



## Guidance on the Treatment of Human Remains



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This document is intended for use by professionals in the field of archaeology. As such, it is considered a living document, intended for ongoing and regular updates and amendments, dependent on changing legislation, policies and guidelines. Each succeeding iteration, therefore, should be produced with both a version number and year of amendment.

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# PREFACE



This Institute of Archaeologists of Ireland (IAI) technical paper represents a revision of the earlier publication of the same name by authors L. Buckley, E. Murphy and B. Ó Donnabháin (2004). In an initiative proposed by the IAI, members of the Irish Association of Professional Osteoarchaeologists (IAPO) came together with representatives from the National Museum of Ireland and the National Monuments Service to begin the work of reviewing and updating the document. The central tenets of the original technical paper have endured, with the fundamental processes involved in the treatment and processing of human remains largely unchanged. However, in the intervening 20 years there have been some inevitable advancements, in the scientific, technical, and legal spheres. IAPO committee members endeavoured to create a document that would be useful and instructive to the archaeological community, and would illustrate best practice approaches to the discovery, excavation, and post-excavation treatment of human remains.

The following paper is the result of that collaboration.

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# 1. INTRODUCTION

Human remains are frequently encountered on archaeological sites around Ireland and can occur, in varying quantities, from a single isolated prehistoric inhumation or cremation to cemetery sites containing hundreds of medieval or post-medieval burials.

Specialists who analyse human remains from archaeological contexts are variously referred to as osteologists, bioarchaeologists/biological anthropologists and osteoarchaeologists. In this document the latter term will be used in recognition of its most frequent use within Irish archaeology. This document will outline the use and place of the osteoarchaeologist on sites containing human remains, and will attempt to illustrate the ways in which optimal excavation results can be facilitated and assisted by the osteoarchaeologist.

Where reference is made to an osteoarchaeologist, employed to consult on human skeletal remains, it is defined here as a person with a post-graduate degree in the field of human osteoarchaeology to at least Masters level/NFQ 9 (National Framework of Qualifications, level 9)/FHEQ 7 (Framework for Higher Education Qualifications for England, Wales, and Northern Ireland) and should, ideally, be a person experienced in the excavation of burial grounds. A list of currently active osteoarchaeologists can be obtained from the Secretary of the IAI.

Fig. 1 Early medieval burial (Photo: Maeve Tobin, IAC Archaeology)



## 2. LEGAL CONSIDERATIONS

### IN THE EXCAVATION OF HUMAN REMAINS

#### 2.1. Ireland (IE)

For the commencement of any archaeological excavation in Ireland (IE), it is necessary that an application for a licence to excavate be made to the National Monuments Service (NMS), at least three weeks prior to the date on which the excavation is due to commence. The application must be accompanied by a detailed method statement and assurances that sufficient funds and other facilities are available to complete the archaeological excavation, post-excavation, and preliminary and final reports (see <https://www.archaeology.ie/licences/archaeological-excavation>). If the site is considered likely to produce human remains, the details of an osteoarchaeologist are to be provided in the excavation method statement. It is advisable to confirm the osteoarchaeologist's availability before completing this section, to avoid any delays or difficulties at a later stage. The excavation of human skeletal remains can be exceptionally costly and time-consuming, and all parties should be made aware of the significant cost implications and potential impact to the programme associated with the project, prior to its commencement.

If unexpected, discoveries of human remains on licenced excavations in Ireland (IE) must be reported to An Garda Síochána and thereafter referred, by them, to the Coroner (Coroner's Act, 1962). Where remains are discovered unexpectedly, outside of the context of archaeological investigation, work must cease immediately, and the area temporarily cordoned off until it is established that the remains are historic as defined by Section 115, Subsection 2, paragraph a of the [Historic And Archaeological Heritage And Miscellaneous Provisions Act 2023](#) (HAHMP 2023 Act). This states that if, after consultation between the Board of NMI and the coroner, the Board is satisfied that the remains are archaeological, the remains should be dealt with in accordance with the Act and the coroner should take no further action. The director of an excavation is also obliged to report the discovery to the NMS, as a condition of the excavation licence, and an updated method statement may be required.

Once it is established that the remains are not recent, they are considered to be archaeological objects. Under the HAHMP 2023 Act, the legal definition of an archaeological object includes ancient human remains. Ownership of any archaeological object with no known owner is vested in the State, and the NMI is the State repository for all such archaeological objects. As a result, decisions regarding the ultimate deposition of the remains rest with the NMI and no commitments should be undertaken regarding the future location of excavated human remains.

It should be noted that, for more recent burials of 19th and 20th century date, located within recognised burial grounds, an exhumation license may also be required, in addition to an excavation license, under section 46 of the [Local Government \(Sanitary Services\) Act 1948](#).

A further legislative consideration may be encountered with regard to institutional burials. The Institutional Burials Act (2022) seeks to ensure that the remains of those who died in residential institutions, and who were buried in a manifestly inappropriate manner, may be recovered and re-interred in a respectful and appropriate way. Human remains that may be considered under the Act must also be reported to the coroner.

## 2.2. Northern Ireland (NI)

It is a legal requirement, under the Historic Monuments and Archaeological Objects (NI) Order (1995), to obtain a 'Licence to Excavate for Archaeological Purposes' from the Department for Communities (DfC) before conducting an archaeological excavation in Northern Ireland. As part of the licence application, it is necessary to state whether human remains are expected and to include proposed contingency actions for their discovery. Where it is known that remains will likely be encountered, an osteoarchaeologist should be engaged from the earliest point in the creation of the Programme of Works (POW).

Where remains are discovered unexpectedly, within the context of archaeological excavation, it must be reported to the Police Service of Northern Ireland (PSNI) and the Historic Environment Division (HED). Once it has been established that the remains are of archaeological origin, an addendum to the Programme of Works must then be provided with a proposed site-specific methodology (for more details see 2024 HED publication *Guidance for the Treatment and Care of Human Remains from Archaeological Excavations in Northern Ireland*).

Where remains are discovered unexpectedly, outside of the context of archaeological investigation, work must cease immediately and the area temporarily cordoned off, until police have established, in conjunction with advice from an osteoarchaeologist/HED, that the remains are historic.

If it is anticipated that human remains will be encountered during an archaeological excavation, it is the director's responsibility to ensure that the requirements of the relevant lawful authority are complied with before the excavation commences. If excavation is to take place in a burial ground that belongs to a district council, it is necessary to obtain written consent from the DfC for exhumation in compliance with Burial Grounds Regulations (Northern Ireland) 1992. Departmental consent is not required, however, where a coroner gives a direction under Section 11 of the Coroners Act (NI) 1959.

Under the Protection of Military Remains Act 1986, it is an offence to interfere, without a licence from the Ministry of Defence (MoD), with the wreckage of any crashed, sunken or stranded military aircraft or designated vessel. Excavation of such sites requires a Licence from the Ministry of Defence in addition to a Licence to Excavate for Archaeological Purposes (see HED 2024).

If excavation is to commence on Church of Ireland property, it is necessary to obtain a 'faculty' from the Diocesan Registrar. If human remains are discovered in the course of the works, it must be discussed with the religious body and agreement made with regard to the treatment of the remains.



## 3. EXCAVATION STRATEGY

### 3.1 Health and Safety

It is a legal obligation that a Safety Statement (IE) or Risk Assessment (NI) be in place for all archaeological works being undertaken on the island of Ireland. It is imperative that burial sites comply with the requirements laid down by the Project Design.

The excavation of dry human skeletal remains from archaeological contexts poses little or no risk of infection, as micro-organisms are no longer viable after approximately six months. However, normal on-site precautions, such as handwashing and maintenance of tetanus booster injections, should be continued.

Relevant precautions should be followed where the excavation of crypt burials, or burials in lead/solid-wood coffins is concerned, due to the health risks posed by the inhalation of lead or wood dust (APABE 2017, 42). Soft tissue preservation in such instances may also pose a health risk, albeit negligible in most cases, and should be considered in the project risk assessment. Anthrax can form spores where soft tissue is preserved and, although infectivity is likely to be low (ibid), appropriate precautions should be taken to ensure a safe working environment. Additional protective equipment including overalls, face mask (FFP3), face shield, and waterproof gloves should be provided. The site risk assessment should detail the precautions to be followed, the PPE to be worn, and any immunisation injections (e.g. Smallpox) required (Cox 2001).

Archaeological burials displaying soft tissue preservation may give rise to PTSD (Post Traumatic Stress Disorder) in some excavators. It is recommended that the resources of the Health and Safety Authority (HSA, IE)/Health and Safety Executive (HSE, NI) are used in mitigating such risk. It may be desirable, at the recruitment stage, to select staff with forensic and/or medical training. Further useful information on the excavation of crypt/coffin burials can be found in Cox (2001).

### 3.2 Ethical Concerns

Human remains should be treated with care and dignity at all times. It is important for archaeologists to acknowledge that these are both the remains of past people and a finite resource in archaeological research. Preservation in situ should be the overarching principle for human remains with excavation and retrieval only taking place by necessity.

Photographs of human remains should never be taken or shared for personal entertainment. In modern archaeological excavation, most site staff will have access to high quality digital photography in the form of personal devices. Directors may therefore find it useful to display the BABAO (British Association of Biological Anthropology) “Photographing Human Remains” infographic (**Appendix 1**) in staff areas to ensure all team members are aware of the importance of the ethical use of images and representations of human remains (available at <https://babao.org.uk/resources/guidelines-codes/>). It is the responsibility of the person taking photos with a personal device to ensure that the resulting images are treated with respect. This should be emphasised with the excavation team during a Toolbox Talk.

It should be recognised that the excavation of human remains can be a subject of concern for contemporary society, and for modern religious groups. In large part, the excavation of human remains elicits interest and general support from the public. Public engagement and knowledge dissemination are important elements of archaeological endeavour. However, a careful balance must be struck in relation to human remains. Where a site is located in an area of frequent public passage, efforts should be made to shield the excavation of remains from casual view. Where members of the public, or other visitors to site, will encounter human remains on open view, they should be advised of this prior to commencing walkover, and be given the option to avoid viewing, where possible.

### 3.3 The Osteoarchaeologist

The osteoarchaeologist should be consulted at all stages of the project from planning to excavation, and onwards to post-excavation processing and museum accession. Engagement at the planning stage provides for the osteoarchaeologist to assist with the compilation of the excavation method statement. During this period, it is likely that an estimate of the approximate number of burials, their density, arrangement, and taphonomic status will be required, and engaging with the osteoarchaeologist at this stage can help with fulfilling these requirements.



Fig. 2: Excavation of a complex Early Medieval burial deposit containing multiple individuals.  
(Photo: Maeve Tobin, IAC Archaeology)

During the excavation, the osteoarchaeologist should ideally be present on site for the duration. This may not always be feasible, and in those cases, arrangements should be made for the osteoarchaeologist to visit regularly to advise on the recovery and recording of remains, and deal with any issues arising. It can be useful to have the osteoarchaeologist present a Toolbox Talk at the outset, to ensure all site staff are trained to a comparable level and that site-specific procedures, designed for the particular characteristics of the project, are followed by all.

There are several situations where the osteoarchaeologist should be consulted with greater frequency and should, if possible, be present for the duration of the excavation.

#### Such scenarios include:

- large numbers of burials (100+ individuals)
- sites of particular sensitivity
- complex stratigraphy

(such as in densely utilised cemeteries where frequent intercutting of burials occurs)

- poor preservation
- artefact involvement
- where block lifting is required
- occurrence of mass/multiple burials

## 3.4 Excavation of Inhumated Remains

Adoption of the following procedures should ensure optimal preservation and retrieval of any human skeletal material encountered during excavation. It is advised that all staff members are made aware of this document and that each excavator is in possession of a copy of the IAI 'On-site Skeleton Prompt Sheet' (see **Appendix 2**) which gives detailed instructions on how to complete the on-site recording forms.

### 1.1.1 Exposing the Remains

Human remains should only be exposed/cleaned back if it is certain that they will ultimately be lifted. If the remains are to be preserved *in situ*, the grave and any visible surface bone, should be recorded, but the skeleton should remain within the soil matrix without disturbance. This includes the entirety of the preserved remains. No bone or tooth samples should be taken without the express permission of the NMI.

If a skeleton is positioned in such a way that it is not possible to completely excavate the remains (e.g. where it is protruding from a section face at the limit of excavation or partially exposed in an eroded cliff face), then as much as possible of the skeleton should be retrieved with minimum intervention to the residual remains.

When excavating a grave with the purpose of exposing the skeleton for eventual recovery, some useful points should be borne in mind by the excavator.

- To minimise damage to a skeleton, it should be completely exposed, recorded, and removed in a single day. If there is no alternative to leaving an excavated/exposed skeleton in situ overnight, it should be carefully covered with polythene and precautions taken to ensure that no foot traffic is likely to pass over the area.
- Trowels/leaf trowels and/or wooden or plastic small tools may be used to expose and clean the remains, and soft brushes may be used in dry weather.
- When beginning to expose the skeleton, excavators should avoid kneeling/working within the grave cut, since this can subject underlying material to destructive compressive forces and can also cause the collapse of voids which may be present in coffin and cist burials.
- It can be helpful to first establish the location of the long bones to determine the layout of the skeleton (extended/crouched/disarticulated/comingled). It is important to not fully expose them at this stage but rather to use their location as a guide as to how to approach the excavation. This is particularly useful where there is complex burial stratigraphy.
- Cleaning the areas of the thorax and the abdomen, especially the pelvis, should be done with particular care. Delicate foetal bones may sometimes be encountered in the pelvic region and other biological elements such as calcified tissues, or bladder stones also occasionally occur in the abdominal area (Fig. 3).



Fig. 3: Kidney stones retrieved from the pelvic region in buried remains. (Photo: Denise Keating)



- Cautious soil extraction is necessary around the dentition to avoid dislodging plaque deposits which contain important palaeopathological and biomolecular information. Similarly, excavators should avoid over-cleaning around the orbits (eye sockets) and nasal cavity, as the bones in this area are particularly delicate.
- The skeleton must be left *in situ* until all the bones are exposed.
- When excavating/exposing foetal, neonatal (newborn), perinatal (approximately full term), and infant (<1 year) remains, all soil should be recovered for sieving. This will ensure maximum retrieval of small unfused bones and developing dental buds.

## 1.1.2 Recording the Skeleton

### RECORD

A Burial Number or Skeleton Number, and a site context number, should be assigned to each skeleton and a skeleton recording sheet (Fig. 4) completed. Standardised forms suitable for recording primary inhumations of adults, juveniles, and infants should be utilised (see **Appendix 3**). The accompanying 'On-site Skeleton Prompt Sheet' (Fig. 5) (see **Appendix 2**) gives detailed instructions on how to complete the recording form.

As skeletal remains are considered to be archaeological objects each skeleton must have an assigned Finds Number in the accepted format for accession to NMI (IE). Details can be found in 'Standards for the Treatment and Care of Archaeological Objects from Excavations', National Museum of Ireland (2022) (see [Standards for the Care and Treatment of Archaeological Objects from Archaeological Excavation](#)). Further assistance can be obtained by contacting the Antiquities Duty Officer at [antiquitiesdo@museum.ie](mailto:antiquitiesdo@museum.ie).

Fig. 4: On-site recording form for adult burials.

Fig. 5: On-site skeleton recording prompt sheet.

## PLAN

A labelled plan of each individual skeleton at a scale of 1:20 should be made (Fig. 6). The plan should be fully labelled with the skeleton number and associated contexts (such as cut, coffin, stone lining, etc.). The location of any artefacts should also be identified and surveyed. Occasionally, the osteoarchaeologist may request a plan of an unusual burial at a scale of 1:10.



Fig. 6: An archaeologist creates a scale drawing of a burial with the aid of a planning frame. (Photo: Maeve Tobin, IAC Archaeology)

## PHOTOGRAPH

Photographs of the overall view of each skeleton should be taken, with the burial number, context number, north arrow and scale clearly visible. In as far as is possible, the primary photo should be taken in plan (i.e. from above, as it would be drawn in plan form). This will help to avoid skewing observation of the burial position and pathologies. Detailed, close-up, photographs should also be taken in cases where pathology, grave goods, or unique burials are identified (e.g. if the skeleton is in an unusual position, if a foetus is present in the abdominal area, or if unusual palaeopathological lesions are apparent). Photogrammetry may be used to complement traditional methods of recording. This method produces a 3D photographic model of a burial or skeletal element, that can then be manipulated to produce scaled georeferenced 2D images at a variety of viewpoints. It requires the photographer to take a series of overlapping images at varying angles of the subject matter, with the aim of recording all facets, several times (Fig. 7). Insufficient photographs or poor-quality images will inhibit the ability of the processing programme to produce a useable image, and therefore this is best carried out by someone with experience in the technique.





Fig. 7: Visual recording of an Early Medieval burial using photogrammetry and rectified photography  
(Photo: Maeve Tobin, IAC Archaeology)

### RECORD LEVELS AND SPOT HEIGHTS

The position of each skeleton should be surveyed as an indicator of posture, with spot heights and levels taken at most, or all, of the following articulation points: top of head, neck, pelvis, hips, knees, feet, shoulders, elbows and hands. A minimum of head, sacrum and feet will give the general profile of the remains.

### SAMPLE

Soil samples should be taken from the area around the skull, as well as from around the pelvis (directly over the sacrum), hands, and the feet. This will help to ensure that any dislodged teeth, abdominal remains (foetal remains/bladder stones etc) and loose foot elements are retrieved. Bulk samples may be taken in any area where it is felt that small bone fragments may be lost (such as in the area of the hands or where poor preservation makes lifting problematic). The osteoarchaeologist can provide further instruction if further samples are required for parasitic testing, for example.



### 1.1.3 Lifting the skeleton

Once recording (planning, context sheets, burial recording form, sampling, and photography) has been completed, preparation for lifting can begin. Standard self-sealing polythene finds bags with white, write-on panels, are the most suitable for bagging the constituent parts of the skeleton. Each bag should be labelled using permanent black marker with the site name, excavation number/registration number, skeleton number, skeleton element, context numbers (burial cut and fill), and the date and initials of the excavating archaeologist. Details of the skeletal element contained within the bag should be included on the label. A list of the major skeletal areas, by which the skeleton should be bagged, is shown below. (Fig. 8). Note that small ventilation holes should be made at the top of each bag to allow air to circulate and prevent moulding of the remains. A Tyvek label containing all of the identifying information should also be included in each bag prior to accession to the NMI.

<b>BAG 1</b>	• Cranium
<b>BAG 2</b>	• Mandible & loose teeth
<b>BAG 3</b>	• Manubrium & Sternum
<b>BAG 4</b>	• R Shoulder (scapula & clavicle)
<b>BAG 5</b>	• L Shoulder (scapula & clavicle)
<b>BAG 6</b>	• R Ribs
<b>BAG 7</b>	• L Ribs
<b>BAG 8</b>	• Vertebral Column
<b>BAG 9</b>	• Pelvic girdle (hips and sacrum)
<b>BAG 10</b>	• R Arm (humerus, radius, ulna)
<b>BAG 11</b>	• L Arm (humerus, radius, ulna)
<b>BAG 12</b>	• R Hand
<b>BAG 13</b>	• L Hand
<b>BAG 14</b>	• R Leg (femur, tibia, fibula, patella)
<b>BAG 15</b>	• L Leg (femur, tibia, fibula, patella)
<b>BAG 16</b>	• R Foot
<b>BAG 17</b>	• L Foot
<b>BAG 18</b>	• Disarticulated or associated bone

Fig. 8: Recommended bagging protocol for skeletal remains

For a complete skeleton – either adult or juvenile – a minimum of 17 bags will typically be used, although, the number of bags will depend on the preservation and completeness of each skeleton. In addition, the osteoarchaeologist may request that unique or fragile elements be bagged separately. If a skeleton or partial skeleton is in a very poor state of preservation each bone can be dried, wrapped in acid-free paper, and then bagged and boxed.

Disarticulated human and animal remains frequently occur within a grave cut. These should be bagged and boxed with their associated skeleton. Disarticulated bone will require a separate context number, as per NMI protocols (see [Standards for the Care and Treatment of Archaeological Objects from Archaeological Excavation](#)).

Once the remains of a single skeleton have been lifted, bagged and labelled, the bags should be placed in a large, clearly marked box. Heavier bone, and any disarticulated/animal remains, should be placed at the padded base of the box, with lighter bone placed on top (Figure 9). Bubble wrap, polyethylene foam or acid-free tissue may be used for padding in the short-term, however only the latter two will be accepted for long-term storage in the NMI.

A complete adult skeleton should fit in one box, with the bags placed in three layers.

- Layer 1** should contain the lower limbs, placed on either side of the box. The upper limb bags can then be placed between the right and left lower limb bags. This leaves room at either end of the box so that the bags containing the right and left hand can be placed at one end, and the right and left foot bags at the other end. This layer can also contain any retent associated with samples taken for fragment recovery if it is thought that small fragments of bone are included within.
- Layer 2** includes the cranium which is to be placed at the centre of the box, on top of the upper limbs. The vertebrae and pelvic girdle bags are then placed on either side, along the length of the box.
- Layer 3** comprises the more fragile elements of the skeleton. This includes the right and left ribs, which can be placed on either side of the cranium. The mandible, right and left shoulder, manubrium/sternum and any other small bags are placed around the skull at either end. No bags should be placed on top of the skull.



Archaeologically derived skeletons will often be incomplete, due to an array of natural and anthropogenic factors, such as soil acidity, faunal activity, disturbance by overlying vegetation, and the intercutting of graves. In such cases, multiple skeletons can be placed into a single box. When multiple skeletons are present in a single box, the collective bags of a single individual should be placed in one larger bag and labelled as described above. The remains of a largely complete skeleton should never be split between multiple boxes.

Unprocessed soil samples and/or associated artefacts or animal bone should not be boxed together with human remains.

## 3.5 Excavation of Cremated Remains

Cremated human remains are commonly encountered during excavations in Ireland, primarily from prehistoric contexts. These burials can be contained in urns, or can occur as un-protected deposits within graves or as token deposits in other cut features.

Detailed and methodical recording of these deposits is necessary in order that differing forms of cultural behaviour are made clear. A context number should be given to each distinct bone deposit. The incineration of a cadaver does not reduce the bones to ashes. Rather, cremation produces large pieces of burnt bone, more brittle and more fragile than unburnt bone (Fig. 10). There is increasing evidence that cremated bone was processed in various ways in the past (McKinley 2004). This includes mortuary rites such as the deliberate crushing of remains, the sorting of pyre materials, the redeposition of pyre debris or the creation of so-called 'cenotaph' deposits (<25g burnt bone) (McKinley 2004, 10). Comprehensive and systematic recording is key to uncovering some of these unseen mortuary rites.



Fig. 10: Early Bronze Age cremated remains. (Photo: Maeve Tobin, IAC Archaeology)



Where the presence of cremated remains is anticipated on a site, engagement with an osteoarchaeologist and an environmental specialist should maximise the information that can be gleaned about its associated mortuary ritual. Consultation with a conservator and a pottery specialist will also be required in the case of urned burials.

Archaeological excavation has shown the importance of the funeral pyre (O' Donnell 2016). If evidence of a cremation site is found (such as an area of intense burning or blackened deposits containing minute inclusions of burnt bone), consultation with the osteoarchaeologist and environmental specialist is advised. As well as cremated material, pyre debris may contain fuel ash, charcoal, and the remains of funerary offerings, the analysis of which can provide valuable information on past funerary rites. Full recovery of the context should be undertaken. The specialists will advise on the excavation strategy to be implemented to maximise data on the distribution of material within the pyre site.

As is the case with unburnt remains, where the preservation of human remains in situ is being considered, consultation with the NMI and the osteoarchaeologist is necessary. Archaeologists should not expose or clean back an area containing human remains unless it is certain that the remains concerned will be lifted.

**Some general rules for the excavation of cremation deposits are detailed below:**

- » If the cremated remains are not contained in a pot, the cremated material should be completely excavated in the field in spits of 5 cm in depth, bagged separately, and clearly labelled. This allows the osteoarchaeologist to check for differential deposition within the deposit. Photographs and, where possible, scaled drawing (1:10) of each spit should be made.
- » If the remains are contained in an undisturbed urn or other complete pot, the vessel should not be emptied in the field. It should be retrieved with its contents so that it can be excavated in a laboratory environment (Fig. 11). The conservator, in collaboration with the pottery specialist, will advise on the most appropriate lifting technique to be employed. In the case of inverted urn burials, cremated bone that has slumped out of the vessel should be recovered on site using the same methodology as that used for un-urned burials.
- » In the laboratory, the urned remains should be excavated in spits of a depth of 2 cm by the conservator, in consultation with the osteoarchaeologist.
- » The entire contents of the context in which the cremated remains occur (i.e. soil, charcoal, pebbles, ash) should be retrieved.
- » Large bone fragments that are recovered during the excavation should be bagged separately, clearly labelled and packed in boxes to prevent further fragmentation to bone.
- » If there is any unusual variation in the manner of deposition of the cremation, or if redeposited pyre material is suspected, the osteoarchaeologist must be consulted, as a more detailed recording of the distribution of the remains may be necessary.
- » Once recording (planning, context sheets, burial recording form, and photography) has been completed, preparation for lifting can begin. Standard self-sealing polythene finds bags with white, write-on panels are the most suitable for bagging each distinct deposit. Each bag should be labelled using permanent black marker with the site name, excavation number/registration number, context numbers (cut and deposits), and the date and initials of the excavating archaeologist provided. Details of excavation spits contained within are also to be recorded on the bag label. Heavy deposits should be double-bagged for security. A Tyvek label containing all of the identifying information should also be included in each bag prior to accession to the NMI.
- » A layer of acid-free tissue or Polyethylene foam should be placed on the base of the box prior to filling, and another layer placed over the top of the remains before the lid is placed. As per NMI protocols any voids or gaps in the box should be filled with acid free tissue to avoid movement of bone.

## 4. POST-EXCAVATION TREATMENT

### 4.1. Washing and Drying

#### 1.1.4 Inhumations

Remains should be processed directly after excavation or, where possible, during the excavation if an appropriate washing area is available. Soil is more likely to cause damage if allowed to adhere to the bone for prolonged periods.

The greatest concern with washing multiple burials is in ensuring that no admixture of bones occurs between skeletons. To achieve this, designated washing and drying stations should be set out for processing one skeleton at a time.

It is advisable to consult with the project's osteoarchaeologist before washing commences. However, some useful guidelines are detailed below.

- Excavated human remains should be washed using soft brushes and/or damp sponges in a shallow basin of lukewarm water.
- Bones should never be completely immersed or allowed to become saturated.
- Each member of the team should wash only the remains of a single skeleton at a time.
- Water should be changed regularly and, when disposing of muddied water, should be drained through a 2 mm sieve to prevent loss of smaller bones and teeth.
- Water should also be changed between skeletons to avoid admixture of remains.
- When washing teeth, care must be taken not to damage the enamel or remove deposits of dental calculus. A toothbrush will remove these important deposits and therefore a damp sponge is preferable.
- For complete crania, it is important to ensure that all soil is removed from the interior. Soil left in the cranium will tend to shrink and harden, causing damage to endocranial bone structures. Care should be taken not to place the fingers in the orbital or nasal cavities when handling the cranium.
- The osteoarchaeologist may request that poorly preserved material not be washed. Bone that is not washed should be allowed to dry completely. Excess soil and dust can be removed by careful brushing before the remains are bagged.
- Once the remains have been washed, bones should be allowed to dry at room temperature in a secure environment, out of direct sunlight.
- Bones must be completely dry before they are bagged to avoid the proliferation of mould.
- Bags should be pierced with small ventilation holes before boxing in storage containers
- Remains are best stored at temperatures between 16o–20oC and at humidity of 45% ±5% (SMA 2022).

If the remains are to be stored for any length of time either before or during their analysis, they should be stored in suitably strong boxes, appropriately labelled, and stored out of direct sunlight. It should be noted that, if the same post-excavation storage boxes are used for accession to the NMI (IE), they must comply with the relevant accession requirements (refer to Section 5.4 below).

## 1.1.5 Cremations

Given their unstable nature, cremation deposits should not be processed until the osteoarchaeologist has been consulted. Should the osteoarchaeologist deem it appropriate, the cremated bone can be cleaned via careful wet or dry sieving to 1 mm mesh size. All extraneous material (such as stones and other coarse components) within the residue should be removed.

Small finds (e.g. beads, worked flint, small metal/bone fragments) and ecofacts can also be recovered during the processing of cremation deposits, thereby necessitating collaboration with the environmental archaeologist and the small finds specialist. The flots or ecofacts need to be given to a charcoal specialist/ archaeobotanist, to inform identification of fuel type and other pyre components, etc. Once dry, the cremated bone should be placed in clean, self-sealing polythene bags which have been clearly labelled. The bone from each spit should be kept separate throughout the process.

The cremated bone needs to be sieved and sorted. It should be sieved through 10 mm, 5 mm and 2 mm sieves. For the 5 mm and greater fractions, the processing team should hand extract bone, finds, etc. Sorting the 2 mm fraction may not be economically viable for non-specialists, and so these should be bagged and sent to the osteoarchaeologist, who can extract identifiable bone.

'Retents' of cremation deposits (e.g. the 2 mm and <2 mm fractions) are to be kept and retained as part of the national collection.



Fig. 11: Post-excavation processing of a cremation deposit under lab conditions. (Photo: Maeve Tobin, IAC Archaeology)



## 4.2 TRANSFER TO THE OSTEOARCHAEOLOGIST

An osteoarchaeological report is required for all excavated human remains. Accession to the NMI (IE) cannot be granted without the appropriate accompanying specialist report. In order to construct a properly contextualised report, where the remains are considered within their temporal, geographical, and cultural setting, the osteoarchaeologist requires access to the following:

- all skeletal material, appropriately packaged and labelled
- copies of the completed on-site skeleton recording sheets
- photographic records of the burials and any relevant contexts
- an overall plan of the site (scale 1:50) and plans of individual skeletons (scale 1:20)
- a preliminary site report with summaries of stratigraphic and dating evidence, if any.

## 4.3 BIOCHEMICAL AND BIOMOLECULAR SAMPLING

Archaeologists may wish to conduct tests on human bone for radiocarbon dating, aDNA profiling, or isotope analysis. Sampling for biomolecular testing may be conducted by the osteoarchaeologist as part of the programme of analysis. While C14 dating and consequent measurement of carbon and nitrogen isotopes is a general requirement, additional programmes of sampling for Strontium, Oxygen and/or aDNA should only be carried out as part of research projects where specific research questions are to be addressed. In order for any destructive testing to take place a licence must first be obtained from the NMI (IE) to alter an object. A research rationale may also be required depending on the type of testing in question. Where the object will leave the State for analysis, a licence to export must be also obtained for within the EU (from the NMI) and outside the EU (from both NMI and Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media). Export of remains to NI from Ireland does not require a non-EU licence. Advice notes for the completion of Alter and Export forms can be found at [NMI Advice Notes Alter and Export](#). In Northern Ireland proposals for testing human remains must be included in the Post-excavation assessment report submitted to HED within four weeks of the conclusion of the excavation. Work should not commence until the Post-excavation assessment report has been approved by HED. Human remains do not require an export licence if moved out of the UK jurisdiction, unless they have been altered and turned into cultural objects by human modification. If the latter, an export licence can be applied for to Arts Council England who manage this process.

A sample of the appropriate weight and type should be selected by the osteoarchaeologist in a way that ensures as little of the remains are sacrificed to the testing process as possible. Each sample should be weighed and photographed for entry into the final osteological report and, following lab testing, any residual material must be returned to the assemblage.

Whilst radiocarbon dating is the most commonly practiced test, it should be noted that some radiocarbon dating laboratories conduct carbon and nitrogen isotope analysis as a by-product of the process, so it is worth checking if isotope data may already be available. A brief outline of the uses of isotope analysis is presented in Appendix 4.

## 4.4 ACCESSION TO MUSEUM STORAGE FACILITIES

For human remains in Ireland (IE), the osteoarchaeologist will return the material to the excavation director, on completion of the osteological report. The licensee has the responsibility for organising its short-term care and eventual accession. Within jurisdiction, all excavated human remains are considered archaeological objects and the NMI therefore has responsibility for their long-term curation. Strict procedures are in place for accession of archaeological objects to the NMI. For guidance on accession, the NMI document “Standards for the Care and Treatment of Archaeological Objects from Archaeological Excavations” should be consulted. This document gives guidance on such details as the appropriate types and sizes of containers/boxes that are accepted by NMI and the assigning of unique find number for inhumations, cremations, and disarticulated remains. Contact with the Duty Officer is advised for any enquiries or clarifications that are required.

The Historic Environment Division (HED 2024) document “[Guidance for the Creation and Care of Archaeological Archives in Northern Ireland](#)” should be consulted in conjunction with “Guidance for the Treatment and Care of Human Remains from Archaeological Excavations in Northern Ireland” for advice on long term storage.

## 4.5 REBURIAL

Reburial may only take place in Ireland (IE) at the discretion of the Board of the NMI (as delegated to the Director of the NMI). Whether chance discoveries, or found in the course of licensed archaeological excavation, human remains are included in the definition of ‘archaeological object’ under the terms of the [Historic And Archaeological Heritage And Miscellaneous Provisions Act 2023](#) (HAHMP 2023 Act) and may be claimed by the NMI on behalf of the State (NMI 2019). Irish archaeological human remains can be considered for de-accession by NMI on the basis of a written application to the Director, NMI. The NMI human remains policy document can be found at [NMI Human Remains Policy](#).

With regard to assemblages of human remains in NI, the osteoarchaeologist must make a recommendation, in consultation with the licensee on the selection, retention or reburial of the remains (HED 2024). Where reburial is recommended, consideration should be given to the relevant stakeholders such as church authorities, local communities and sponsors.

## 5. RECOMMENDED READING

- » Advisory Panel on the Archaeology of Burials in England. 2017. Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England. Second Edition.  
[CHRISTIAN BURIAL GROUNDS](#)
- » Advisory Panel on the Archaeology of Burials in England. 2023. Science and the Dead: Destructive Sampling of Archaeological Human Remains for Scientific Analysis. Second Edition.  
[SCIENCE AND THE DEAD: DESTRUCTIVE SAMPLING](#)
- » British Association of Biological Anthropologists and Osteoarchaeologists. 2019. Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Imaging of Human Remains.  
[BABAO GUIDELINES & CODES](#)
- » British Association of Biological Anthropology and Osteoarchaeology. 2019. Code of Practice.  
[BABAO GUIDELINES & CODES](#)
- » British Association of Biological Anthropology and Osteoarchaeology. 2019. Code of Ethics.  
[BABAO GUIDELINES & CODES](#)
- » Burial Grounds Regulations (Northern Ireland) (1992)  
[LEGISLATION.GOV.UK](#)
- » Coroners Act (1962)  
[IRISH STATUTE BOOK](#)
- » Cox, M. 2001. Crypt Archaeology: an Approach. Institute of Field Archaeologists. IFA Paper 3.  
[CRYPT ARCHAEOLOGY](#)
- » Historic England. 2018. The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon. Historic England.  
[THE ROLE OF THE HUMAN OSTEOLOGIST](#)
- » Historic Monuments and Archaeological Objects (Northern Ireland) Order (1995)  
[LEGISLATION.GOV.UK](#)
- » Historic and Archaeological Heritage and Miscellaneous Provisions Act 202  
[IRISH STATUTE BOOK](#)
- » Historic Environment Division. 2024. Guidance for the Treatment and Care of Human Remains from Archaeological Excavations in Northern Ireland.  
[HUMAN REMAINS NORTHERN IRELAND](#)
- » Institutional Burials Act (2022)  
[IRISH STATUTE BOOK](#)



## 5. RECOMMENDED READING

- » Institute of Archaeologists of Ireland. 2006. Code of Conduct for Treatment of Human Remains.  
[IAI CODE OF CONDUCT](#)
- » McKinley, J. 2004. Compiling a skeletal inventory: cremated human bone. In Guidelines to the Standards for Recording Human Remains, 9–13. IFA Paper No. 7. Southampton & Reading. BABAO / IFA.  
[IFA PAPER 7](#)
- » McKinley, J. I. and Roberts, C. A. 1993. Excavation and post-excavation treatment of cremated and inhumed human remains. IFA Technical Paper 13.  
[IFA TECHNICAL PAPER 13](#)
- » Mitchell, P. and Brickley M. (eds) 2017. Updated Guidelines to the Standards for Recording Human Remains. Chartered Institute for Archaeologists / BABAO.  
[STANDARDS FOR RECORDING HUMAN REMAINS](#)
- » National Museum of Ireland. 2019. National Museum of Ireland: Human Remains Policy  
[NMI HUMAN REMAINS POLICY](#)
- » National Museum of Ireland. 2022. Standards for the Care and Treatment of Archaeological Objects from Excavations  
[NMI OBJECTS FROM ARCHAEOLOGICAL EXCAVATION](#)
- » National Monuments (amendment) Act (2004)  
[IRISH STATUTE BOOK](#)
- » O' Donnell, L. 2016. The power of the pyre - A holistic study of cremation focusing on charcoal remains. Journal of Archaeological Science, 65, 161–171.  
[JOURNAL OF ARCHAEOLOGICAL SCIENCE](#)
- » O' Sullivan, J. and Killgore, J. 2003. Human Remains in Irish Archaeology. Dublin. The Heritage Council.  
[HUMAN REMAINS IN IRISH ARCHAEOLOGY](#)
- » Protection of Military Remains Act (1986)  
[LEGISLATION.GOV.UK](#)
- » Society for Museum Archaeology. 2020. Human Remains Fact Sheet.  
[MUSEUM ARCHAEOLOGY HUMAN REMAINS FACT SHEET](#)

# APPENDIX 1:

## INFOGRAPHIC ON

### PHOTOGRAPHING HUMAN REMAINS



Fig. 12: The British Association of Biological Anthropologists and Osteoarchaeologists (BABAO) infographic on the appropriate use of images from personal devices. Image is available from [BABAO Guidelines-Codes](#).



# APPENDIX 2:

## ON-SITE SKELETON PROMPT SHEET

**EXCAVATION:**

- Define outline of grave. Once done, DO NOT kneel within the grave;
- Aim to excavate, record, and lift in shortest time possible: the longer a skeleton is exposed, the more the bone is liable to damage;
- Begin to expose skeleton logically, from HEAD down and SPINE out (see diagram to right→);
- Use small tools, preferably wooden or plastic;
- Bones of torso, including pelvis, may be very fragile;
- Remember with vertebrae, even with the best cleaning, each individual bone will have a spine extending down into the ground (see diagram→)
- Consider bulk sampling hands/feet for smaller bones;
- With crania, lift all pieces of bone possible, retain dislodged soil, and take a broad soil sample; in order to retrieve all dental remains in particular;
- Measure juvenile long bones before excavation if they appear fragile;
- Bag-up as per 'Bagging Recommendations' as detailed on back of on-site recording sheet. Prepare and label all required bags prior to lifting. Remember to pierce the bags. Keep soil samples separate to bones.

**RECORDING:**

- Include site name, excavation no., skeleton no.;
- Record nature of grave, no matter how 'simple';
- Shade in bones present. This is not meant to be extremely detailed, rather it is an immediate indicator of survival;
- Record burial position, such as those indicated in diagrams to right.  
Most burials tend to be supine and extended;
- Record orientation, for example, 'west/east, head to west', and record which way the face is facing;
- Sketch the burial AND include adjacent features and/or skeletons;
- Provide a detailed written description of burial, particularly noting locations of arms and hands, legs, and if anything is unusual. This would include skeleton appearing quite compact (suggestive of wrapping/binding). Any indication of coffin? Note positions of legs. Are knees and/or ankles close together?
- Are there any grave goods or other grave finds?
- In addition to the plan, DO NOT forget to photograph the skeleton, at least from the vertical. Take additional shots as required, digital records allow this;
- Record ANYTHING you think might be unusual. As with the photographs, *it is better to have it and not need it, than need it and not have it*;
- Sign and date the recording sheet.

Burial Positions                      Arm Positions

*For numbering, recording, and packing human remains in ROI,  
please refer to the National Museum of Ireland – Advice Notes for Excavators 2020*

# APPENDIX 3:

## PRO-FORMA SKELETON RECORDING SHEETS

### 3.1: IAPO Infant Skeleton Recording Sheet

**INFANT**

**SITE:** \_\_\_\_\_ **ITM (site or skel.):** \_\_\_\_\_ **SK** \_\_\_\_\_

**EXCAVATION NO.:** \_\_\_\_\_

**LOCATION:** \_\_\_\_\_ **ASSOCIATED CONTEXT NOS:** \_\_\_\_\_

**Grid:** \_\_\_\_\_ **Area:** \_\_\_\_\_ **Cutting:** \_\_\_\_\_ **Grave Fill:** \_\_\_\_\_ **Grave Cut:** \_\_\_\_\_ **Coffin:** \_\_\_\_\_

**GRAVE TYPE:** \_\_\_\_\_

**Simple:** \_\_\_\_\_ **Coffin:** \_\_\_\_\_ **Long Cist:** \_\_\_\_\_ **Short Cist:** \_\_\_\_\_ **Pillow stones:** \_\_\_\_\_ **Ear muffs:** \_\_\_\_\_

**RIGHT SIDE**

Shade in bones present  
■ - complete  
▨ - fragmented

**LEFT SIDE**

Indicate limit of excavation and/or truncation

**PRESERVATION:** \_\_\_\_\_ **TOOLS & WEATHER CONDITIONS:** \_\_\_\_\_

**Poor:** \_\_\_\_\_ **Moderate:** \_\_\_\_\_ **Good:** \_\_\_\_\_

**POSITION:** \_\_\_\_\_ **Supine (on back):** \_\_\_\_\_ **Prone (on stomach):** \_\_\_\_\_

**Extended:** \_\_\_\_\_ **Crouched:** \_\_\_\_\_ **Flexed:** \_\_\_\_\_ **Lying on left side:** \_\_\_\_\_ **Lying on right side:** \_\_\_\_\_

**ORIENTATION:**

N  
W — E  
S

N  
W — E  
S  
HEAD  
FEET  
head to SW

**PHYSICAL RECORDING:**

Cuts:	Cut by:
Over:	Under:
Within:	Contemp:

**STRATIGRAPHIC MATRIX**


**RECORDED BY:** \_\_\_\_\_

**INSPECTED IN SITU BY OSTEO?** Y / N

**DATE:** \_\_\_\_\_

**CHECKED BY & DATE:** \_\_\_\_\_

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Copies of these documents can be downloaded from the [IAI website](#)

**INFANT**

**SITE:** \_\_\_\_\_ **EXCAV. NO.:** \_\_\_\_\_ **SK No.:** \_\_\_\_\_

Detailed sketch, to also include context numbers of skeleton, grave cut, coffin, etc., location of associated skeletons and/or features, dimensions, and **NORTH SIGN**.

**LEVELS:** \_\_\_\_\_ **TBM:** \_\_\_\_\_ **BS:** \_\_\_\_\_

**Skull:** \_\_\_\_\_ **Sacrum:** \_\_\_\_\_ **Feet:** \_\_\_\_\_ **Other?:** \_\_\_\_\_

**POSITIONS OF:**

Skull:	
Left Arm:	
Right Arm:	
Left Hand (extended? 'closed?'):	
Right Hand (extended? 'closed?'):	
Left Leg:	
Right Leg:	
Feet (together/apart?):	

**ADDITIONAL INFORMATION:**


**PLAN NOS:** \_\_\_\_\_ **ENVIRO. SAMPLES:** \_\_\_\_\_

**PHOTO REG. NOS:** \_\_\_\_\_ **ASSOCIATED FINDS:** \_\_\_\_\_

**DIGITAL PHOTO NOS:** \_\_\_\_\_

**OTHER:** \_\_\_\_\_

**BAGGING RECOMMENDATIONS:**

1. Cranium, 2. Mandible & loose teeth, 3. Manubrium & Sternum, 4. R Shoulder (scapula & clavicle), 5. L Shoulder (scapula & clavicle), 6. R Ribs, 7. L Ribs, 8. Vertebral Column, 9. Pelvic girdle (hips and sacrum), 10. R Arm (humerus, radius, ulna), 11. L Arm (humerus, radius, ulna), 12. R Hand, 13. L Hand, 14. R Leg (femur, tibia, fibula, patella), 15. L Leg (femur, tibia, fibula, patella), 16. R Foot, 17. L Foot, 18. Disarticulated or associated bone.

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# APPENDIX 3:

## PRO-FORMA SKELETON RECORDING SHEETS

### 3.2: IAPO Juvenile Skeleton Recording Sheet

JUVENILE

SITE: \_\_\_\_\_ ITM (site or skel.): \_\_\_\_\_ SK \_\_\_\_\_

EXCAVATION NO.: \_\_\_\_\_

LOCATION: \_\_\_\_\_ ASSOCIATED CONTEXT NOS: \_\_\_\_\_

Grid: \_\_\_\_\_ Area: \_\_\_\_\_ Cutting: \_\_\_\_\_ Grave Fill: \_\_\_\_\_ Grave Cut: \_\_\_\_\_ Coffin: \_\_\_\_\_

GRAVE TYPE: \_\_\_\_\_

Simple: \_\_\_\_\_ Coffin: \_\_\_\_\_ Long Cist: \_\_\_\_\_ Short Cist: \_\_\_\_\_ Pillow stones: \_\_\_\_\_ Ear muffs: \_\_\_\_\_

Shade in bones present  
■ - complete  
▨ - fragmented

RIGHT SIDE

LEFT SIDE

Indicate limit of excavation and/or truncation

PRESERVATION: \_\_\_\_\_ TOOLS & WEATHER CONDITIONS: \_\_\_\_\_

Poor: \_\_\_\_\_ Moderate: \_\_\_\_\_ Good: \_\_\_\_\_

POSITION: Supine (on back): \_\_\_\_\_ Prone (on stomach): \_\_\_\_\_

Extended: \_\_\_\_\_ Crouched: \_\_\_\_\_ Flexed: \_\_\_\_\_ Lying on left side: \_\_\_\_\_ Lying on right side: \_\_\_\_\_

ORIENTATION:

W N E S

W N E S

EXAMPLE: extended, head to SW

PHYSICAL RECORDING:

Cuts:	Cut by:
Over:	Under:
Within:	Contemp:

STRATIGRAPHIC MATRIX

RECORDED BY: \_\_\_\_\_

INSPECTED IN SITU BY OSTEO? Y / N

DATE: \_\_\_\_\_

CHECKED BY & DATE: \_\_\_\_\_

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JUVENILE

SITE: \_\_\_\_\_ EXCAV. NO.: \_\_\_\_\_ SK No.: \_\_\_\_\_

Detailed sketch, to also include context numbers of skeleton, grave cut, coffin, etc., location of associated skeletons and/or features, dimensions, and **NORTH SIGN**.

LEVELS: \_\_\_\_\_ TBM: \_\_\_\_\_ BS: \_\_\_\_\_

Skull: \_\_\_\_\_ Sacrum: \_\_\_\_\_ Feet: \_\_\_\_\_ Other?: \_\_\_\_\_

POSITIONS OF:

Skull: \_\_\_\_\_

Left Arm: \_\_\_\_\_

Right Arm: \_\_\_\_\_

Left Hand (extended? 'closed?'): \_\_\_\_\_

Right Hand (extended? 'closed?'): \_\_\_\_\_

Left Leg: \_\_\_\_\_

Right Leg: \_\_\_\_\_

Feet (together/apart?): \_\_\_\_\_

ADDITIONAL INFORMATION:

PLAN NOS: \_\_\_\_\_

PHOTO REG. NOS: \_\_\_\_\_

DIGITAL PHOTO NOS: \_\_\_\_\_

OTHER: \_\_\_\_\_

ENVIRO. SAMPLES: \_\_\_\_\_

ASSOCIATED FINDS: \_\_\_\_\_

BAGGING RECOMMENDATIONS:

1. Cranium, 2. Mandible & loose teeth, 3. Manubrium & Sternum, 4. R Shoulder (scapula & clavicle), 5. L Shoulder (scapula & clavicle), 6. R Ribs, 7. L Ribs, 8. Vertebral Column, 9. Pelvic girdle (hips and sacrum), 10. R Arm (humerus, radius, ulna), 11. L Arm (humerus, radius, ulna), 12. R Hand, 13. L Hand, 14. R Leg (femur, tibia, fibula, patella), 15. L Leg (femur, tibia, fibula, patella), 16. R Foot, 17. L Foot, 18. Disarticulated or associated bone.

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# APPENDIX 3:

## PRO-FORMA SKELETON RECORDING SHEETS

### 3.3: IAPO Adult Skeleton Recording Sheet

ADULT

SITE: \_\_\_\_\_ ITM (site or skel.): \_\_\_\_\_ SK \_\_\_\_\_

EXCAVATION NO.: \_\_\_\_\_

LOCATION: \_\_\_\_\_ ASSOCIATED CONTEXT NOS: \_\_\_\_\_

Grid: \_\_\_\_\_ Area: \_\_\_\_\_ Cutting: \_\_\_\_\_ Grave Fill: \_\_\_\_\_ Grave Cut: \_\_\_\_\_ Coffin: \_\_\_\_\_

GRAVE TYPE: \_\_\_\_\_

Simple: \_\_\_\_\_ Coffin: \_\_\_\_\_ Long Cist: \_\_\_\_\_ Short Cist: \_\_\_\_\_ Pillow stones: \_\_\_\_\_ Ear muffs: \_\_\_\_\_

Shade in bones present  
■ - complete  
▨ - fragmented

RIGHT SIDE

LEFT SIDE

Indicate limit of excavation and/or truncation

PRESERVATION: \_\_\_\_\_ TOOLS & WEATHER CONDITIONS: \_\_\_\_\_

Poor: \_\_\_\_\_ Moderate: \_\_\_\_\_ Good: \_\_\_\_\_

POSITION: \_\_\_\_\_ Supine (on back): \_\_\_\_\_ Prone (on stomach): \_\_\_\_\_

Extended: \_\_\_\_\_ Crouched: \_\_\_\_\_ Flexed: \_\_\_\_\_ Lying on left side: \_\_\_\_\_ Lying on right side: \_\_\_\_\_

ORIENTATION:

N  
W E  
S

N  
W E  
S  
EXAMPLE: extended, head to SW

PHYSICAL RECORDING:

Cuts:	Cut by:
Over:	Under:
Within:	Contemp:

STRATIGRAPHIC MATRIX


RECORDED BY: \_\_\_\_\_

INSPECTED IN SITU BY OSTEO? Y / N

DATE: \_\_\_\_\_

CHECKED BY & DATE: \_\_\_\_\_

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Copies of these documents can be downloaded from the [IAI website](#)

ADULT

SITE: \_\_\_\_\_ EXCAV. NO.: \_\_\_\_\_ SK No.: \_\_\_\_\_

Detailed sketch, to also include context numbers of skeleton, grave cut, coffin, etc., location of associated skeletons and/or features, dimensions, and **NORTH SIGN**.

LEVELS: \_\_\_\_\_ TBM: \_\_\_\_\_ BS: \_\_\_\_\_

Skull: \_\_\_\_\_ Sacrum: \_\_\_\_\_ Feet: \_\_\_\_\_ Other?: \_\_\_\_\_

POSITIONS OF:

Skull: \_\_\_\_\_

Left Arm: \_\_\_\_\_

Right Arm: \_\_\_\_\_

Left Hand (extended? 'closed?'): \_\_\_\_\_

Right Hand (extended? 'closed?'): \_\_\_\_\_

Left Leg: \_\_\_\_\_

Right Leg: \_\_\_\_\_

Feet (together/apart?): \_\_\_\_\_

ADDITIONAL INFORMATION:

PLAN NOS: \_\_\_\_\_

PHOTO REG. NOS: \_\_\_\_\_

DIGITAL PHOTO NOS: \_\_\_\_\_

OTHER: \_\_\_\_\_

ENVIRO. SAMPLES: \_\_\_\_\_

ASSOCIATED FINDS: \_\_\_\_\_

BAGGING RECOMMENDATIONS:

1. Cranium, 2. Mandible & loose teeth, 3. Manubrium & Sternum, 4. R Shoulder (scapula & clavicle), 5. L Shoulder (scapula & clavicle), 6. R Ribs, 7. L Ribs, 8. Vertebral Column, 9. Pelvic girdle (hips and sacrum), 10. R Arm (humerus, radius, ulna), 11. L Arm (humerus, radius, ulna), 12. R Hand, 13. L Hand, 14. R Leg (femur, tibia, fibula, patella), 15. L Leg (femur, tibia, fibula, patella), 16. R Foot, 17. L Foot, 18. Disarticulated or associated bone.

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# APPENDIX 4:

## ISOTOPE ANALYSIS (N. DALY, E. ALONZI)

Isotope studies can elucidate many facets of human behaviour, including palaeodiet (carbon, nitrogen, and others) and palaeomobility (strontium, oxygen, sulphur, lead, and others). Archaeological material is finite, however, and a carefully planned approach to sample selection in terms of aims, objectives, hypotheses, and questions will provide focus for research direction. In order to briefly outline some of the potential uses of isotope studies, some examples of possible research questions are outlined below.

### QUESTIONS ABOUT INDIVIDUAL DIETS

- Did the individual eat mostly terrestrial, aquatic, or marine foods?
- Did the individual eat plants with different photosynthetic pathways, such as C3, C4, or CAM plants?
- Did the individual experience a period of starvation?
- Did the individual experience noticeable dietary changes around the time of weaning?
- Did the individual experience changes in diet throughout the lifetime, based on teeth and skeletal elements that form at different ages?
- Questions about individual mobility or residential change
- Was this individual a non-local?
- Did the individual come from a place that was unlike those of the rest of the site's population?
- Did the individual originate from an isotopically distinct environment, as indicated by modern or archaeological baseline samples?
- Did the individual experience changes in locale throughout the lifetime, based on teeth and skeletal elements that form at different ages?

### QUESTIONS ABOUT DIET AND MOBILITY IN ARCHAEOLOGICAL POPULATIONS

#### 1) Diet:

- Are the diets of the members of the group homogenous or heterogenous?
- Did the diets of the group change in response to an external factor (e.g., famine, trade, resource depletion?)

#### 2) Mobility:

- Did the group experience different levels of mobility over time?
- Are certain demographic characteristics (e.g., sex, age) correlated with mobility?

It should be noted that radiogenic strontium isotopes serve as geochemical signatures that can be used to relate archaeological skeletal remains to a specific geological area, depending on how mobile the individual was during life. Radiogenic strontium ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) values vary across the world due to factors such as bedrock formation, soil formation, and soil deposition processes. Best practice therefore is to include bioavailable strontium baseline samples in research plans to analyse human bone. Published data may be sufficient for interpretation of the human isotope data for a given project, depending on the site location. It is suggested, therefore, that the researcher contact members of collaborative networks, such as the Irish Isotopes Research Group, to ensure that baseline sampling follows standard methods and does not unnecessarily overlap with previous research.