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How did crucifixion kill?

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Suffocation, loss of body fluids and multiple organ failure. It wasn't pleasant, but for those with a strong constitution take a deep breath and read on. "The weight of the body pulling down on the arms makes breathing extremely difficult," says Jeremy Ward, a physiologist at King's College London. In addition, the heart and lungs would stop working as blood drained through wounds. Crucifixion was invented by the Persians in 300-400BC and developed, during Roman times, into a punishment for the most serious of criminals. The upright wooden cross was the most common technique, and the time victims took to die would depend on how they were crucified.

Those accused of robbery were often tied to the crucifix and, because they could better support their weight with their arms, might survive for several days. One of the most severe methods of crucifixion put the arms straight above the victim. "That can [kill in] 10 minutes to half an hour - it's just impossible to breathe under those conditions," Ward says.

Someone nailed to a crucifix with their arms stretched out on either side could expect to live for no more than 24 hours. Seven-inch nails would be driven through the wrists so that the bones there could support the

body's weight. The nail would sever the median nerve, which not only caused immense pain but would have paralysed the victim's hands.

The feet were nailed to the upright part of the crucifix, so that the knees were bent at around 45 degrees. To speed death, executioners would often break the legs of their victims to give no chance of using their thigh muscles as support. It was probably unnecessary, as their strength would not have lasted more than a few minutes even if they were unharmed.

Once the legs gave out, the weight would be transferred to the arms, gradually dragging the shoulders from their sockets. The elbows and wrists would follow a few minutes later; by now, the arms would be six or seven inches longer. The victim would have no choice but to bear his weight on his chest. He would immediately have trouble breathing as the weight caused the rib cage to lift up and force him into an almost perpetual state of inhalation.

Suffocation would usually follow, but the relief of death could also arrive in other ways. "The resultant lack of oxygen in the blood would cause damage to tissues and blood vessels, allowing fluid to diffuse out of the blood into tissues, including the lungs and the sac around the heart," says Ward.

This would make the lungs stiffer and make breathing even more difficult, and the pressure around the heart would impair its pumping.

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