This is the second in the series of two articles on lightning injuries.

**Effects of lightning**

Lightning provides our daily need of the element nitrogen through the food chain. The excessive electrical energy of lightning converts nitrogen into nitrate. Then nitrate fall on the ground with rainwater and are absorbed by trees.

In spite of this important effect, lightning could damage many organs or systems in the body including most serious damage to the cardiovascular and central nervous systems. Sudden death may occur due to lightning due to cardiorespiratory arrest. Circulatory collapse is common with direct hits of lightning. Other adverse effects include cardiomyopathy, atrial fibrillation, and pericarditis. Those above effects may resolve within three days except pericarditis. Pericarditis usually may persist several months after the initial injury.

Injuries to the nervous system include loss of consciousness, seizure, headache, paraesthesia or weakness, confusion and memory loss. They are transient and permanent neurological symptoms include peripheral nerve lesions and cerebral infarction. Progressive myelopathy and sensory loss can also occur several months after initial injury.

Lightning can lead to partial or full thickness burns. It is believed that the place of skin where the lightning current exits from the body becomes a burn. Ocular injuries are also common and the lens is the most frequently injured part of the eye. Cataracts may be the commonly observed complication among victims after a few days or sometimes after a few years. Rupturing of the tympanic membrane can also occur. Deafness is common but usually it is transient. Most frequently arising psychiatric problems are depression, sleep disturbances, emotional impairment and aggressive behaviour. Memory loss and poor concentration ability can also be noticed.

Buildings or tall structures struck by lightning may be damaged as the lightning seeks unintentional trail to the ground. Animals are more susceptible victims to be affected by lightning as they are generally placed outdoors even in heavy rains.

**Prevention and protection from of lightning injuries**

The followings are some recommendations to help to reduce the effects of lightning in an indoor and outdoor environment.

**Preventive measures for the outdoor settings**

- Avoid being outside in open spaces during thunderstorms. If you hear thunder, you are in range for a lightning strike. You need to seek...
shelter immediately if you are outside. E.g. Inside a building
or a closed vehicle.

- Do not stand underneath highest elevation areas and tall
  objects. Always move away from signal towers and isolated
  trees.
- Do not carry or hold tall metal objects during thunderstorms.
- If lightning has struck the immediate area, remember that
  lightning can strike the same place twice.
- Avoid water environment. Do not bathe in an open pool and
  do not row a boat during lightning.
- If you cannot find shelter, crouch down in a catcher's
  stance. Put your hands on your knees or place them over
  your ears to protect against hearing damage from thunder.

Preventive measures for the indoor settings

- Close all windows and stay away from them.
- Do not use any electrical or electronic equipment. Lightning
  may strike outside lines and travel inside.
- Do not use the land-line telephones.

Protection from lightning injuries

Historical background of lightning protection system

In 1752 Benjamin Franklin performed the famous experiment
of flying kite up to a thunder cloud and proved that lightning
strike was a discharge of a huge amount electricity. He in-
vented the lightning rod and his first theory was that the sharp
pointed metal rod on a building would provide a safe path for
lightning.

Also, most ancient lightning conductors can be found in Sri
Lanka in places like the Anuradhapura kingdom that dates
back thousands of years. Most Sinhalese kings, who mastered
the art of construction of temples and advanced building struc-
tures, installed a metal tip made of silver or copper on the high-
est point of those buildings.

Lightning protection system

Lightning protection can improve security from lightning strikes
by decreasing the likelihood and strength of indoor lightning
shocks. It provides a specified path on which lightning can
travel to the ground. Lightning protection system connected to
the building includes a network of the lightning rod (air termi-
nal), braided conductor (cable) and ground termination. A light-
ning rod is a metal strip, connected to the earth through con-
ductors. Lightning arresters, which are fixed to the electric
power transmission systems and telecommunication towers,
are helping to protect those systems.

Alertness on weather forecast

High winds, increased rainfall and a darkening cloud cover are
the warning signs for possible cloud-to-ground lightning strikes.
Therefore alert on local weather pattern and current weather
forecast is the essential first step to prevent being struck by
lightning.

First aid measures if lightning strikes a human

Lightning hazards are not fatal at all times and there is no risk
in touching the victim unless the person falls on electric cables.
The damage is determined by the path of the discharge of
lightning through the body and the intensity of the current. It is
essential to provide first aid measures immediately after the
incident to save life before seeking medical treatment for the
victim. Providing cardiopulmonary resuscitation is a must if it is
disturbed.

Sources

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Compiled by

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<table>
<thead>
<tr>
<th>Disease</th>
<th>06th - 12th Feb 2016 (07th Week)</th>
<th>Cases reported during the current week</th>
<th>Total for the current year</th>
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Source: Weekly Return of Communicable Diseases (WROC) - Minus 1 week data will start appearing on or after 12th February, 2016. Total number of reporting units data provided for the current week. A = Cumulative cases for the year. C** = Cumulative cases for the year.
Table 2: Vaccine-Preventable Diseases & AFP

<table>
<thead>
<tr>
<th>Disease</th>
<th>No. of Cases by Province</th>
<th>Number of cases during current week in 2016</th>
<th>Number of cases during same week in 2015</th>
<th>Total number of cases to date in 2016</th>
<th>Total number of cases to date in 2015</th>
<th>Difference between the number of cases to date in 2015 &amp; 2016</th>
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Key to Table 1 & 2


Data Sources:
CRS** = Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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