able 2–1. Means (m) and standard deviations (s) as derived from the standard 95% reference intervals for the arterial acid-base variables. The standard deviations are calculated by assuming the 95% reference intervals to be 4 standard deviations wide.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 95 % reference interval | *m* | *s* |
| pH | 7.35 – 7.45 | 7.40 | 0.025 |
| PaCO2 (mmHg) | 35 – 45 | 40 | 2.5 |
| PaCO2 (kPa) | 4.7 – 6.0 | 5.33 | 0.325 |
| BE (mmol/l) | -3 – 3 | 0 | 1.5 |
| a[] (mmol/l) | 21 – 27 | 24 | 1.5 |
| log PaCO2 (mmHg) | log 35 – log 40 | log 40 | (log 35 – log 40) / 4 |
| log PaCO2 (kPa) | log 4.7 – log 6.0 | log 5.33 | (log 4.7 – log 6.0) / 4 |
| log a[] | log 21 – log 27 | log 24 | (log 21 – log 27) / 4 |

able 2–2. Normalised eigenvectors  of each principal component as obtained after PCA. The eigenvectors for PC1, PC2 and PC3 are columns 1, 2 and 3, respectively of the eigenmatrix matrix U. The eigenmatrix U will be the input of calculations to be presented in the next chapters.

|  | PC1 | PC2 | PC3 |
| --- | --- | --- | --- |
| AZRbe | (0.297, -0.885, -0.358) | (0.709, -0.046, 0.703) | (0.639, 0.463, -0.614) |
| OLVGbe | (-0.039, -0.777, -0.628) | (0.742, -0.444, 0.503) | (0.669, 0.446, -0.594) |
| OLVGab | (0.044, 0.686, 0.727) | (-0.839, 0.420, -0.346) | (0.542, 0.594, -0.594) |
| SKZbe | (0.635, -0.757, 0.153) | (0.425, 0.508, 0.749) | (0.645, 0.411, -0.649) |
| ELIbe | (0.732, -0.184, 0.656) | (-0.184, 0.874, 0.450) | (0.656, 0.450, -0.605) |
| ELIab | (0.734, -0.012, 0.679) | (-0.391, 0.811, 0.436) | (0.556, 0.585, -0.590) |

able 2–3. Eigenvalues  and contributions to the total variance in the initial data set (in brackets) for each principal component.

|  | PC1 | PC2 | PC3 |
| --- | --- | --- | --- |
| AZRbe | 20.54 (62.37%) | 12.16 (36.91%) | 0.235 (0.71%) |
| OLVGbe | 26.04 (69.70%) | 11.22 (30.03%) | 0.101 (0.27%) |
| OLVGab | 25.52 (74.30%) | 8.82 (25.67%) | 0.009 (0.03%) |
| SKZbe | 21.09 (78.01%) | 5.87 (21.72%) | 0.072 (0.27%) |
| ELIbe | 23.62 (64.55%) | 12.83 (35.07%) | 0.137 (0.37%) |
| ELIab | 20.36 (58.91%) | 14.17 (41.00%) | 0.032 (0.09%) |

able 2–4. Characteristics (m is mean and s is the standard deviation) of the principal component value distributions.

|  | PC1 | | PC2 | | PC3 | |
| --- | --- | --- | --- | --- | --- | --- |
|  | *m* | *s* | *m* | *s* | *m* | *s* |
| AZRbe | 1.282 | 4.532 | 0.695 | 3.487 | 0.177 | 0.485 |
| OLVGbe | -0.773 | 5.103 | -0.315 | 3.349 | -0.215 | 0.317 |
| OLVGab | 0.357 | 5.052 | 0.250 | 2.969 | -0.282 | 0.097 |
| SKZbe | -3.358 | 4.593 | -2.676 | 2.423 | -0.109 | 0.268 |
| ELIbe | -1.025 | 4.860 | 0.062 | 3.582 | -0.005 | 0.370 |
| ELIab | -1.008 | 4.513 | -0.038 | 3.765 | -0.071 | 0.178 |