

## King Tut Not Murdered Violently, CT Scans Show

Brian Handwerk  
for [National Geographic News](#)

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Detailed CT scans of King Tutankhamun's mummy found no physical evidence of murder, Egypt's Supreme Council of Antiquities announced today. But the scans did reveal unusual features, including a broken leg, which some experts think may have led to the boy king's death.

The scans cannot rule out "nonviolent" murder, such as poisoning. But they have apparently disproved the off-repeated theory that King Tutankhamun was murdered by a blow to the head.

"I believe these results will close the case of Tutankhamun, and the king will not need to be examined again. We should now leave him at rest," said Zahi Hawass, the council's head and a National Geographic Society explorer-in-residence.

Noninvasive CT (or CAT) scanning produced three-dimensional views inside the fragile mummy by combining two-dimensional cross-sectional images, or "slices." The two-month study was designed to test old theories and unearth new information about the life and death of the legendary young pharaoh.

### Death by Broken Leg?

At the time of his death at around 18 years old in 1323 B.C., Pharaoh Tutankhamun was not one of Egypt's more notable rulers. But when Englishman Howard Carter unearthed the lavish treasures found with his mummy in 1922, "King Tut" became a familiar name around the world ([see photos of Tut's tomb treasures](#)).

Unfortunately, Carter and his team dismembered much of the mummy to retrieve artifacts and remove the body from its sarcophagus. Tut had been affixed to his coffin by the resins and other fluids used in the embalming process.

The 1920s-era damage is sometimes difficult to distinguish from damage dating back to the king's lifetime or the embalming process.

While scientists were unanimous in concluding that there was no evidence of head trauma, they differed when interpreting a fracture found in the mummy's left thigh.

Some researchers felt that the break represented a serious injury that Tut had sustained shortly before death, perhaps resulting in an open wound and the possibility of a life-threatening infection. Others dismissed the broken bone as yet another example of damage inflicted by Carter's team.

In January the mummy was removed from its tomb in the Valley of the Kings for the first time in almost 80 years. The remains—still lying in the tray of sand where they had been placed by Carter—were taken from the sarcophagus and transported to a nearby trailer with mobile CT scanner. The 15-minute CT-scan session yielded some 1,700 images.

During the study an Egyptian team worked under the direction of Madeeha Khattab, dean of the School of

Medicine, Cairo University, and was joined by experts from Italy and Switzerland. The National Geographic Society and Siemens Medical Solutions of Germany donated the scanning equipment.

Since Carter returned Tut to his tomb in 1926 the young king has been x-rayed twice: in 1968 by a team from England's University of Liverpool and in 1978 by a University of Michigan anthropologist.

The 1968 x-rays revealed a bone fragment inside the king's skull. The finding prompted the theory that the boy king was murdered by a blow to the head during the unsettled period of his reign.

The fragments are now deemed to be after-death damage, likely inflicted by Carter, because they show no evidence of being inundated with the embalming fluid used to preserve the pharaoh for the afterlife.

### **Tut Appears to Have Been Healthy**

The scans paint a picture of a well-nourished 19-year-old pharaoh in good health.

"Judging from his bones, the king was generally in good health. ... There are no signs of malnutrition or infectious disease during childhood," the report states.

All researchers agreed that the mummy was carefully and extensively embalmed. Some proponents of murder theories had previously suggested a hurried and rushed embalming process.

The report concurred with many conclusions of earlier x-ray analyses, such as the king's tender age at death.

Additional information also came to light. The young Tut had a slightly cleft palate and an impacted wisdom tooth. He was also found to have an elongated skull, which is believed to be a natural physical variation. A previously detected bend in the king's spine is now thought to be the result of the mummy's positioning by embalmers.

The team may have also located Tut's lost penis, which was catalogued during the 1920s but absent during the 1968 x-ray examination.

Though researchers could not be certain, they said the penis is likely loose in the sand next to the body, surrounded by skeletal fragments such as vertebrae, thumbs, and other missing digits.

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