Using digitized Native American skeletal remains to conduct osteological analyses.

Conducting osteological analyses on human skeletal material enhances our knowledge of these remains. Photos and descriptions are insufficient when communicating the wear, pathology, variation, or nuances of native populations. There are numerous laws, regulations, and financial dilemmas hindering our ability to further research human skeletal remains. Unfortunately, smaller institutions frequently find sophisticated imaging tools to be cost-prohibitive. Photographs lack sufficient detail when attempting to capture and convey an accurate representation of the unique structure, markings, and degeneration of human skeletal remains. Integrating new technology and techniques into this field has the potential to solve these dilemmas. CT scanning and file extracting creates virtual three-dimensional models and stores the information for future study. This removes the time limit surrounding this research (due to mandatory repatriation) and allows for thorough skeletal analyses. To assess this methodology, we conducted complete osteological analyses on two CT replicated human skeletal remains of two individuals uncovered during the archaeological excavation in Cabell County, West Virginia. In previous studies we analyzed the accuracy of the digital data by comparing physical human remains to the digitized versions. We hypothesized that the digital replicas allow a complete osteological analysis of the human skeletal material. Data were collected using human remains digitized on a GE VCT Medical CT scanner. The CT data were extracted into a 3D digital file for analysis while using the Standards for Data Collection from Human Skeletal Remains. Results show we can indicate identification of fundamental skeletal anatomy with all skeletal landmarks and basic osteometric measurements.