

SCIENCE SHOTS

ScienceShot: Did Lead Poisoning Bring Down Ancient Rome?

Sediments downstream from Rome reveal health risks of empire's plumbing

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When in ancient Rome, don't drink as the Romans do. High-born Romans sipped beverages cooked in lead vessels and channeled spring water into their homes through lead pipes (pictured). Some historians argue that lead poisoning plagued the Roman elite with diseases such as gout and hastened the empire's fall. Now, a team of archaeologists and scientists has discovered just how contaminated Roman tap water was. The team dredged sediment downstream from Rome in the harbor basin at Portus, a maritime port of imperial Rome, and from a channel connecting the port to the Tiber River. The researchers compared the lead isotopes in their sediment samples with those found in preserved Roman piping to create a historical record of lead pollution flowing from the Roman capital. [Tap water from ancient Rome likely contained up to 100 times more lead than local spring water](#), the team reports online today in the *Proceedings of the National Academy of Sciences*. While the lead contamination was measureable, the team says the levels were unlikely high enough to be harmful, ruling out tap water as a major culprit in Rome's demise. The team's thousand-year historical record included noticeable changes in lead pollution from Rome following major events such as the Gothic Wars in 535 C.E., Byzantine repairs to abandoned Roman aqueducts in 554 C.E., and the mid-9th century Arab sack of Rome. The team says this timeline can support historians studying the changing character of Rome and Portus during the turbulent post-empire years.

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