



## Strangulation/Suffocation Overview

### Physical signs of strangulation

One study found that in approximately 50% of strangulation cases, there is no visible sign of injury; and an additional 35% of cases have injuries that are too minor to photograph. (McClane, Hawley, & Strack, 2001). Another study indicates that as many as 85% of cases have some physical sign of injury on their neck. (Shields, Corey, Weakley-Jones, & Stewart, 2010)

### Hypoxia

**Hypoxia is a below normal level of oxygen in blood or body tissues.** Infarction, or cell death, occurs in its most severe form. Symptoms of hypoxia relate to how low the oxygen levels drop and how quickly. In an acute setting, such as strangulation, it is possible for oxygen levels to plummet dramatically and cause a loss of consciousness after only 10-20 seconds. (Ullrich & Goodkin, 2012) There are various degrees of hypoxia ranging from mild to severe (Barlow Pugh & Werner, 2000):

- **Mild symptoms** of hypoxia may include **disorientation**, restlessness, headache, nausea, increased respiratory rate, increased heart rate, slight increase in blood pressure, and/or a bluish skin color.
- **Moderate symptoms** may include visual disturbances, anxiety, agitation, elevated blood pressure, slow or irregular heart rate, and/or a deeper blue skin color.
- **Severe symptoms** may include delirium, **loss of consciousness**, **convulsions**, paralysis, vomiting, abrupt drop in blood pressure, **incontinence**, faint and irregular heart rate, and/or a deeply blue skin color.

It is important to note that everyone reacts differently to hypoxia and the presence or absence of any of the listed symptoms is not diagnostic or exclusive.

### Fatality

**Significant risk of death in strangulation or suffocation** is linked to the level of hypoxia that occurs and is related to four components: Force, duration, location and surface area. For hypoxia to occur there must be some level of all four at play. The amount of force does not necessarily have to be high, but it does have to be enough to occlude either the blood vessels or the airway. The duration does not have to be long, but it must persist long enough for the body to react and asphyxiation to occur at some level. The surface area does not have to be large, but if it is not, then it must be in the exact right spot to limit the oxygen to the brain. The location must be on/near the vessels or airway.

## Glossary of terms

### **Strangulation:**

Pressure on the neck causing the temporary obstruction of the carotid arteries or jugular veins and occasionally the airway.

### **Suffocation:**

Obstruction or restriction of breathing by external forces.

*Either of these may lead to*

**Asphyxiation:** An interruption in oxygenation.

*Which may lead to*

### **Hypoxia:**

Below normal level of oxygen in the blood or body tissues

*Which may lead to*

### **Ischemia:**

Temporary and reversible cell damage

*or*

### **Infarction:**

Permanent cell death



## Works Cited

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- Ullrich, N. J., & Goodkin, H. P. (2012, November 7). *The choking game and other asphyxial games in children and adolescents*. Retrieved from UpToDate: <http://bit.ly/1TsZisF>