DESTRUCTIVE SAMPLING OF HUMAN REMAINS: CONSIDERATIONS AND CARE


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The most recent update to 'Science and the Dead' (2023) provides guidance on sampling methodologies for a range of techniques. The aim of this BABAO guide is to provide recommendations for anyone employing or reviewing techniques which involve destructive sampling of collections of human remains. It covers how to plan a project, select and record samples, collaborate with collections staff and community partners, and ethically curate the remnants and resulting data.


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Things to consider when planning a project that involves destructive sampling

Pre-application

Contact collections in advance to obtain information about available assemblages and find out about historic sampling in case you can re-use data.

- **Obtain permission from collections**
- **Cost in access to collections**
- **Collaborate/ co-author with collections staff**


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Post-application

Collections need to be provided with data, publications, and have remnants returned.

- **Share your data and publications**
- **Return remnants ASAP**
- **Communicate mitigating factors with collections**

BABAO's position

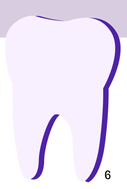
"All forms of study which involve sampling, particularly those concerned with destructive methodologies, should weigh the potential findings against resource availability and the amount of information that could be gained from such a study. All extant material, results, and associated documentation should be returned to the institution or individual who provided the samples for analysis."


4 See also BABAO 'Code of Practice' (2025), Section 9

What is at stake?

The production of new scientific knowledge needs to be balanced with preserving the integrity of human remains, through attention to ethical considerations and the complexities of **consent** and **permission**. For example:

- Have you identified any affiliated communities, descendants or stakeholders to involve? It's complicated, we know!
- Future-proofing: will your research and data be findable in the future? Will it prevent any further analyses?
- If 18th Century+ genetic relatives may be identifiable (Redfern et al., 2025), do you have a policy in place to handle requests?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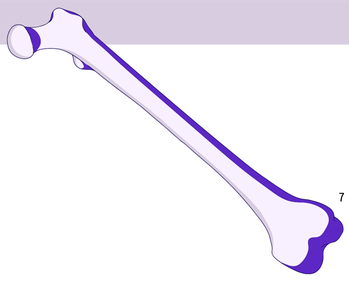
Before sampling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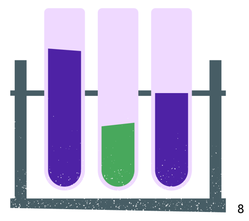
- Carry out research and due diligence:
  - Has the collection been sampled before?
  - What is the size of the collection (leading to size of potential sample cohort)?
  - How well preserved are the tissues (teeth, bone, hair, etc)?
  - Has research in this area been successful before?
  - 'Ideal' candidates for your research questions and methods
- Consider a pilot study to identify preservation of target material e.g. bone collagen
- Think about how funerary practices have affected preservation or availability of ideal samples! Who is 'missing' in your analyses?

Who and how to sample?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- Remove the minimum sample amount required
- Provide a range of data on single individuals
- Minimise samples for maximal output: e.g. a single tooth for aDNA, calculus (proteomics/ metagenomics), serial isotopes in dentine and enamel Sr/O
- Preferably remove samples from fragments or from broken margins
- Prioritise already-loose teeth
- **Avoid: teeth without antimeres; anatomical landmarks; pathological lesions; important taphonomic modifications; complete sets of ossicles**


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Best practice checklist


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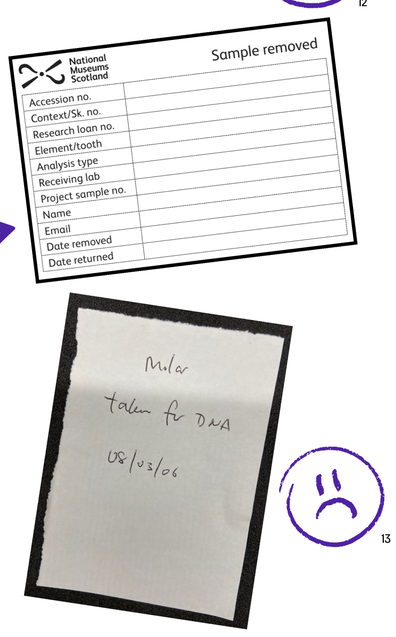
- Communicate with external/community partners; obtain permits
- Collaborate on sampling strategy
- Full osteological assessment to identify most suitable samples
- Record element before and after sampling with photographs, and ideally also in 3D
- Remove minimum sample size required
- Deposit a sample removal card
- Ensure sample metadata includes archaeological context & curating institution details
- Deposit full list of samples and images with all institutions & stakeholders
- Keep curator(s) aware of progress, share your results and raw data
- Return sample remnants to original institution
- Acknowledge/ co-author with curators/ professional staff/ communities
- Publish your ethical and sampling considerations (see Turner et al., 2018)



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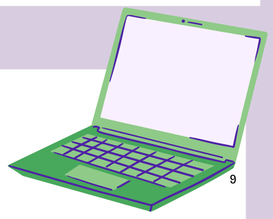
After sampling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- Deposit reports and raw data for FAIR use but consider CARE – only do this if affiliated cultural groups have provided consent
- Future research on any residues (e.g. remaining collagen, genetic extracts or libraries) requires a **new application or addendum to original** applications. As recommended by BABAO (2019b) and Squires, Booth and Roberts (2019): "...continued storage by an external researcher/institution does not confer sole access to the sample or grant permission to use the extant sample again without permission from the original curating institution".

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Resources: APABE. 2023. *Science and the Dead*; Redfern, R., Mays, S., Booth, T., Stark, S. 10/04/2025. Genetic descent: a new challenge for the management of human remains in museums. Museums Association (online); Squires, K., Errickson, D., Márquez-Grant, N. (eds). 2019. Ethical Approaches to Human Remains. Cham: Springer; Turner, T., Wagner, J., Cabana, G. 2018. Ethics in biological anthropology. *AJPA* 165: 939-951.