



Cause Of Death

Forensic Science
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Introduction

- The cause of death refers to why death occurred (e.g. due to excessive loss of blood)



and shouldn't be confused with how the victim was killed i.e. the manner of death. • A variety of measures are taken by coroners/pathologists to establish whether the manner of death was accidental, natural, suicide or murder, depending on the situation and case type.

The Causes

- An autopsy is generally the most accurate method available to determine the cause of death during murder cases and consequently, whether the fatality was innocent or in fact a disguised



murder. ● Different measures are taken under different situations and with it being rather difficult to explain every single scenario possible, below are some common examples, which may likely perk your interest.

Scenario One (Arson Victims)

- When dealing with a body found at the scene of a fire, the corpse is firstly examined for any traces of soot present in the breathing passage. The presence of soot would suggest that death was caused via asphyxiation, whereby the victim dies to due to a lack of oxygen. Next, blood samples are analyzed for the presence of carbon monoxide, cyanide or other poisons in the bloodstream, indicating a death caused by cyanide poisoning, generally a result of the burning of synthetic materials, usually furniture.



In other cases, burns on the corpse with inflamed edges



(caused by red blood cells trying to repair the burned skin), would suggest that the victim died from burns. Wounds and lacerations on the body would at first seem to have been a result of the fire, however, if signs of underlying bleeding are present, it would conclude that the victim was already dead before the fire began and the arson may have been a means to cover up a more sinister crime.

Scenario Two (Victims Hanged)

- A body discovered hanging or suspended in some way, usually contains telltale signs of a death due to the lack of oxygen. These include such signs as blue skin color, burst blood vessels in the eyes and inflated lungs. Forensic pathologists examine the rope marks on the neck to determine if they contain evidently inflamed edges, a sign that the victim was alive before being hanged. However, when no inflammation marks are present, it suggests that the victim was dead before being hanged and the hanging was a form of cover up. • The rope marks on the victim's neck are examined to check that they match the rope found at the scene of crime. The slightest difference of the rope impression from the actual rope itself, would undoubtedly imply that the rope was not the murder tool and where the victim did die of a lack of oxygen and does have evident bruises on the neck, the murder weapon is sought



using the markings as a guide. As a general rule, all rope markings on the neck should be in the shape of an upside down V, where the knot would cause a bruise on the back of the neck, creating the point of the V.



- Other facts pointing to murder may also be revealed when an examination of the neck is carried out. Strangulation usually breaks the hyoid bone located in the neck, but the bone is very rarely broken during hanging. The breakage of the hyoid would suggest manual strangulation, whereby the victim was strangled using the hands, or via means of another implement (e.g. cord, belt etc).
- When strangulation is the case, death may be caused due to a lack of air, but more likely, as a result of the deliberate compression of the neck, causing a vegal inhabitation, the situation where the stimulation of the neck's vagus nerve causes the heart to stop.

- In cases where the hyoid bone is not broken, but bruising is evident around the nose and mouth, a death caused by smothering is indicated, thereby dying due to a lack of oxygen.

Scenario Three (Victims Drowned)

- Bodies discovered in the water are examined to see whether water is actually present in the airway and stomach of the victim and if the lungs have swollen up. If such signs are apparent, then the victim did actually die due to drowning, although whether it was murder or accidental will be left for investigators to determine. Further examination of the corpse will reveal if bleeding occurred in the lungs, suggesting that there was a struggle for breath during the drowning. • Other signs coroners pick up are such things as leaves, twigs or other objects near the



death scene, found grasped in the victims hands, indicating that the victim tried to clutch an object to save themselves.

- However, in the case that an examination of the larynx reveals that a spasm occurred, the victim may have died from sudden exposure to the cold, which caused an immediate heart attack. To reveal whether bodies were alive or dead upon entering the water, an analysis of single celled algae, (known as diatoms) is performed. Certain diatoms found in the body are compared against those found in the water and if these samples match, then the body was alive upon entering the water, but if otherwise, the body was dead upon entering the water and the coroners will continue searching for other injuries that may point to murder.
- In some cases, hypothermia may have been the cause of death rather than drowning. When the core temperature of the human body drops below 305K, the motion of the enzymes in the body begins to slow down and hypothermia is the eventual result of prolonged exposure to the cold.

WebMD

SYMPTOMS OF HYPOTHERMIA

People at increased risk for hypothermia include:
The elderly, infants, and children without adequate heating, clothing, or food.

The infographic features a central blue silhouette of a human figure. Surrounding this figure are eight icons, each with a corresponding symptom label. The symptoms are: slurred or mumbled speech (top left), confusion & memory loss (top right), shivering (which may stop as hypothermia gets worse) (middle left), drowsiness or exhaustion (middle right), a slow, weak pulse (bottom left), slow, shallow breathing (bottom right), and loss of coordination, fumbling hands, stumbling steps (bottom center). A plus sign is on the left and a phone icon is on the right of the bottom section.

Slurred or mumbled speech

Confusion & memory loss

Shivering (which may stop as hypothermia gets worse)

Drowsiness or exhaustion

A slow, weak pulse

Slow, shallow breathing

Loss of coordination, fumbling hands, stumbling steps

Get medical help right away if your **infant** shows any of these signs:

- Cold-to-touch, bright red skin
- Unusually low energy

Sources: CDC, National Institute on Aging, National Safety Council, American Academy of Pediatrics, American Heart Association, Journal of Wilderness & Environmental Medicine, Annals of Emergency Medicine, American Family Physician, ProctorK12.



• Questions or
Comments?

