**[Mysteries of the dead](https://www.dawn.com/news/1833616/mysteries-of-the-dead)**

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ON Oct 6, 1802, Ludwig van Beethoven penned a letter to his brothers. The letter reflected perhaps the lowest point in the famous composer’s life, for it showed his frustration with the fact that he was becoming deaf. Beyond the physical dimensions of the situation, imagine an artist who cannot see or a composer who cannot hear. It is said that a deaf Beethoven, who had been conducting his masterpiece the Ninth Symphony, had to be turned around to witness the wild applause of the audience. For years, it was a mystery. Why did Beethoven become deaf?

Luckily, those who wonder about such questions may now get answers, as scientists can glean information from organic matter belonging to people who lived a very long time ago. DNA analyses have now progressed to the extent that the hair of those who lived hundreds, even thousands of years ago, can be analysed for information about health and disease, and by extension, the environment in which they lived. In the case of Beethoven, the locks of hair that have recently been analysed are bits that were cut off from his head perhaps as he lay dying. They have been confirmed by DNA analysis to have belonged to him.

An Australian who owned three locks of Beethoven’s hair wanted to honour the composer’s rather prescient wish that future scientists may figure out why he had been so sick. This is how two locks of the hair ended up at the Mayo Clinic in the US, where scientists tested it to see what chemicals and metals it might contain, which would bear clues to what happened to one of the greatest composers of all time.

As it turns out, Beethoven’s hair is now shown to have extremely high amounts of lead, some of the highest concentrations that the scientists studying the hair had ever seen. Beethoven had lead poisoning along with likely poisoning from mercury and arsenic, which were also present in high amounts in his hair. Lead poisoning can cause several effects in the nervous system and these effects can include deafness. One possible source for the high levels of lead may have been cheap wine whose taste was sweetened by the addition of ‘lead sugar’. This could build up in the body over time to cause lead poisoning.

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It is not just Beethoven’s hair that apparently solved the mystery regarding his deafness. Some years ago, the hair of another long dead person was tested. She was Isabella of Aragon, a princess of Naples, who is believed by some to have been the model for Leonardo da Vinci’s Mona Lisa. Isabella died in 1524. Her hair was also found to contain high levels of mercury — up to 50 parts per million, which is deemed toxic by the World Health Organisation that advises a limit of 5ppm. However, what is more likely to have killed Isabella was a form of leishmaniasis. Tests conducted on her bones point to this fact. Besides damaging the organs, the disease causes skin lesions that are difficult to cure. The mercury poisoning that Isabella had, scientists say, artificially suppressed her immune system, which prevented her body from fighting against the disease. Ironically, the physicians at the time administered mercury, which was considered to be a remedy for skin diseases.

If such secrets from Beethoven and Isabella of Aragon can be divulged from hair and bone analyses, then naturally using medical technology to scrutinise the remnants of Egyptian mummies, including various dead pharaohs, would yield a treasure trove of information. Some years ago, Cairo-based radiologist Sahar Saleem scanned the mummified body of Pharoah Amenhotep I who died 3,500 years ago. It was found that the pharoah was five feet six inches tall and looked a lot like his father. He had been buried with jewellery and amulets. Apparently, a dead wasp was found trapped in the sarcophagus, very likely attracted by garlands of delphiniums, safflower and other flowers that adorned the coffin.

There are countless preserved locks of hair and other such items available from important figures in the history of other civilisations as well. However, the time and effort that is dedicated to scientifically analysing the remnants of kings and queens and ordinary folk, especially in Western and pharaonic history, there appears to be little interest in such research in our part of the world, even though we stand at the crossroads of old civilisations. It would be very interesting to know more about the life and the times of the warriors and merchants and others who travelled to the subcontinent or settled there. Even more crucially, it would be fascinating to find answers to the mysteries and questions that surround ancient lore.

In all settings though, the past informs the present, and deeper knowledge of life as it was thousands of years ago can help a people understand their own evolution, especially in terms of health and disease, and how they learnt to adapt to specific environments. For instance, it would be fascinating to learn more about what ailments women suffered, what sort of bone and oral health they enjoyed — all the way from ordinary women to princesses. Such analysis can also create a sequence of knowledge that can help reveal how certain patterns of life and behaviour that are carrying into the present day may be affecting female health in the same way.

Science has a lot to tell us about the past; the mysteries of the lives of ancient people may be upheld or rejected. The question, as the world steps into this new era, is that of which mysteries deserve resolution and which ones are perhaps better left alone as ambiguities.

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