# “Teaching the Bioarchaeology of Care in the Classroom” Workshop


Presented at the 52nd Annual North American Meeting of the Paleopathology Association, Baltimore, Maryland, March 10-12, 2025

Led by

Alyson Caine, PhD.

Ihuixaya Tapia, MSc., RPA

Christopher Canzonieri, MA, RPA

# Table of Contents

***Workshop Activities*** ..... ***3***

**CASE STUDY No. 1: Solcor Burial SCL-3-t119** ..... **3**

**FIGURES: Case Study No. 1 – Solcor Individual** ..... 6

**GLOSSARY: Case Study No. 1 – SLC-3-t119** ..... 11

**CASE STUDY No. 3: Romito 2** ..... **13**

**FIGURES: Case Study No. 3 – Romito 2** ..... 16

**GLOSSARY: Case Study No. 3 – Romito 2** ..... 21

**CASE STUDY No. 4: The Nasca Boy** ..... **22**

**FIGURES AND TABLES: Case Study No. 4 – The Nasca Boy** ..... 25

**GLOSSARY: Case Study No. 4 – The Nasca Boy** ..... 29

***Short Form Index of Care*** ..... ***30***

***Workshop Information*** ..... ***34***

**Workshop Leaders** ..... **35**

## Workshop Activities

# CASE STUDY No. 1: Solcor Burial SCL-3-t119

In this activity, you will work through a case study of a single individual who exhibits changes in their skeleton resulting from experience of disease or injury during life.

You will consider the features of the individual (age, sex, and pathology). Taking into account their mortuary and lifeways contexts, you will then assess whether they likely required, and received, health-related care at some stage. Remember that 'health-related care' is defined along a continuum spanning 'hands-on, intensive care' at one end, and 'accommodation of difference' (i.e. adapting environment and expectations to allow participation) at the other.

Note: As in most bioarchaeological research, you may not have all the data you would like in order to be completely confident in your conclusions. Hint: focus on the likely impacts of the skeletal changes (described below) on ability to function independently, and to fully participate, in the specific community setting at that particular time in history.

Read the case study and complete the *Short-Form Index of Care* to the best of your ability. Refer to the Glossary on the final page for brief definitions of unfamiliar terms.

**MORTUARY CONTEXT**

- An individual - SCL-3-t119 - was recovered from a Middle Period (400 – 1000 A.D.) cemetery in the Atacama Desert of Chile (Figure 1)

- Site is Solcor 3 – a cemetery for wealthy individuals who would have lived in a generally prosperous environment engaging in interregional trade networks

**THE INDIVIDUAL**

- Approximately 100% of this SCL-3-t119's skeleton was represented (Figure 2)

- SCL-3-t119 was estimated to be a female between the ages of 30 and 40 years at the time of death

- SCL-3-t119 was provided with normative burial practices of the period, including pottery but was not one of the wealthier burials in terms of mortuary goods

- SCL-3-t119 had changes in their skeleton that suggest this individual had some kind of disease or impairment previous to death (Figure 2 dark shaded area)

**LIFEWAYS CONTEXT**

- Community: *Allyus* served as geopolitical units that were kin-based and represented both political grouping and lineage; Middle Period has a growing population and settlement size; Solcor 3 was a hierarchical community with engagement with large-scale trade networks promoting non-locals and locals living there

- Landscape: San Pedro de Atacama oases, arable land although surrounding landscape is hyper-arid; 2,500 miles above sea level

- Climate: Hyper-arid

- Economy: Strategic location that functioned as a node in trans-Andean trade networks; Goods from diverse foreign groups have been recovered; Interregional trade networks promoted prosperity for individuals living within the oases

- Health: Violence, particularly interpersonal violence, is seen frequently in Middle Period communities with facial involvement frequently involved. Practices like *tinku* in combination with high levels of trauma has led to violence interpreted as playing a social role in the oases of San Pedro de Atacama. Elites generally experience less trauma in these contexts; Infectious disease (leishmaniasis) recorded in individuals from San Pedro de Atacama signaling movement of people (mainly women) into and out of the Jungles northwest of Argentina where leishmaniasis is known to occur

**PATHOLOGY**

Skeletal alterations in SLC-3-t119 associated with disease are described below:

- Figures 3 – 5 show pathological changes in this individual's skull at the mandible, maxilla, zygomatic bones, and nasal bones

- No further changes were identified in the postcranial elements of this individual

- The changes to the nasal bones, including sharp, irregular margins at the nasal aperture (Figure 5), and mandible, including separation at the midline with a mix of lamellar and reactive bone (Figure 3), suggests possible traumatic injury to these bones

- New reactive bone formation at the mandible, maxilla, and zygomatic bones (Figures 3 – 5) and openings (Figure 5) in the nasal bones suggest a possible infection was impacting this individual at the time of death

**YOUR TASK:**

On the basis of the information above, fill out the *Short Form Index of Care*. Keep in mind that more than one condition might be operating to affect SLC-3-t119's experience, and that individual health conditions may interact to affect overall experience. In summary, here are the questions you will be addressing:

- Based on the skeletal evidence for pathology presented above, what kind of clinical and functional impacts do you think SLC-3-t119 likely experienced?
- Given the lifeways context, could SLC-3-t119 have looked after herself, or was care from others in her community likely needed to help her to manage these impacts?
- If SLC-3-t119 needed care from others, what kind(s) of care do you think might have been required, and who might have provided this care? (Note: people can receive different types of care either at the *same* time (to address different impacts) or at *different* times (as their condition improves or worsens).

**FIGURES: Case Study No. 1 – Solcor Individual**

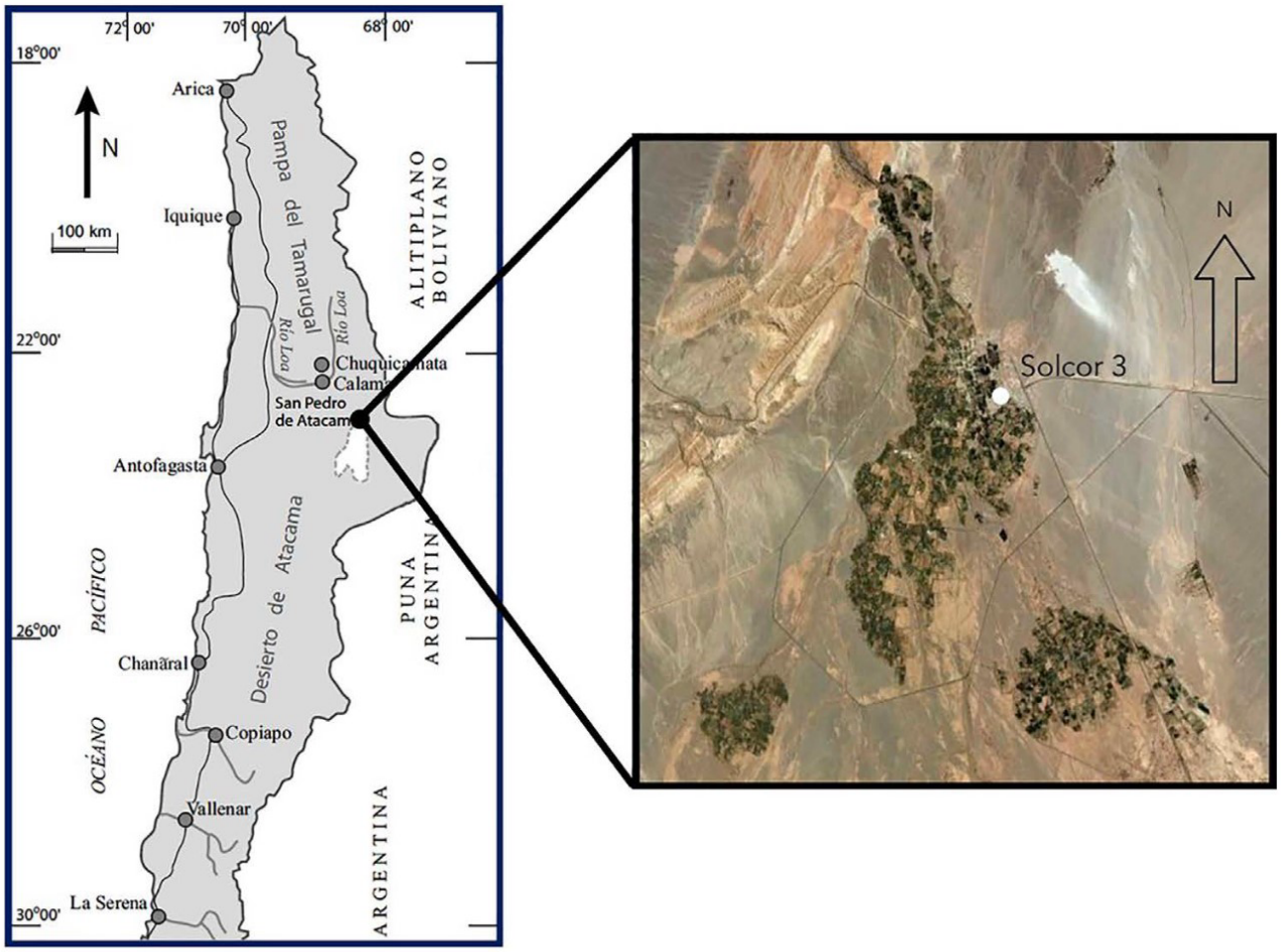



**Figure 1.** Map of northern Chile indicating the location of Solcor 3.

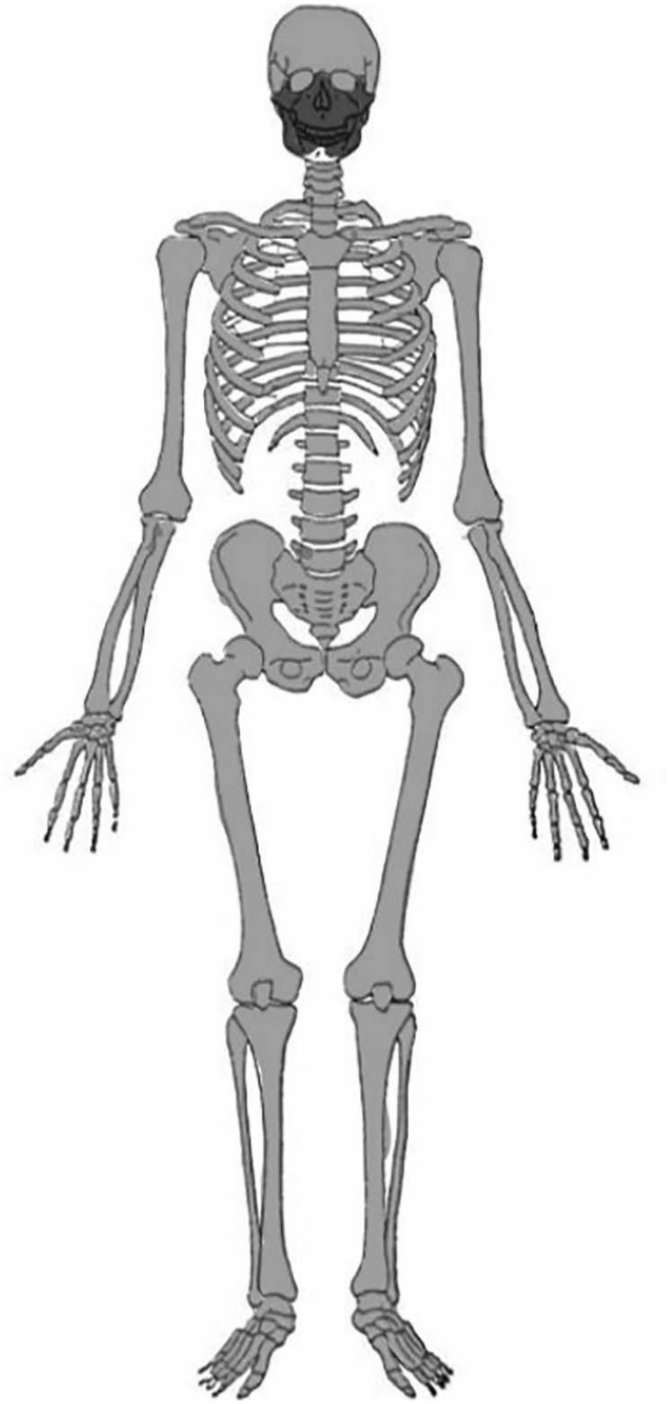


**Figure 2.** Completeness of individual Solcor-3-t119 from Solcor 3 and presence of pathological alterations. Key: light gray, presence of element; dark gray, presence of pathological alteration.

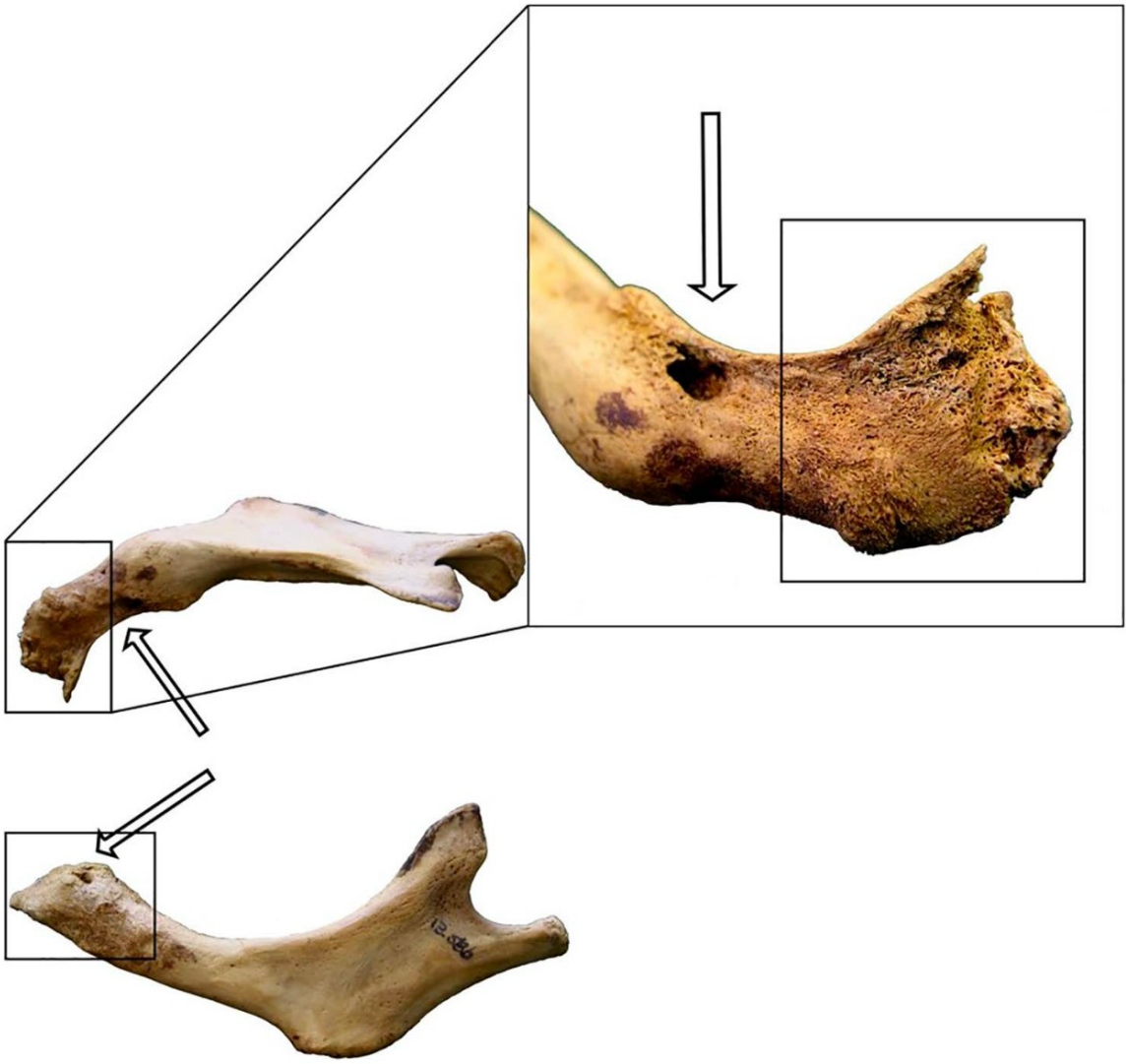


**Figure 3.** Superior view of right (above and labial) and lateral view of left (below) halves of mandible with separation at midpoint of bone. One alveolar socket was present on the right side and mental foramen on the left side (arrows). Boxes highlight bone resorption and presence of lamellar and reactive bone where separation occurred. Reactive bone at the medial aspect of right mandible (box, labial view).

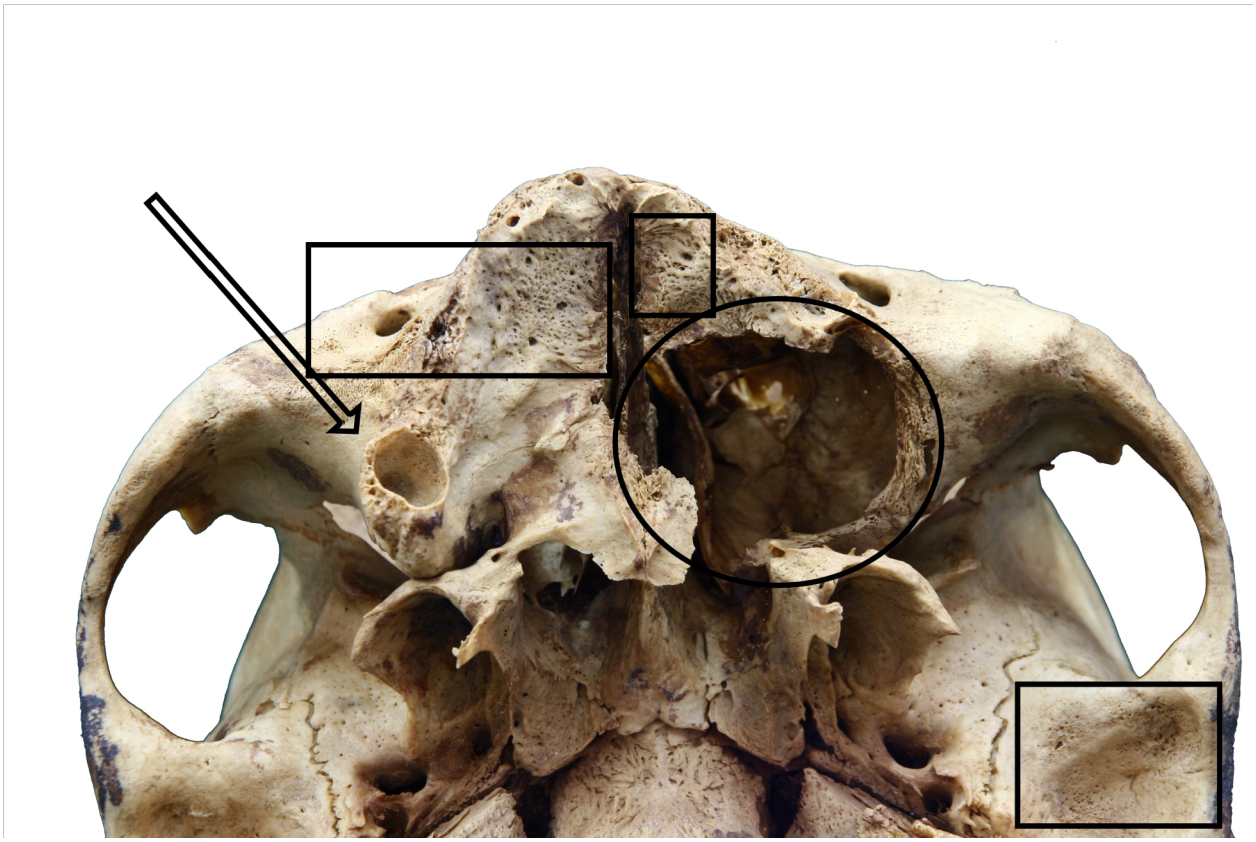


**Figure 4.** Inferior view of maxilla from Solcor-3-t119 with right third molar socket retained (arrow). Microporosity covers the maxilla and left temporomandibular joint (boxes); however, postmortem damage obscures the extent of lesions on the maxilla (circle).

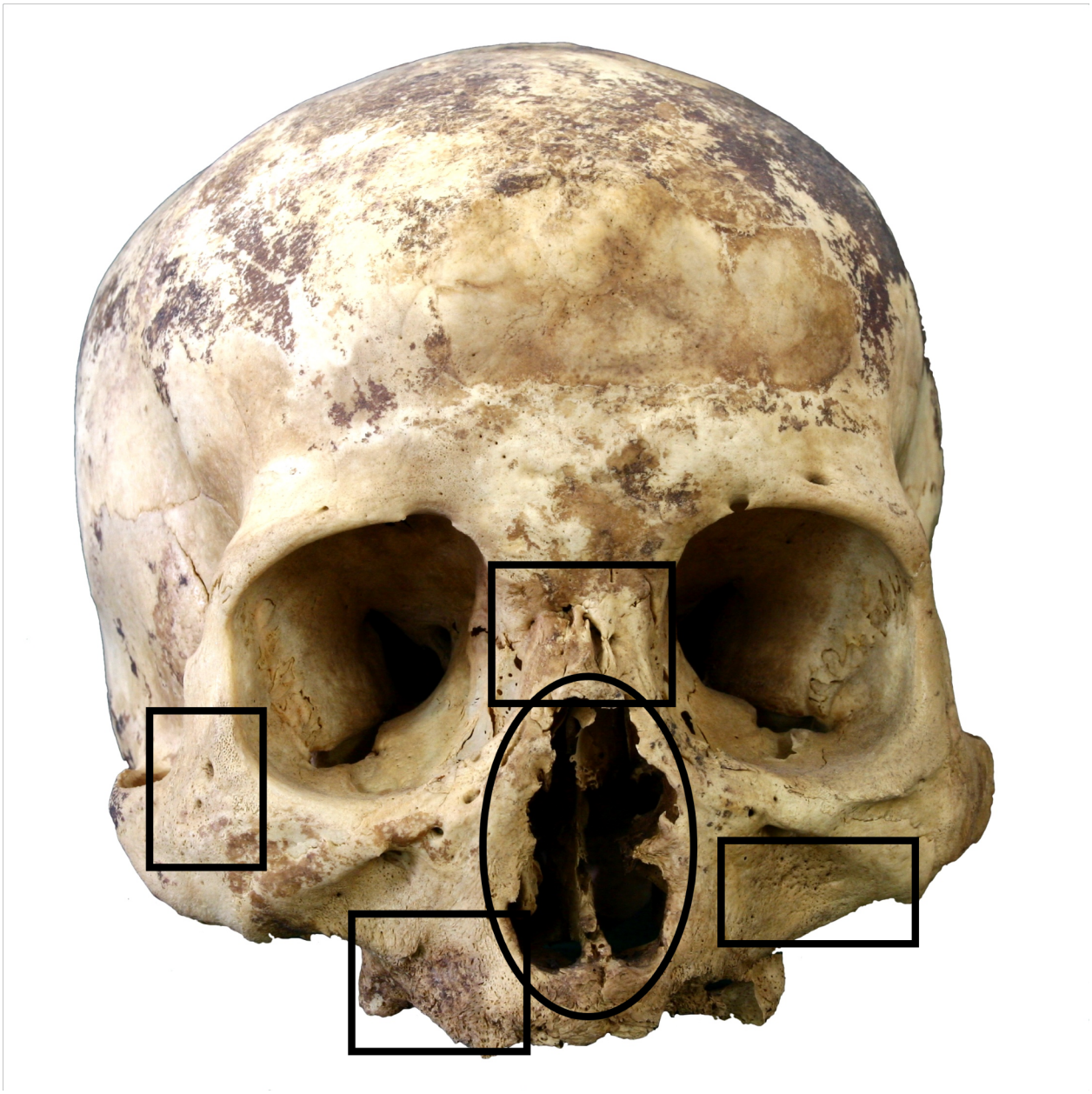


**Figure 5.** Anterior view of cranium of Solcor-3-t119 where the nasal suture has been obliterated and lamellar bone has left openings, possible cloacae (box). Reactive bone is present on the zygomatic bones and maxilla (boxes), while the nasal aperture has sharp, irregular, and smooth margins (circle).

**GLOSSARY: Case Study No. 1 – SLC-3-t119**
***For more detailed definitions refer to your textbooks or a dictionary**

**Acute** – short term exposure to, or experience of, disease or injury

**Chronic** – long term exposure to, or experience of, disease or injury; generally when there is evidence of reactive and/or lamellar bone that suggests healing a process

**Clinical Impacts** – refers to physiological responses to disease or injury which warrant treatment /care (ex: fever, pain, inflammation)

**Comorbidity** – presence of more than one disease or injury at the same time

**Duration** – in this context refers to the length of time someone lived with disease or injury, or how long disease or injury may have kept them from engaging in their day-today activities

**Functional Impacts** – refers to challenges in undertaking activities of daily living that result from clinical impact(s) of disease or injury, and which may warrant a level of support and/or dedicated care treatment (ex: changes to mobility, difficulties in eating, inability to work)

**Infectious Disease** – illness that results from a pathogen (e.g., bacteria, virus, or fungi) that leads to changes in the skeleton – in this context changes related to infectious disease will generally be the presence of new bone (reactive or lamellar) or the loss of bone (destruction)

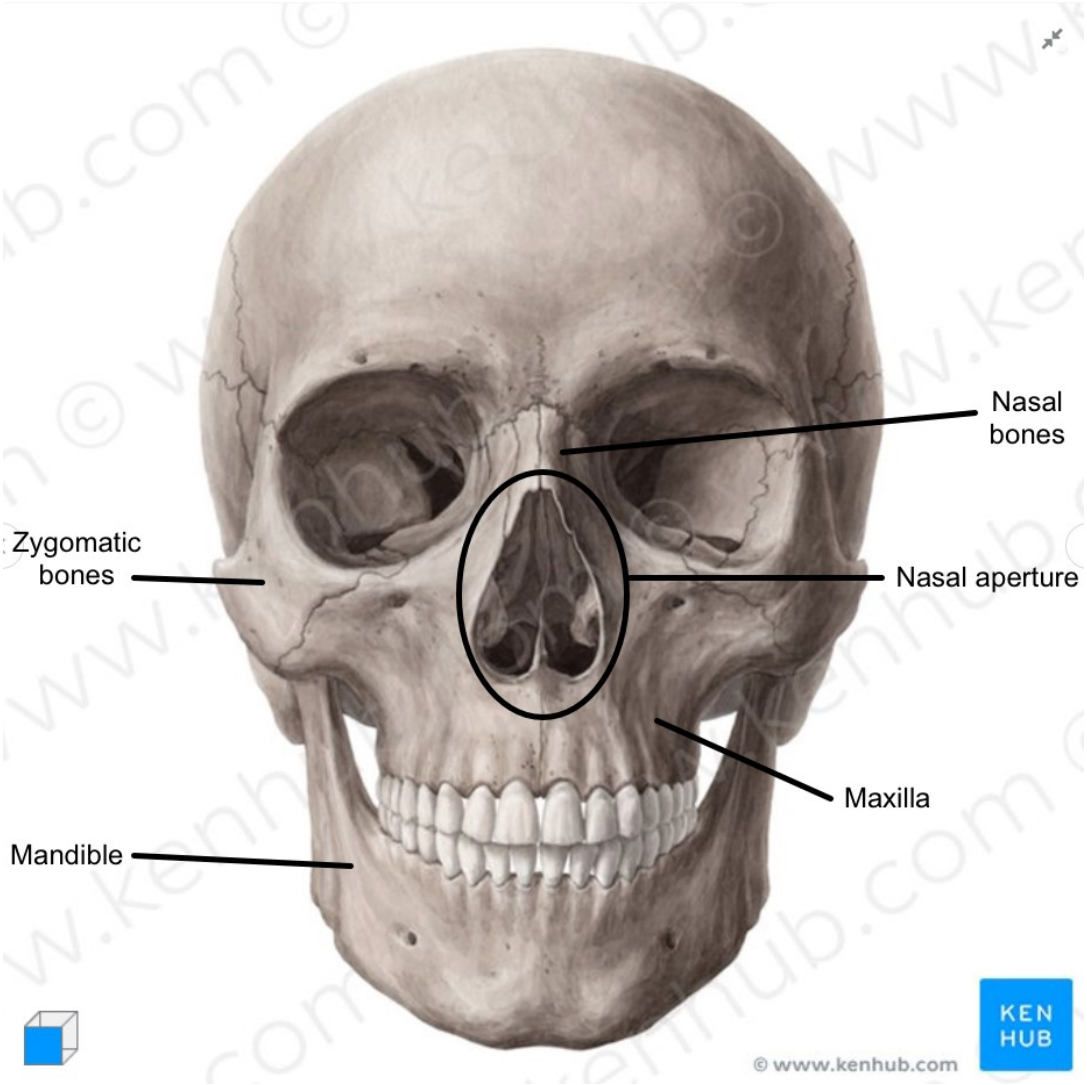
**Lamellar Bone** – this is mature bone that is the product of remodeled reactive bone and has a regular arrangement

**Leishmaniasis** – a parasitic infection that is transmitted by sand-flies in South American contexts and affects mucosal tissues that result in skin sores that, when chronic, can destroy bone and alter the appearance of facial features

**Pathological change** – change in the normal shape, physiology, or orientation of an element that in this context relates to disease or an impairment (e.g., trauma)

**Reactive Bone** – this is immature bone that is produced at initial stages of bone formation and has an irregular arrangement; also referred to as woven bone

**Trauma** – physical injury in bioarchaeological contexts this could be directly impacting bone (e.g., accidental fall that breaks bone) or indirectly impacting bone (e.g., strained muscle impacts attachment site on bone)


Nasal bones
Zygomatic bones
Nasal aperture
Maxilla
Mandible
© www.kenhub.com
KEN HUB

# CASE STUDY No. 3: Romito 2

In this activity, you will work through a case study of a single individual who exhibits changes in their skeleton resulting from experience of disease or injury during life.
You will consider the features of the individual (age, sex, and pathology). Taking into account their mortuary and lifeways contexts, you will then assess whether they likely required, and received, health-related care at some stage. Remember that 'health-related care' is defined along a continuum spanning 'hands-on, intensive care' at one end, and 'accommodation of difference' (i.e. adapting environment and expectations to allow participation) at the other.

Note: As in most bioarchaeological research, you may not have all the data you would like in order to be completely confident in your conclusions. Hint: focus on the likely impacts of the skeletal changes (described below) on ability to function independently, and to fully participate, in the specific community setting at that particular time in history.

Read the case study and complete the *Short-Form Index of Care* to the best of your ability. Refer to the Glossary on the final page for brief definitions of unfamiliar terms.

## MORTUARY CONTEXT

- The skeletal remains of Romito 2 were recovered from a double burial in the Romito Cave, Southern Apennine Mountains, Italy (Fig. 1). The remains date to around 9,500 BC.
- Eight individuals (5 males, including Romito 2, and 3 females) were recovered from two double and four single burials at this site.

## THE INDIVIDUAL

- Romito 2 was male; 17-20 years; stature 110-120 cms (43-48"); with approximately 75% of his skeleton represented (Fig. 2).
- Buried supine, extended, oriented N-S (positioning standard for all Romito burials), his remains lay nestled against those of an older adult female (~35-50yrs); whether there was a familial relationship is unknown. His grave contained an auroch horn.
- His extremely short stature, together with other morphological features, indicate a diagnosis of a condition known as acromesomelic dysplasia (a form of dwarfism).

## LIFEWAYS CONTEXT

- Community: a small, non-sedentary, hunter-gatherer community, reliant on a meat diet. Little or no evidence of sexual dimorphism in remains, suggesting no sexual division of labor. Lower limb morphology suggests highly mobile population. No evidence of differences in social status.
- Landscape: very challenging mountainous terrain, steep descent to sea level.
- Economy: hunting ibex, boar and deer at middle and upper altitudes; production of stone tools, carved bone and pierced shell artefacts; tooth-wear indicates hide/fibre processing.
- Health: skeletal indicators of periodic nutritional stress are seen in all Romito Cave remains.

## PATHOLOGY

Romito 2 was born with the acromesomelic dysplasia, a very rare skeletal disorder resulting from genetic mutation and causing abnormal bone and cartilage development. It results in greatly shortened stature, and disproportionately short forearm bones, leg bones, and hand and foot bones, and other bones (e.g. skull bones) may also be affected. As is the case with other forms of dwarfism, it is often associated with (increasingly severe) spinal problems.

- Romito 2's remains display extreme and disproportionate reduction of all long bones: in particular, note disproportionately short forearms and femora (Fig. 3). This led to much reduced stature (Fig. 4).
- Alterations are present at the cranium at the frontal and occipital bones (Fig. 5).
- Most hand and feet bones are of reduced size and/or malformed, features consistent with those seen in arm and leg bones.
- Disruption to bone growth at the articular surfaces of both elbow and wrist joints limited Romito 2's forearm (lower arm) extension to 130° (normal 180°); restricted forearm rotation; and likely compromised wrist mobility and strength (Fig. 6).
- Vertebrae C3, T9, T10 and possibly T1 and T3 show anterior wedging (i.e. compression at the front of the vertebra), likely the product of chronic stress. (There is no clear image available but look at the malalignment of the spine visible in Fig.2).

**YOUR TASK:**

On the basis of the information above, fill out the *Short Form Index of Care*. Keep in mind that more than one condition might be operating to affect Romito 2's experience, and that individual health conditions may interact to affect overall experience. In summary, here are the questions you will be addressing:

- Based on the skeletal evidence for pathology presented above, what kind of clinical and functional impacts do you think Romito 2 likely experienced?
- Given the lifeways context, could Romito 2 have looked after himself, or was care from others in his community likely needed to help him to manage these impacts?
- If Romito 2 needed care from others, what kind(s) of care do you think might have been required, and who might have provided this care? (Note: people can receive different types of care either at the *same* time (to address different impacts) or at *different* times (as their condition improves or worsens).

**FIGURES: Case Study No. 3 – Romito 2**


**Figure 1:** Map of Italy, showing the landscape in which the Romito Cave is located, and where the Romito community lived and hunted.

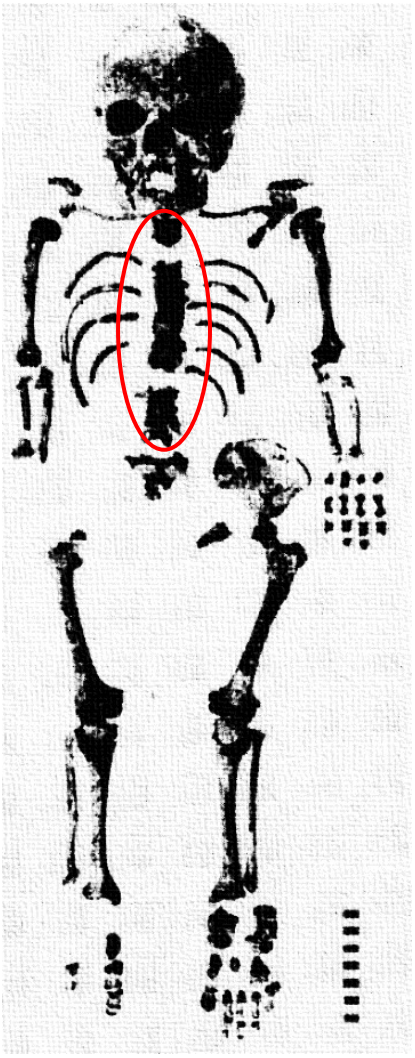


**Figure 2:** Recovered elements of Romito 2. Although the image is not clear, malalignment of vertebrae (red) is evident.

(Image from Mallegni and Fabbri 1995:124)

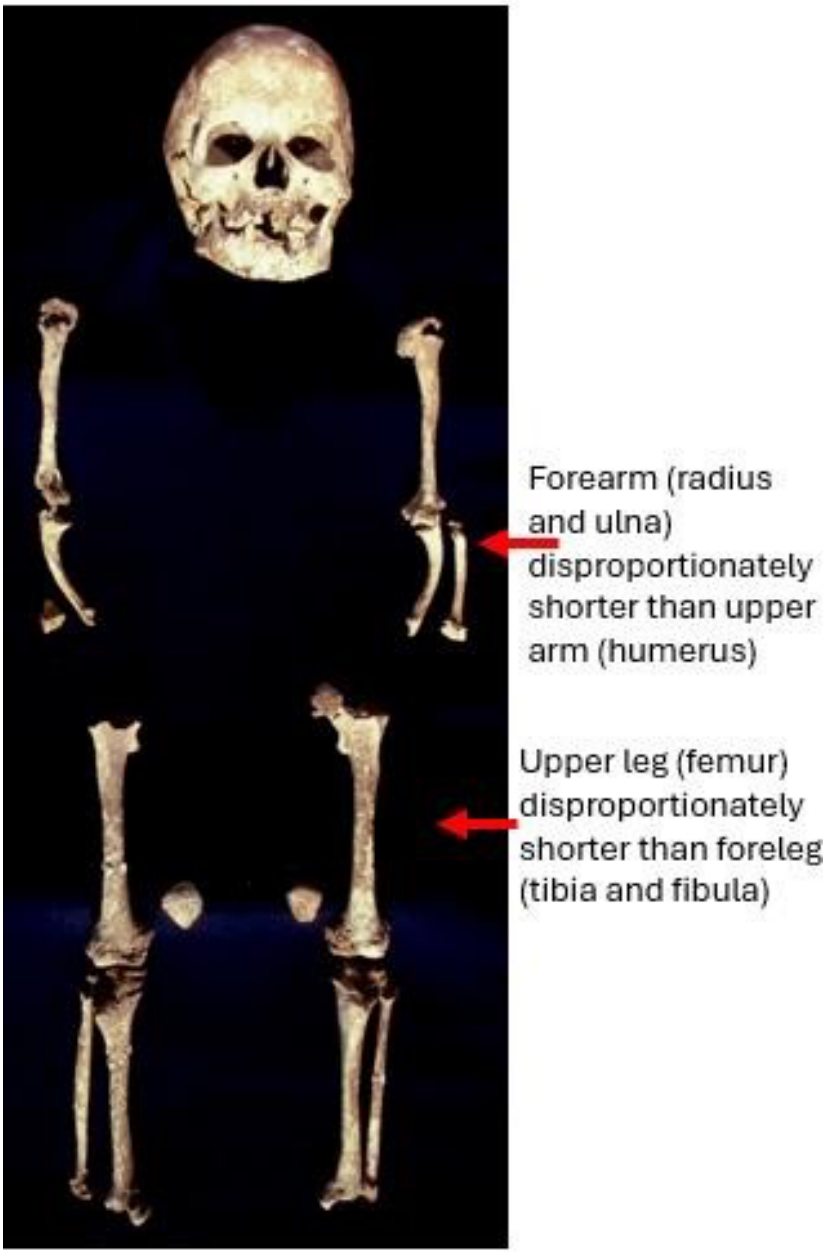



**Figure 3:** Romito 2 - major long bones and skull
(Image courtesy of David Frayer)

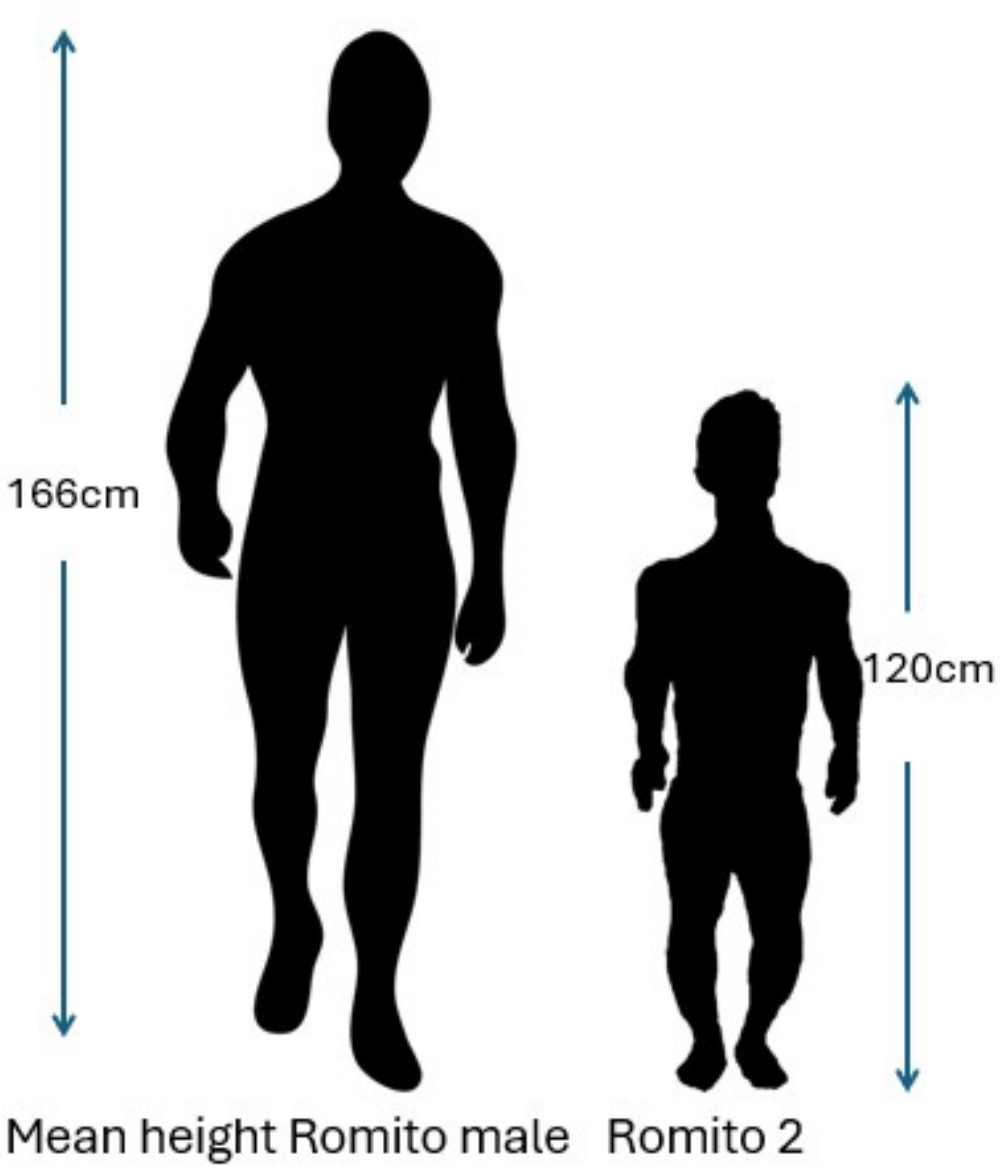



**Figure 4:** Comparison between Romito 2's stature and the mean stature of the Romito adult males (N=4) buried in Romito Cave..

**Figure 5:** Romito 2 cranium, right profile. Note **occipital 'bulge'**, **frontal bossing**, and the **'flat' midface**.

Image courtesy of David Frayer.

**Figure 6:** Left – left humerus and ulna, medial view, showing maximum forearm extension (130°). Above – Romito 2 fully extended left humerus and ulna (on left) compared to that of fully extended humerus and ulna. Image courtesy of David Frayer.

**GLOSSARY: Case Study No. 3 – Romito 2**

*** For more detailed definitions refer to your textbooks or a dictionary.**

**Articular surface -** the smooth surface of a bone that is in contact with another bone to create a joint (e.g. elbow or knee joint).

**Auroch -** a large, extinct, cattle species.

**Cartilage -** the flexible connective tissue seen throughout the body (e.g. in the joints, the nose, the spine); it serves a range of structural and protective functions.

**Extension - '**muscle extension' – increasing the angle between two bones (e.g. straightening an arm at the elbow).

**Morphology** - 'skeletal morphology' - the size, shape and structure of the skeleton, and the relationship between skeletal elements.

**Non-sedentary -** not living permanently in one place, a lifestyle 'on the move'.

**Sexual dimorphism** - when sexes of the same species display different morphological features (see 'morphology' above).

**Supine -** in the case of intentional burial, the individual is placed lying flat on their back, face and torso facing upwards

# CASE STUDY No. 4: The Nasca Boy

In this activity, you will work through a case study of a single individual who exhibits indicators in their remains suggesting experience of disease or injury during life.

You will consider the features of the individual (age, sex, and pathology). Taking into account their mortuary and lifeways contexts, you will then assess whether they likely required, and received, health-related care at some stage. Remember that 'health-related care' is defined along a continuum spanning 'hands-on, intensive care' at one end, and 'accommodation of difference' (i.e. adapting environment and expectations to allow participation) at the other.

Note: As in most bioarchaeological research, you may not have all the data you would like in order to be completely confident in your conclusions. Hint: focus on the likely impacts of the pathology (described below) on ability to function independently, and to fully participate, in the specific community setting at that particular time in history.

Read the case study and complete the *Short-Form Index of Care* to the best of your ability. Refer to the Glossary on the final page for brief definitions of unfamiliar terms.

## MORTUARY CONTEXT

- Mummified remains of a child – 'the Nasca Boy' - were found in a burial pit in Agua Salada, Nasca Province, Peru (Fig. 1).
- Remains date to 700AD, and belong to the Late Nasca culture (Early Middle Horizon)

## THE INDIVIDUAL

- The Nasca Boy was male; ~8 years at death; with good soft tissue and skeletal preservation; stature ~1.07m.
- Cause of death: tuberculosis (TB), a bacterial disease caused by infection with *Mycobacterium tuberculosis*.
- The remains are posed on a cushioned adobe 'stool', knees bent and forelegs lying tightly alongside upper leg bones (a position sometimes adopted by those with long-term lower body mobility loss). This mortuary presentation is unique. (Figs. 2 and 4).
- The 'stool' (used by the Nasca Boy during life) is also a unique burial inclusion.
- The remains (including the stool) were wrapped in textiles to form a single 'mummy bundle', placed in the burial pit and surrounded by grave goods (Fig. 3).

**LIFEWAYS CONTEXT**

- Community: small, close-knit hamlet (likely extended family-based), located on a riverbank 'oasis' surrounded by desert, around ~40km from sea (Fig. 1) .
- Economy: agricultural (crops, livestock), part of a well-established trading network.
- Environment, Health and Society: Extended drought at this time linked to growing competition for arable land; increased child mortality and general health stress; reduced life expectancy; political instability.

**PATHOLOGY**

Presence, spread and impact of TB were established in an autopsy involving macroscopic, radiographic, and histological analyses. The autopsy found:

- TB of the spine - 'Pott's disease' - in lumbar vertebrae 1-3 (Fig 4.), leading to destruction of (parts of) the spinal canal and a compromised spinal cord (see also 'psoas abscess'). Damage to the spinal cord would have impacted organ function and lower body mobility (extent of neurological impact unknowable).
- Psoas abscess (infection in the psoas muscle caused by lumbar TB) eroded adjoining vertebral bone and soft tissue.
- Kyphosis (Fig.4) and scoliosis.
- TB in the right lung, liver, right kidney, heart and pericardium.
- Multiple skeletal indicators of disrupted growth in both tibiae (Harris lines - Fig 4), reflecting periods of health stress between 18 months – 7yrs.

TB is a chronic disease. Years may pass between initial infection, onset of symptoms, and eventual death. Symptom severity may fluctuate, with periods of remission. Table 1 outlines the hypothesized timing of disease progression for the Nasca Boy.

**YOUR TASK:**

On the basis of the information above, fill out the *Short Form Index of Care*. Keep in mind that more than one condition might be operating to affect the Nasca Boy's experience, and that individual health conditions may interact to affect overall experience. In summary, here are the questions you will be addressing:

- Based on the skeletal evidence for pathology presented above, what kind of clinical and functional impacts do you think the Nasca Boy likely experienced?
- Given the lifeways context, could the Nasca Boy have looked after himself, or was care from others in his community likely needed to help him to manage these impacts?
- If the Nasca Boy needed care from others, what kind(s) of care do you think might have been required, and who might have provided this care? (Note: people can receive different types of care either at the *same* time (to address different impacts) or at *different* times (as their condition improves or worsens).

**FIGURES AND TABLES: Case Study No. 4 – The Nasca Boy**


**FIGURE 1:** Location and physical environment of Agua Salada, Nasca Province, Peru.

Google Maps

**FIGURE 2:** Two views of the Nasca Boy on display in the Regional Museum of Ica. Note: spinal kyphosis (see glossary); position (lower legs bent back tightly beside upper legs); and grave goods (above - panpipes top left).

Photographs taken with kind permission of the Ica Museum Director

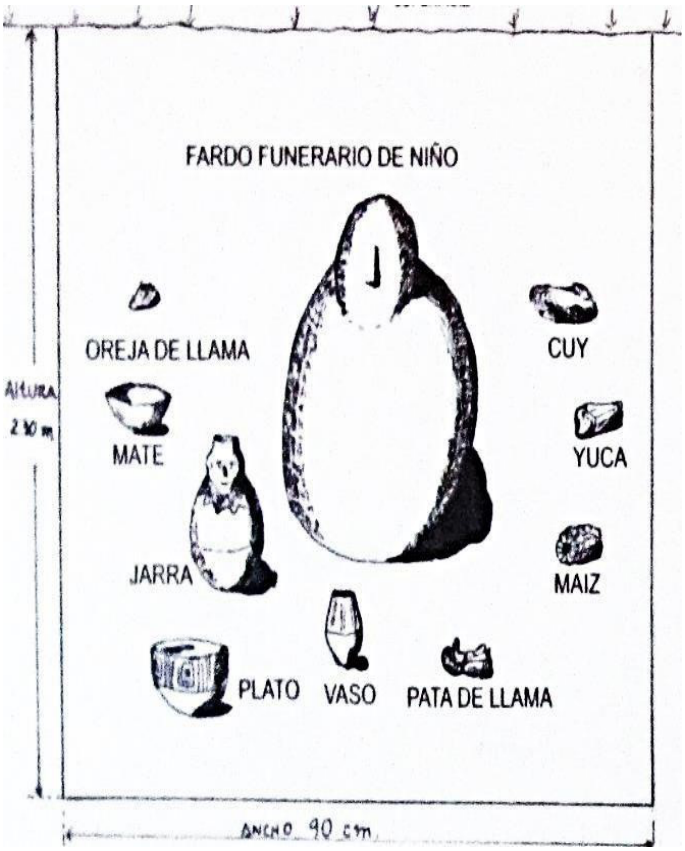



**FIGURE3:** Sketch of the mortuary context, with a selection of grave goods.

Clockwise: guinea pig; yucca; maize; llama foot; vessel (pottery); bowl (pottery); effigy jar (pottery); gourd; llama ear.

The burial pit is noted as 230 cms deep and 90 cms wide.

Photographs taken with kind permission of the Ica Museum Director

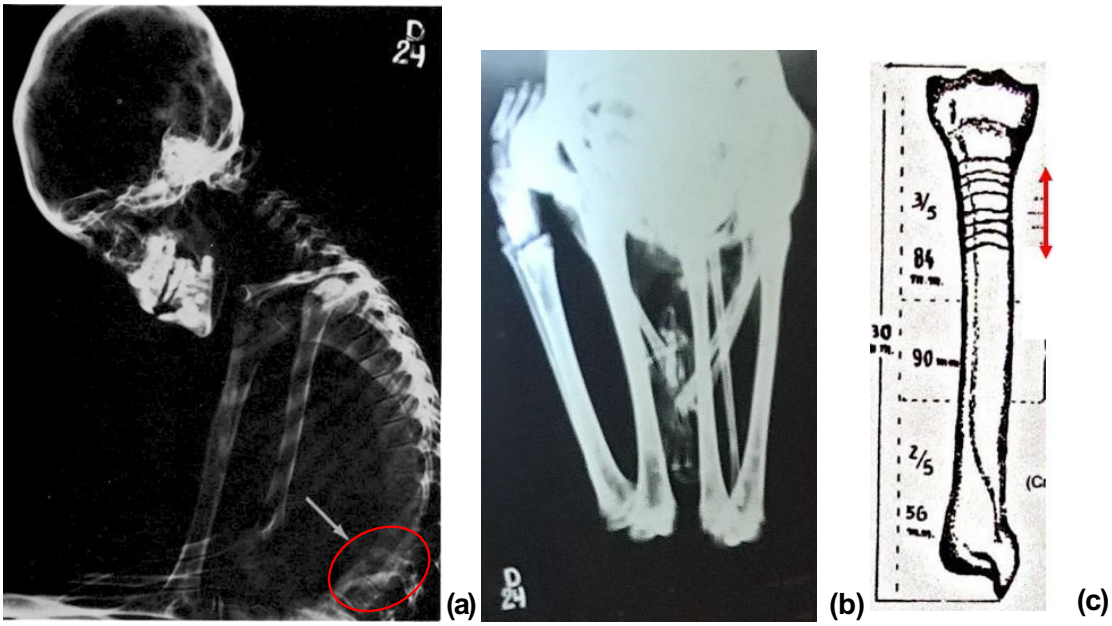



**FIGURE 4: (a)** Left lateral X-ray of head and upper body; evidence of TB (Pott's disease) manifests in changed lumbar spine bone density (arrow). **(b)** X-ray of lower limbs. Both tibiae exhibit Harris lines (although these are hard to distinguish in the photograph). **(c)** Sketch of right tibia, Harris lines (indicated) suggesting 7 or 8 instances of growth disruption between ages of 1.5 and 7 years.

Photographs taken with kind permission of the Ica Museum Director

**Table 1: Likely timing and nature of TB disease progression.**

| Age | Event |
|---|---|
| ~1.5 – 2 years | Primary TB infection, likely mild symptoms which quickly resolve. Infection becomes dormant.<br>First Harris line appears ~18 months. |
| ~3 - 5 years | Reactivation of dormant TB - onset of Pott's disease (TB of the spine).<br>Symptoms initially non-specific and mild, but gradually increasing in intensity – they include e.g. pain, fever, night sweats, weight loss, fatigue, respiratory problems, weakened immune system.<br>Likely periods of intermittent improvement in symptoms, followed by return of symptoms.<br>Four Harris lines correspond to this period. |
| 5 – 7+ years | Psoas abscess initiates (between 5-6 years), infecting adjoining lumbar vertebral bone and intervertebral discs, and further undermining spinal integrity. Increasingly destructive impacts of Pott's disease. Incremental damage to lumbar spine results in spinal deformity and neurological dysfunction. All symptoms (see above) increase in severity.<br>The two last Harris lines correspond to this period. |
| 7+ - 8 years | TB crosses into the blood stream and is widely disseminated throughout the body - bacteria infect lung, liver, kidney and heart.<br>This rapidly leads to multiple organ failure, with death likely occurring within days. |

**GLOSSARY: Case Study No. 4 – The Nasca Boy**

*** For more detailed definitions refer to your textbooks or a dictionary.**

**Harris lines -** dense, transverse lines seen in X-rays of long bones. Formed during the period of skeletal development, each line indicates a temporary interruption to growth – usually in response to physiological stress (pathology, nutritional deficiency).

**Histological analysis -** the study of the structure ('microanatomy') of cells, tissues and organs using a microscope.

**Kyphosis -** an abnormal outward curve of the spine which causes the upper back to 'hunch forward'. It is often found in association with vertebral damage of spinal TB. It may cause stiffness, discomfort and/or pain, but it may also be asymptomatic (see 'scoliosis').

**Macroscopic analysis -** study of material with the naked eye – assessing evidence without the aid of any magnifying optical instruments.

**Pericardium -** a protective, fibrous, fluid-filled sac which surrounds the heart, separates it from other structures, and supports cardiac function.

**Pott's disease -** TB infection of the spine, most commonly affecting the lower thoracic and upper lumbar vertebrae and usually resulting from hematogenous (blood-borne) TB infection from another site - often the lungs.

**Psoas abscess -** a pocket of pus in the psoas muscle resulting from bacterial infection (the psoas muscles are long, ribbon-shaped muscles running either side of the lower back; infection is usually on one side only). In this case, TB bacteria have most likely spread to the psoas muscle from the TB-infected lumbar vertebrae. Symptoms will mirror many of those associated with TB (see Table 1) but are also likely to include back pain and pain radiating down the lower body.

**Radiographic analysis -** use of radiation to view the internal parts of the body. In this study, X-rays were used.

**Scoliosis -** a sideways curvature of the spine, quite commonly found in association with the vertebral damage of spinal TB. As with kyphosis (see above), it may cause stiffness, discomfort and/or pain, but mild scoliosis may be asymptomatic.

**Short Form Index of Care**

# SHORT FORM INDEX OF CARE

Site No._____ Project Name: _____ Burial No._____

Estimated Sex[1]: _____ Estimated Age[2]: _____ Other Identifier: _____

| | | |
|---|---|---|
| **DOCUMENT** | **Diagnosis** | ☐ Single [agreed] diagnosis_____<br>☐ Possible diagnoses (if more than one)_____<br>☐ Unknown_____ |
| | **Comments** | |
| | **Disease Type** | *Select all that apply:*<br>☐ Infectious ☐ Metabolic ☐ Dental<br>☐ Trauma ☐ Joint Disease ☐ Congenital<br>☐ Neoplasm (Cancer) ☐ Other |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Activity** | ☐ Active ☐ Healing ☐ Healed |
| | **Comments** | |
| **POSSIBLE/ PROBABLE IMPACTS** | **CLINICAL** | |
| | *Select all that apply:*<br>☐ Muscle-Skeletal (e.g. trauma, joint disease, etc.) ☐ Nervous/Sensory ☐ Mental/Cognitive<br>☐ Respiratory ☐ Immune ☐ Digestive/Metabolic/Endocrine<br>☐ Reproductive/Genitourinary ☐ Skin/Soft Tissue ☐ Unknown/Unsure | |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |

[1] Male, Female, Probable Female, Probable Male, Ambiguous, Indeterminate

[2] Fetal (*in utero*) Infant (birth to 3 years) Child (3 to 12 years) Adolescent (13 to 17 years) Young Adult (18 to 25 years) Young Middle Adult (26 to 35 years) Middle Adult 36 to 45 years Mature Adult (46+ years) Adult (>25 years)

Recorder Names:_____ Date:_____

# SHORT FORM INDEX OF CARE

| | | |
|---|---|---|
| **POSSIBLE/ PROBABLE IMPACTS** | **FUNCTIONAL** | |
| | **Essential** | *Select all that apply:*<br>☐ Access to food/water ☐ Manage Personal Hygiene<br>☐ Mobility (short distances) ☐ Feed and Drink oneself<br>☐ Control body position ☐ Motor Control/handle objects<br>☐ Speech function/communication |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |
| | **Societal/ Instrumental** | *Select all that apply:*<br>☐ "Lifestyle" Demands ☐ Economic/ Contribute to Community<br>☐ Domestic Duties ☐ Mobility (long distance)<br>☐ Community Life ☐ Interpersonal Relationships<br>☐ Learning/Applying Knowledge ☐ Unknown/Unsure |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |
| Based on the evidence discussed in the case study above, do you feel that this individual is suitable for full assessment for the Bioarchaeology of Care (Index of Care)? Yes:_____ Possibly:_____ No:_____ | | |

**Additional Comments:** _____

_____

_____

_____

_____

Recorder Names:_____ Date:_____

# SHORT FORM INDEX OF CARE

Site No._____ Project Name: _____ Burial No._____

Estimated Sex[1]: _____ Estimated Age[2]: _____ Other Identifier: _____

| | | |
|---|---|---|
| **DOCUMENT** | **Diagnosis** | ☐ Single [agreed] diagnosis_____<br>☐ Possible diagnoses (if more than one)_____<br>☐ Unknown_____ |
| | **Comments** | |
| | **Disease Type** | *Select all that apply:*<br>☐ Infectious ☐ Metabolic ☐ Dental<br>☐ Trauma ☐ Joint Disease ☐ Congenital<br>☐ Neoplasm (Cancer) ☐ Other |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Activity** | ☐ Active ☐ Healing ☐ Healed |
| | **Comments** | |
| **POSSIBLE/ PROBABLE IMPACTS** | **CLINICAL** | |
| | *Select all that apply:*<br>☐ Muscle-Skeletal (e.g. trauma, joint disease, etc.) ☐ Nervous/Sensory ☐ Mental/Cognitive<br>☐ Respiratory ☐ Immune ☐ Digestive/Metabolic/Endocrine<br>☐ Reproductive/Genitourinary ☐ Skin/Soft Tissue ☐ Unknown/Unsure | |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |

[1] Male, Female, Probable Female, Probable Male, Ambiguous, Indeterminate

[2] Fetal (*in utero*) Infant (birth to 3 years) Child (3 to 12 years) Adolescent (13 to 17 years) Young Adult (18 to 25 years) Young Middle Adult (26 to 35 years) Middle Adult 36 to 45 years Mature Adult (46+ years) Adult (>25 years)

Recorder Names:_____ Date:_____

# SHORT FORM INDEX OF CARE

| | | |
|---|---|---|
| **POSSIBLE/ PROBABLE IMPACTS** | **FUNCTIONAL** | |
| | **Essential** | *Select all that apply:*<br>☐ Access to food/water ☐ Manage Personal Hygiene<br>☐ Mobility (short distances) ☐ Feed and Drink oneself<br>☐ Control body position ☐ Motor Control/handle objects<br>☐ Speech function/communication |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |
| | **Societal/ Instrumental** | *Select all that apply:*<br>☐ "Lifestyle" Demands ☐ Economic/ Contribute to Community<br>☐ Domestic Duties ☐ Mobility (long distance)<br>☐ Community Life ☐ Interpersonal Relationships<br>☐ Learning/Applying Knowledge ☐ Unknown/Unsure |
| | **Comments** | |
| | **Duration** | ☐ Chronic (> 6 months) or ☐ Acute (< 6 months) ☐ Unsure/Unknown |
| | **Comments** | |
| Based on the evidence discussed in the case study above, do you feel that this individual is suitable for full assessment for the Bioarchaeology of Care (Index of Care)? Yes:_____ Possibly:_____ No:_____ | | |

**Additional Comments:** _____

_____

_____

_____

_____

Recorder Names:_____ Date:_____

## Workshop Information

If you have any questions or would like to collaborate, feel free to email us collectively at: indexofcare@gmail.com or use any of the individual email addresses provided below.

All workshop materials are available digitally through the following QR codes

BoC Teaching Materials at Index of Care Website:

Workshop Materials:

Full Workshop

Solcor Individual

Romito 2

The Nasca Boy

Bioarchaeology of Care Podcast

**Workshop Leaders**

Alyson Caine, PhD.

Cainea703@gmail.com or caineac@jmu.edu

Alyson is a bioarchaeologist who completed her PhD at University of California, Merced, in 2023. She also has a master's degree in Paleopathology from Durham University. Her work reconsiders extant archaeological collections, specifically legacy collections, for which proper documentation or study hasn't been completed. Of particular interest, is the use and disuse of skeletal remains as objects from these collections and their place in producing narratives of the past. In addition to this work, she works collaboratively with Indigenous communities and contract archaeologists to consider heritage stewardship. Through this collaboration, she works to integrate stakeholders into data collection and subsequent interpretations, specifically for the administration and experience of health-related care in the past. She is the author of several journal articles, including Living with Chronic Impairment: Tracing Care Using Changes in the Skeleton and Moments of Movement and Stillness for Senebtisi Since 1907, and monographs on archaeological excavations she participated in, in California and the Arabian Peninsula.

Ihuixaya Tapia, MSc., RPA

btapia@csumb.edu

Ihuixaya is a tribal archaeologist, academic researcher and lecturer at California State University, Monterey Bay. Her work focuses on Indigenous Archaeology specifically as it pertains to bioarchaeology and the decolonization of archaeology and paleopathology. Her areas of expertise as a Lecturer and Academic Researcher include but are not limited to Indigenous Archaeology, Applied Bioarchaeology, Osteological Analysis, MesoAmerican Archaeology, Native American Studies, Qualitative/Quantitative Research Methods, and Experimental Archaeology. She also serves as a field archaeologist specializing in Tribal Monitoring, Pre-Colonial Osteological Recovery and Analysis, and Pre-Colonial Site Excavation.

Christopher Canzonieri, MA, RPA

Canz1970@gmail.com or canz@basinresearch.com

Chris received his MA in 2001 from California State University East Bay (formally Hayward). He is an experienced archaeologist and biological anthropologist with over 25 years of experience and expertise in California archaeology. He serves as Project Archaeologist, Biological Anthropologist, and Native American Liaison and Marketing Director for Basin Research Associates, Inc. Chris has supervised hundreds of archaeological and burial recovery excavations, field assessments (surveys), and laboratory analyses for prehistoric and historic sites in California as a subcontractor for numerous cultural resource management companies. He specializes in California prehistory, human osteology, and paleopathology, with research interests in taphonomy, trauma, parasitology, site formation, prehistoric migration, paleoanthropology, and the peopling of California. He has a professional and friendly relationship with several Native American Tribes in the Greater San Francisco Bay Area. Chris has contributed to over 200 manuscripts and reports, including site assessments, field inventories, evaluations, site testing reports, and specialized osteological reports, and recorded hundreds of archaeological sites throughout California. He has co-authored several journal articles and co-edited the in-press book *Native Persistence at a California Mission Outpost: The Bioarchaeology and History of the Asistencia de San Pedro y San Pablo.*

Lorna Tilley, Independent Researcher, Australia, and Tony Cameron, IT Consultant, Australia, provided input and support for this Workshop including developing case studies and technological support for their dissemination.