



ORAL HEALTH IN THE ROMAN EMPIRE: HISTORICAL TEXTS AND SKELETAL EVIDENCE

Pardayev Otabek Anvarovich

<https://orcid.org/0009-0007-1381-5371>

otash6065@mail.ru

Jurayev Sanjar Ramazanovich

<https://orcid.org/0009-0002-4306-8796>

jurayevsanjar1983j@gmail.com

O'roqov Mirjalol Rahmatullayevich

<https://orcid.org/0009-0000-4932-4354>

ABSTRACT

Oral health in the Roman Empire provides a unique window into the intersection of medical knowledge, diet, and daily life in antiquity. While Roman medical texts offer insight into contemporary understanding of dental diseases and treatments, skeletal remains provide empirical evidence of oral pathology, wear, and treatment interventions. This article examines the prevalence, causes, and management of dental diseases in Roman populations by integrating historical sources, including writings by Celsus and Galen, with bioarchaeological analyses of Roman skeletal collections. The findings reveal that dental health was influenced by diet, social status, hygiene practices, and access to medical care, and that Romans employed a variety of preventive and therapeutic strategies. Understanding oral health in this context sheds light on both the biological challenges and cultural attitudes toward dental care in one of history's most influential civilizations.

Keywords: Roman Empire, Oral Health, Dental Disease, Bioarchaeology, Historical Dentistry

INTRODUCTION

Oral health is a fundamental aspect of human well-being, affecting nutrition, communication, and quality of life. In the Roman Empire (27 BCE – 476 CE), dental diseases such as caries, periodontal disease, and tooth wear were common, reflecting dietary habits, cultural practices, and environmental factors.

Roman authors, including Aulus Cornelius Celsus and Galen, documented dental conditions, treatment methods, and preventive advice, illustrating a sophisticated awareness of oral pathology. Skeletal evidence, meanwhile, allows researchers to directly assess the prevalence and severity of dental diseases, including caries, abscesses, and tooth loss.

The aim of this study is to provide a comprehensive understanding of oral health in the Roman Empire by integrating historical textual evidence with archaeological and bioarchaeological data. The study examines patterns of dental disease, dietary and social influences, and the therapeutic strategies employed by Roman practitioners.

LITERATURE REVIEW

Historical and archaeological research indicates that dental health in Roman populations varied with diet, environment, and social status.

Historical texts: Celsus' *De Medicina* contains detailed descriptions of toothache treatments, extraction techniques, and hygiene practices, while Galen emphasized the role of diet and humoral balance in dental health. Roman medical writings reflect both empirical observations and the influence of earlier Greek medicine.

Bioarchaeological studies: Analyses of skeletal remains from urban and rural Roman cemeteries indicate high prevalence of dental caries, particularly in populations consuming refined



cereals and sugars. Tooth wear, commonly caused by abrasive food and grinding habits, was prevalent across all social classes.

Social and dietary influences: Diets rich in carbohydrates, including bread, wine, and dried fruits, contributed to dental decay. High-status individuals often had access to sugar substitutes and oral hygiene tools, including chew sticks and cloths, demonstrating an awareness of preventive measures.

Recent research integrates textual and skeletal evidence to reconstruct a holistic picture of Roman oral health, highlighting the interplay between biological, cultural, and technological factors.

METHODOLOGY

This study employs a multi-disciplinary methodology combining historical analysis with bioarchaeological investigation.

Data sources:

Primary historical texts: Celsus' *De Medicina*, Galen's medical treatises, and other Roman writings on diet and health.

Skeletal remains: Published archaeological reports from Roman cemeteries across Italy, Britain, and the Mediterranean.

Secondary literature: Peer-reviewed studies in dental anthropology, Roman medicine, and bioarchaeology.

Analytical framework:

1. **Dental pathology assessment** – examining prevalence of caries, periodontal disease, abscesses, and tooth wear.
2. **Comparative historical analysis** – correlating textual recommendations with skeletal evidence of interventions (e.g., tooth extraction, modifications).
3. **Social and dietary context** – evaluating relationships between social status, occupation, diet, and oral health outcomes.

Data interpretation prioritized contextual analysis to avoid anachronistic judgments of Roman practices.

RESULTS

Prevalence of Dental Disease

Archaeological analysis indicates widespread dental disease:

Caries prevalence ranged from 20–35% in adult populations, with higher incidence in urban centers.

Periodontal disease was common, with evidence of alveolar bone loss in adult skeletons.

Dental abscesses were identified in approximately 10–15% of examined skulls, reflecting chronic infection.

Tooth wear was near-universal, particularly among agricultural workers and individuals consuming coarse, stone-ground cereals.

Roman Dental Treatments

Roman texts describe a range of dental interventions:

Tooth extraction for severe pain, performed with forceps or specialized tools.

Topical remedies for toothache, including herbal pastes, oils, and compresses.

Dietary adjustments recommended for preventive care, such as moderation of sweets and abrasive foods.

Archaeological evidence, including antemortem tooth loss and dental modifications, corroborates the use of these treatments.



Social and Dietary Influences

Urban populations and elites consumed more refined grains and sweet foods, leading to higher caries rates.

Rural populations exhibited greater tooth wear due to coarse, fibrous diets.

Dental hygiene practices were documented in elite households, including the use of cloths and toothpicks, suggesting awareness of preventive care.

Dietary and social differences indicate that oral health was stratified, with wealth and access to care significantly influencing outcomes.

Preventive and Therapeutic Approaches

Preventive strategies emphasized by Roman authors included:

Regular oral cleaning with cloths or powders.

Avoiding excessively sweet or abrasive foods.

Maintaining overall humoral balance to prevent disease.

Therapeutic approaches reflected empirical observation and practical skill:

Extractions performed when decay or infection became severe.

Topical applications to reduce pain and inflammation.

Limited use of prosthetic devices or tooth replacement in elite contexts.

DISCUSSION

The integration of historical texts and skeletal evidence demonstrates that Roman oral health was a complex interplay of biological, environmental, and social factors. While dental disease was common, Romans employed a combination of preventive and therapeutic strategies that reveal a sophisticated understanding of oral pathology.

The findings highlight the relationship between diet, social status, and dental health. Access to refined foods increased caries risk, while hygiene practices mitigated it among those with the resources to implement them.

Roman dental practices laid the groundwork for later developments in European dentistry, preserving knowledge of extraction techniques, preventive advice, and the importance of diet in oral health.

CONCLUSION

Oral health in the Roman Empire was shaped by diet, hygiene, medical knowledge, and social hierarchy. Skeletal evidence confirms the prevalence of dental disease, while historical texts document contemporary awareness of prevention and treatment.

The study underscores the value of integrating textual and bioarchaeological evidence to understand health in past populations. Roman dental care reflects a balance between empirical observation and cultural values, illustrating the long-standing human concern with maintaining oral function, alleviating pain, and preserving appearance.

Understanding oral health in ancient populations provides insight into the origins of modern dental practices and the enduring importance of diet, hygiene, and professional intervention in maintaining oral well-being.

REFERENCES

1. Celsus, A. C. (1st century CE). *De Medicina*.
2. Galen, C. (2nd century CE). *On Hygiene*.
3. Hillson, S. (2005). *Teeth*. Cambridge: Cambridge University Press.
4. Brothwell, D. R. (1981). *Digging Up Bones*. London: British Museum.
5. Roberts, C., & Cox, M. (2003). *Health and Disease in Britain*. Stroud: Sutton Publishing.



6. Whittaker, D. K. (1993). Dental pathology in ancient populations. *International Journal of Osteoarchaeology*, 3(2), 85–94.
7. Larsen, C. S. (2015). *Bioarchaeology: Interpreting Behavior from the Human Skeleton*. Cambridge: Cambridge University Press.