

# Center for Science Outreach



## Necropolis Cold Case

How Tutankhamen (King Tut) died has been one of the world's greatest mysteries for decades. A wealthy history buff has hired you as an independent investigator to solve the case once & for all! Use your science knowledge to follow the leads and investigate the mystery.

### Hypotheses for King Tut's Death:

There are six main hypotheses that have been examined over the last 100 years, since the discovery of King Tut's tomb. You can take a virtual tour of the tomb using this link. <https://bit.ly/39x09CN>

1. **Old Age** - King Tut died within the normal age at death for the time period
2. **Chariot Accident** - King Tut died from complications from a chariot crash
3. **Hereditary Disease** - Genetic abnormalities from inbreeding weakened the king
4. **Malaria** - The king died after contracting malaria
5. **Assassination** - A political rival ordered King Tut to be killed
6. **Hippo Attack** - King Tut's chest was crushed in a hippo attack while hunting in a marsh

### Examination of the evidence

You will be evaluating each hypothesis by examining five different types of evidence.

- |                        |                       |
|------------------------|-----------------------|
| A. Genetic Analysis    | D. List of Pharaohs   |
| B. Archeological Index | E. Evidence of Trauma |
| C. Evidence of Murder  |                       |



Tutankhaum

To learn more about King Tut, check out article [In Pictures: The Life and Death of King Tut](https://bit.ly/3dQHKEf) (<https://bit.ly/3dQHKEf>) and video [Tutankhamun : Curse of the Boy King](https://bit.ly/3bLWWAV) (<https://bit.ly/3bLWWAV>)

## Now see if you can crack the case!

You can access the “supercomputer” ORACLE (by clicking on the link below) to examine each line of evidence.

*ORACLE SUPERCOMPUTER* (<https://bit.ly/2X3ccVZ>)

As you gather information, use the chart below (you can print it out, make your own copy on google spreadsheets, or draw out a copy), to record information. For each line of evidence you can record +, -, or N/A for each hypothesis.

+ : indicates that the line of evidence supports that hypothesis

- : indicates that the line of evidence does NOT support that hypothesis

N/A: indicates that that line of evidence does not apply to that hypothesis

	Hypothesis 1 Old Age	Hypothesis 2 Chariot Accident	Hypothesis 3 Hereditary Disease	Hypothesis 4 Malaria	Hypothesis 5 Assassination	Hypothesis 6 Hippo Attack
Genetic Evidence						
Archeological Index						
Evidence of Murder						
List of Pharaohs						
Evidence of Trauma						

### Virtual Lab: Journeying Back in Time with Ancient DNA

By harnessing the power of modern sequencing and analytical techniques, scientists work to uncover the genetic secrets hidden in the DNA of ancient specimens collected during archaeological expeditions. In Tutankhamun’s case, scientists collected DNA from bone tissue to examine putative diseases and causes of death in Tutankhamun and his immediate lineage. To learn more about the techniques used, click the links to the right to explore DNA extraction, gel electrophoresis and PCR through online interactive virtual labs.

- DNA extraction: <http://learn.genetics.utah.edu/content/labs/extraction/>
- Gel electrophoresis: <http://learn.genetics.utah.edu/content/labs/gel/>
- Polymerase chain reaction: <http://learn.genetics.utah.edu/content/labs/pcr/>
- What stuck with you today? Take the [Quiz](#)

### Make Your Own Mummy Fruit



None of these investigations would be possible without the Egyptian preservation technique of mummification. Mummies were preserved through a process that dried out their bodies, which prevented bacteria from coming in and causing decay (because the bacteria need water to live!) You can make your own fruit mummy at home and see if it spoils more slowly than a regular, non-mummified piece of fruit. Check out the instructions here: <https://bit.ly/2UVgxLk>

