni molto utili sul comportamento durante una esplosione.

Una considerazione evidente. Fornire indicazioni di comportamento in caso di esplosione ha senso nella misura in cui

- 1) alla prima esplosione possono seguirne altre, e quindi mettersi al riparo è sicuramente importante;
- 2) si sappiano leggere indicatori - nel caso di attacco suicida - nel comportamento dell'attentatore che facciano presumere l'imminenza di una esplosione.

THE EXPRESS TRIBUNE

What to do if you are caught in a bomb blast

By [Zeeshan Usmani](#) Published: August 19, 2012

During the attack:

1. Stay calm. You are the only one who can help yourself.
2. Crawl under a sturdy table or a solid object if things are falling around you, and remain there for at least one minute.
3. Stay away from glass or fixtures, like windows, mirrors, cabinets, and electrical equipments.
4. Follow the orders of police or safety personnel. If an evacuation is ordered, leave the building as soon as you can.

5. Do not forget handicapped people who may need your help in exiting.
6. Do not move seriously injured persons unless they are in obvious, immediate danger, such as a building collapse or fire.
7. Do not go near gas lines, fire hazards, or kitchens.
8. Once out, keep as far away from the building as possible.
9. Do not use elevators.
10. Lay flat. Most explosives used by suicide bombers are designed to burst in a flower bouquet pattern to throw the shrapnel horizontally between two and six feet above the ground. This pattern increases the chances of hitting the human torso and head by a shrapnel. Therefore, the best place to be in an event of an explosion is to lay flat on the ground.
11. Keep your mouth open and breathe in small intervals. The most lethal aspect in an explosion is not shrapnel or heat, it is the blast overpressure. The blast wave travels at supersonic velocity and severely affects the air-filled organs like lungs, kidneys, and bowels. We naturally tend to take a deep breath and hold it in emergencies. However, this proves lethal in a bombing situation, since our lungs become like a pressurised balloon to be ruptured by the blast wave. The majority of victims in a typical suicide bombing die from internal bleeding in the lungs. Only 6% on average die from shrapnel wounds. Your chances of injury with empty lungs are far smaller compared to holding your breath.
12. Reduce your lateral profile – while laying on the ground, try to lay on one side and use your arms to protect the exposed eye.
13. If you know an explosion is coming, the best thing to do is to find a place below ground level and hide there.

Under the debris:

1. Cover your mouth with a handkerchief or clothing.
2. Tap over and over on a pipe or wall so that rescuers can hear where you are.
3. Do not shout. Or shout only if there is no other choice. You inhale enormous amount of dust when yelling.
4. Stay calm and think of things that relax you and make you happy.
5. If possible, use a flashlight to signal your location to rescuers.
6. Avoid unnecessary movement so you don't kick up dust.
7. If possible, use a whistle to signal rescuers.

After the attack:

1. Duck and cover.
2. Leave the building as quickly as possible. Do not stop to retrieve personal possessions or make phone calls.
3. One event can be followed by another, so do not rush towards the blast scene.
4. Open doors carefully; watch for falling objects.
5. Do not use matches or lighters. Sparks might trigger explosions.
6. Avoid using telephones, mobile phones and hand radios. Electrical sparks or signals could trigger other bombs.
7. Move away from side-walks or streets to be used by emergency officials or others still exiting the building.
8. If you or others have life-threatening injuries, such as severe bleeding, difficulty breathing, chest pain or burns, provide or seek first aid and get help from officials or others at the scene.
9. If you or someone else has minor injuries, seek first aid as a first step until those more severely injured can be cared for first. If possible, go to a hospital that is not in the immediate area of the blast. Hospitals closest to the blast(s) will quickly become crowded.
10. Listen to emergency officials at the scene. If no one is near you to give instructions and you are in the immediate area of the blast(s), leave as soon as you can.
11. To keep safe, move away from the area. Avoid crowds, unattended cars and trucks, public transportation, and damaged buildings.