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| **Supplementary Table 1.** Case-control comparison of mean element levels in nails. | | | |
|  | **Controls** | **ALS patients** |  |
|  | n=210 | n=70 | **univariate** |
| **Element** | **log10 mean (SD)** | **log10 mean (SD)** | **p-value** |
| Hg | -1.03 (0.50) | -1.13 (0.58) | 0.14 |
| As | -1.29 (0.27) | -1.29 (0.29) | 0.98 |
| Cd | -2.21 (0.46) | -2.23 (0.43) | 0.72 |
| Co | -2.14 (0.45) | -2.11 (0.43) | 0.59 |
| Cr | -0.65 (0.61) | -0.68 (0.58) | 0.69 |
| Cu | 0.56 (0.14) | 0.60 (0.15) | 0.087 |
| Fe | 1.12 (0.36) | 1.09 (0.42) | 0.58 |
| Mn | -0.73 (0.47) | -0.73 (0.47) | 0.97 |
| Pb | -1.01 (0.41) | -0.98 (0.45) | 0.60 |
| Se | -0.02 (0.08) | -0.02 (0.07) | 0.77 |
| \*Adjusted for age and smoking. | |  |  |

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| **Supplementary table 2.** Case-control comparison of element levels in nails categorized above vs. below the 90th percentile. | | | | |
|  |  | **Controls** | **ALS patients** |  |
|  | **≥90th percentile** | n=210 | n=70 | **univariate** |
| **Element** | **log10 ug/g** | **n (%)** | **n (%)** | **p-value** |
| Hg | < -0.42 | 195 (92.9) | 57 (81.4) | 0.011 |
|  | ≥ -0.42 | 15 (7.1) | 13 (18.6) |  |
| As | < -0.94 | 191 (91.0) | 61 (87.1) | 0.49 |
|  | ≥ -0.94 | 19 (9.0) | 9 (12.9) |  |
| Cd | < -1.67 | 189 (90.0) | 63 (90.0) | 1 |
|  | ≥ -1.67 | 21 (10.0) | 7 (10.0) |  |
| Co | < -1.62 | 189 (90.0) | 63 (90.0) | 1 |
|  | ≥ -1.62 | 21 (10.0) | 7 (10.0) |  |
| Cr | < 0.0020 | 190 (90.5) | 62 (88.6) | 0.82 |
|  | ≥ 0.0020 | 20 (9.5) | 8 (11.4) |  |
| Cu | < 0.75 | 193 (91.9) | 59 (84.3) | 0.11 |
|  | ≥ 0.75 | 17 (8.1) | 11 (15.7) |  |
| Fe | < 1.54 | 185 (88.1) | 67 (95.7) | 0.11 |
|  | ≥ 1.54 | 25 (11.9) | 3 (4.3) |  |
| Mn | < -0.14 | 191 (91.0) | 61 (87.1) | 0.49 |
|  | ≥ -0.14 | 19 (9.0) | 9 (12.9) |  |
| Pb | < -0.49 | 191 (91.0) | 61 (87.1) | 0.49 |
|  | ≥ -0.49 | 19 (9.0) | 9 (12.9) |  |
| Se | < 0.075 | 188 (89.5) | 64 (91.4) | 0.82 |
|  | ≥ 0.075 | 22 (10.5) | 6 (8.6) |  |