

## Appendix E

# Estimation of withers heights based on faunal remains

See accompanying Excel file for the data. The withers heights of equids from the third and second millennium BCE Near East are not commonly published. However, estimates can be made based on tabulations created and used by scholars for many years (Kiesewalter 1888; May 1985; most recently reviewed by Johnstone 2004). Published withers heights are listed here, along with new estimates based on published measurements of equid bones.

### Comments on the Excel file

- Columns in black font are based on the published data listed in the main source.
- All measurements are in cm
- Columns in blue are new calculations based on the revised tabulations in Johnstone (2004: 156, table 3.5).
- Only calculations based on measurements of the humerus, radius, metacarpal, and metatarsal are included since other skeletal elements analysed in detail by Johnstone were found to be unreliable. The tabulations were initially created for horses, and Johnstone's test on donkeys and mules also showed that the tibia is not reliable for those species (2004: 161).
- The measurements used are those of the greatest length (GL) and/or lateral length (LL), each with a slightly different multiplication factor.
- The calculations are estimates, and a certain range of error is to be expected. This is noticeable in the excel table, where elements from a single individual give a range of results, and the same even occurs for single bones, varying between the greatest length and lateral length. The many possible reasons for these discrepancies are outlined by Johnstone in detail (2004: 151-61), and she notes that a difference of up to 15 cm may occur (beyond which the possibility of the bones coming from different animals should be considered, 2004: 157).
- Species identification is based on published data; it should be noted that these are often at least partially based on size.

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