

## Bioarchaeological Analyses – 2025

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**Isotope analyses.** Thirteen enamel samples (Grave 15, 16, 17, 18, 19, 21, 23, 24, 25, 27, 28, 29, 30) for provenance analysis ( $^{87}\text{Sr}/^{86}\text{Sr}$ ,  $\delta^{18}\text{O}$ ,  $\delta^{13}\text{C}$ , TE), ten bone samples (Grave 18, 19, 21, 23, 24, 25, 27, 28, 29, 30) for dietary reconstruction (bulk dietary CNS) and one tooth sample (Grave 15, Bjarni Halldórsson) for incremental dentine analysis and bulk dietary CNS were prepared and began analysis in 2024 at Durham University. The results are expected in May 2025.

**Ancient DNA.** Twelve samples that were prepared in 2024 for ancient DNA analysis and are currently undergoing analysis. The samples prepared and processed for analyses beginning in 2024 include Grave 16, 17, 18, 19, 21, 23, 24, 25, 27, 28, 29, 30. Results are expected 2026-2027.

**Radiocarbon dating.** Five samples were selected from three individuals (Grave 21, 28, 29) for AMS radiocarbon dating. The results are included below with the osteological descriptions.

**Osteological analyses.** The remains of ten individuals were recovered from Þingeyrar in the excavation season of 2024. The graves contained: three adult individuals of indeterminate sex (Grave 24, 27, 28), four adult probable males (Grave 23, 25, 29, 30) and three adult probable females (Grave 21, 22, 26). Also reported here are Graves 18 (adult male) and 19 (non-adult) from the excavation season of 2023.

*Grave 18 (Pjms. 2023-36-1050).* The middle adult (26-35) male individual from Grave 18 had a stature of  $174.46 \pm 3.27$  cm. Cleft neural arches were observed on the sacrum (S1-S2) and the fifth lumbar vertebra, which exhibits unilateral left hypoplasia. The right and left 12<sup>th</sup> ribs abnormally short, which could be due to developmental defect or normal human variation, as the 12<sup>th</sup> rib tends to vary substantially in length.

*Grave 19 (Pjms. 2023-36-1051).* The non-adult (6-10) individual from Grave 19 had a stature of  $108.5 \pm 8$  cm. The skeleton is very well preserved, nearly complete, and shows a combination of soft tissue/purge fluid preservation alongside copper alloy staining, especially on the mandible, sternum, upper vertebrae, clavicles and tibiae. Some wood and/or other organic fibres can also be seen on the tibiae. While no pathologies were observed, the mandibular deciduous molars show substantial calculus despite the young age at death.

*Grave 21 (Pjms. 2024-36-1215).* The adult (30+) female individual had a stature of  $150.68 \pm 3.72$  cm. Mandibular torus and palatine torus, non-metric traits seen in over 50% of Icelandic archaeological individuals, were observed. The transverse foramina of the atlas are open. Advanced periodontal disease with ante-mortem tooth loss was also observed, in addition to slight calculus on the teeth. Two samples (one rib fragment and one vertebral arch) were radiocarbon dated, both providing a conventional age of  $450 \pm 30$  BP and calendar calibrated ages of 1413-1479 calAD.

*Grave 22 (Pjms. 2024-36-1224).* The adult (17-25) probable female individual had a stature of  $162.29 \pm 3.72$  cm. The femoral head, which fuses around the age of 18, had recently fused at the time of death. The skeleton shows no pathological changes, but the poor preservation limited observations.

*Grave 23 (Pjms. 2024-36-1216).* The adult (17-25) probable male individual had no complete long bones and stature could not be estimated. The skeletal remains are poorly preserved and highly fragmentary. Moderate calculus was observed on all teeth. Concha bullosa, which can cause sinus obstruction, was observed.

*Grave 24 (Pjms. 2024-36-1217).* The adult (17-25) individual of Grave 24 is represented only by a gracile mandible and small sized teeth. The teeth show flecks of calculus.

*Grave 25 (Pjms. 2024-36-1218).* The adult (36-45) individual had a stature of  $175.78 \pm 4.32$  cm. The mandibular and maxillary dentition both show parafunctional dental attrition, in which all four quadrants show differing extents and patterns of wear. This indicates that the individual may have used their teeth as tools. However, variable attrition could also indicate that the individual preferred one-sided mastication due to dental or joint pain for example. The maxilla shows a palatine torus as well and periodontal disease was observed in all four quadrants. The right 5<sup>th</sup> metacarpal (hand) was fractured but was well-healed at the time of death.

*Grave 26 (Pjms. 2024-36-1219).* The adult (30+) female had no complete long bones and stature could not be estimated. The skeletal remains were poorly preserved. The individual had osteoarthritis throughout the spine and non-spinal joints. A cleft neural arch (bilateral hypoplasia) was observed on the atlas (C1), a developmental or pathological defect that can contribute to neurological conditions.

*Grave 27 (Pjms. 2024-36-1220).* The non-adult (around 16-17) individual's bones were fragmentary and stature could not be estimated. A developmental defect of the right occipital condyle and right superior facet of the atlas (C1) was observed. The third molars are unerupted and the fusion of the vertebral body surfaces is incomplete.

*Grave 28 (Pjms. 2024-36-1221).* The adult (36-45) individual's bones were poorly preserved and fragmentary, and stature could not be estimated. The bones appear gracile but provided no other indicators of biological sex. A developmental pit was observed on the right glenoid fossa. The left mandibular 2<sup>nd</sup> molar had an ante-mortem root fracture and periapical lesions around the tooth roots of the mandibular left 1<sup>st</sup> and 2<sup>nd</sup> molars were observed. One rib fragment sample was radiocarbon dated, providing a conventional age of  $880 \pm 30$  BP and a calendar calibrated age range of 1122-1227 calAD.

*Grave 29 (Pjms. 2024-36-1222).* The adult (17-25) male individual had a stature of  $168.03 \pm 3.29$  cm. The remains were exceptionally poorly preserved and fragmentary. Double atlas facets, a non-metric trait, were observed. The left radius exhibits partial radial aplasia, a congenital defect affecting the formation of the radius (the distal 2/3rds of the radius never formed). A vertebral arch fragment provided a date of  $910 \pm 30$  and a calendar calibrated range of 1040-1214 calAD.

*Grave 30 (Pjms. 2024-36-1223).* The adult (36-45) male individual had a minimum stature of approximately  $158.99 \pm 3.27$  cm. The dentition shows uneven attrition, possibly indicating parafunctional tooth wear. Some of the tooth roots show hypercementosis. Maxillary torus and mandibular torus were both observed. The individual also had osteoarthritis throughout the skeleton, maxillary sinusitis (non-specific upper respiratory disease) and periodontal disease on all quadrants.