

Table 11-4. Concentration (mg/kg) of food additives by food category in adults (20-64 year olds).

| Compound                            | Group A/B * | 20-64 year olds             |             |                                 |                             |                                     |                                    |                                       |
|-------------------------------------|-------------|-----------------------------|-------------|---------------------------------|-----------------------------|-------------------------------------|------------------------------------|---------------------------------------|
|                                     |             | I. Seasonings and beverages | II. Cereals | III. Potatoes, legumes and nuts | IV. Fish/shellfish and meat | V. Fats/oils and milk/milk products | VI. Sugar and confections/savories | VII. Fruits, vegetables, and seaweeds |
| <b>Food Intake (g)</b>              |             | 253.08                      | 276.10      | 141.42                          | 234.98                      | 124.36                              | 31.97                              | 427.93                                |
| Aspartame                           | A           | 5                           | ND          | ND                              | ND                          | TR                                  | 40.33333333                        | ND                                    |
| Xylitol                             | B           | 10                          | ND          | ND                              | ND                          | ND                                  | 60                                 | ND                                    |
| Glycyrrhizine                       | B           | 0.9                         | ND          | 0.52                            | TR                          | ND                                  | ND                                 | TR                                    |
| Sodium saccharin                    | A           | ND                          | ND          | ND                              | 1.89                        | ND                                  | ND                                 | 0.74                                  |
| D-Sorbitol                          | B           | 170                         | 210         | 540                             | 1080                        | ND                                  | 5260                               | 690                                   |
| D-Mannitol                          | B           | 170                         | 2220        | 900                             | 40                          | ND                                  | 120                                | 490                                   |
| Amaranth                            | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Erythrosine                         | A           | ND                          | ND          | ND                              | 0.01                        | ND                                  | ND                                 | ND                                    |
| Allura red AC                       | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| New cocchine                        | A           | ND                          | ND          | ND                              | 0.004                       | ND                                  | ND                                 | 0.012                                 |
| Phloxine                            | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Rose bengale                        | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Acid red                            | A           | ND                          | ND          | ND                              | ND                          | ND                                  | 0.003                              | ND                                    |
| Tartrazine                          | A           | ND                          | ND          | ND                              | ND                          | ND                                  | 0.021                              | ND                                    |
| Sunset yellow FCF                   | A           | ND                          | ND          | ND                              | ND                          | ND                                  | 0.004                              | ND                                    |
| Fast green FCF                      | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Brilliant blue FCF                  | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Indigo carmine                      | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Titanium dioxide                    | B           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| $\beta$ -Carotene                   | B           | 0.716666667                 | 0.05        | 0.03                            | 0.046666667                 | 0.1                                 | 0.2133333333                       | 3.973333333                           |
| Norbixine                           | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Sulfurous acid                      | B           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Benzoic acid                        | A           | 1.628333333                 | 0.176666667 | 0.516666667                     | 0.261666667                 | 1.463666667                         | 0.4583333333                       | 0.1023333333                          |
| Sorbic acid                         | A           | ND                          | 6.49        | 9.5                             | 51.35                       | ND                                  | 21.46                              | 4.74                                  |
| Dehydroacetic acid                  | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Isobutyl <i>p</i> -hydroxybenzoate  | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Isopropyl <i>p</i> -hydroxybenzoate | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Ethyl <i>p</i> -hydroxybenzoate     | A           | 0.3                         | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Butyl <i>p</i> -hydroxybenzoate     | A           | 0.7                         | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Propyl <i>p</i> -hydroxybenzoate    | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Propionic acid                      | B           | 4.133333333                 | TR          | 2.533333333                     | 3.8                         | TR                                  | TR                                 | TR                                    |
| EDTA                                | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Erythorbic acid                     | A           | ND                          | ND          | ND                              | 0.71                        | ND                                  | ND                                 | ND                                    |
| Isopropyl citrate                   | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |

| Compound                       | Group A/B * | 20-64 year olds             |             |                                 |                             |                                     |                                    |                                       |
|--------------------------------|-------------|-----------------------------|-------------|---------------------------------|-----------------------------|-------------------------------------|------------------------------------|---------------------------------------|
|                                |             | I. Seasonings and beverages | II. Cereals | III. Potatoes, legumes and nuts | IV. Fish/shellfish and meat | V. Fats/oils and milk/milk products | VI. Sugar and confections/savories | VII. Fruits, vegetables, and seaweeds |
| L-Cysteine                     | B           | 99                          | 17          | 270                             | 25                          | 28                                  | 5                                  | 49                                    |
| Butylated hydroxytoluene (BHT) | A           | ND                          | ND          | TR                              | ND                          | ND                                  | TR                                 | TR                                    |
| d- $\alpha$ -Tocopherol        | B           | 5.71                        | 1.92        | 2.2                             | 10.6                        | 16.8                                | 10.1                               | 1.53                                  |
| d- $\beta$ -Tocopherol         | B           | 0.11                        | 0.29        | 0.53                            | 0.1                         | 0.37                                | 0.35                               | NQ                                    |
| d- $\gamma$ -Tocopherol        | B           | 1.41                        | 1.7         | 22                              | 2.67                        | 24.9                                | 13                                 | 0.19                                  |
| d- $\delta$ -Tocopherol        | B           | 1.5                         | 0.58        | 13.2                            | 0.42                        | 2.91                                | 3.45                               | NQ                                    |
| Butylated hydroxyanisole (BHA) | A           | ND                          | TR          | TR                              | ND                          | ND                                  | TR                                 | TR                                    |
| Propyl gallate                 | A           | ND                          | ND          | TR                              | ND                          | ND                                  | ND                                 | ND                                    |
| Nitrite                        | B           | ND                          | ND          | 2.4                             | ND                          | ND                                  | ND                                 | ND                                    |
| Nitrate                        | B           | 9.7                         | 1.9         | 4.6                             | 2.7                         | 2.2                                 | 10.5                               | 664                                   |
| Imazaryl                       | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| <i>o</i> -Phenylphenol         | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Diphenyl                       | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Thiabendazole                  | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | 0.0025                                |
| L-Aspartic acid                | B           | 430                         | 111         | 637                             | 160                         | 17                                  | 108                                | 229                                   |
| DL-Alanine                     | B           | 653                         | 27          | 313                             | 780                         | 23                                  | 48                                 | 298                                   |
| Disodium 5'-inosinate          | B           | 109                         | ND          | ND                              | 2.5                         | ND                                  | ND                                 | ND                                    |
| Disodium 5'-uridylylate        | B           | 4                           | ND          | ND                              | 0.7                         | 0.2                                 | 0.5                                | ND                                    |
| Disodium 5'-guanylylate        | B           | 13.8                        | ND          | ND                              | 0.5                         | ND                                  | 0.6                                | ND                                    |
| Glycine                        | B           | 262                         | 75          | 129                             | 648                         | 9                                   | 60                                 | 84                                    |
| L-Glutamic acid                | B           | 4910                        | 213         | 1400                            | 940                         | 17                                  | 206                                | 400                                   |
| Disodium 5'-cytidylate         | B           | ND                          | ND          | ND                              | 0.5                         | ND                                  | 0.5                                | ND                                    |
| L-Theanine                     | B           | 58                          | TR          | 19                              | 11                          | ND                                  | ND                                 | 3                                     |
| L-Isoleucine                   | B           | 360                         | TR          | 228                             | 175                         | 8                                   | ND                                 | 78                                    |
| L-Tryptophan                   | B           | 19                          | 24          | 111                             | 3                           | 3                                   | 6                                  | 18                                    |
| L-Threonine                    | B           | 276                         | 7           | 218                             | 13                          | 6                                   | 10                                 | 94                                    |
| L-Valine                       | B           | 402                         | 8           | 383                             | 265                         | 29                                  | 6                                  | 121                                   |
| L-Histidine                    | B           | 170                         | 9           | 177                             | 948                         | 7                                   | 3                                  | 86                                    |
| L-Phenylalanine                | B           | 350                         | 27          | 521                             | 232                         | 17                                  | 14                                 | 103                                   |
| DL-Methionine                  | B           | 82                          | 10          | 172                             | 165                         | 6                                   | ND                                 | 19                                    |
| L-Lysine                       | B           | 388                         | 20          | 808                             | 233                         | 31                                  | 3                                  | 138                                   |
| L-Ascorbic acid                | B           | 57.7                        | 1.7         | 92                              | 41.2                        | 7                                   | 102                                | 165                                   |
| L-Ascorbyl stearate            | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| L-Ascorbyl palmitate           | A           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Thiamine                       | B           | 0.4                         | 0.9         | 0.84                            | 0.03                        | 0.31                                | 0.27                               | 0.49                                  |
| Riboflavin                     | B           | 0.69                        | 0.4         | 0.98                            | 2.42                        | 1.85                                | 0.68                               | 0.44                                  |
| Glycerol                       | B           | 2300                        | 393.3333333 | 696.6666667                     | 256.6666667                 | TR                                  | 240                                | TR                                    |

| Compound                  | Group A/B * | 20-64 year olds             |             |                                 |                             |                                     |                                    |                                       |
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|                           |             | I. Seasonings and beverages | II. Cereals | III. Potatoes, legumes and nuts | IV. Fish/shellfish and meat | V. Fats/oils and milk/milk products | VI. Sugar and confections/savories | VII. Fruits, vegetables, and seaweeds |
| Dimethylpolysiloxane      | A           | ND                          | ND          | 3                               | ND                          | ND                                  | ND                                 | ND                                    |
| Propylene glycol          | A           | 24                          | 14          | TR                              | ND                          | TR                                  | 22                                 | ND                                    |
| Adipic acid               | B           | ND                          | 1.026666667 | ND                              | ND                          | ND                                  | ND                                 | 2.776666667                           |
| Citric acid               | B           | 3650                        | ND          | 4466.666667                     | TR                          | 1080                                | 966.6666667                        | 783.3333333                           |
| Gluconic acid             | B           | 104.06                      | NQ          | 90.09533333                     | 52.34566667                 | NQ                                  | 91.32033333                        | 67.85966667                           |
| Succinic acid             | B           | 676.6666667                 | 23.33333333 | ND                              | 63.33333333                 | ND                                  | ND                                 | ND                                    |
| L-Tartaric acid           | B           | ND                          | 33.33333333 | ND                              | 140                         | 260                                 | 270                                | ND                                    |
| Lactic acid               | B           | 1080                        | 2566.666667 | 1286.666667                     | 4220                        | 2093.333333                         | 103.3333333                        | 406.6666667                           |
| Acetic acid               | B           | 1047.666667                 | 1009.666667 | 679                             | 352.6666667                 | 268.6666667                         | 114.3333333                        | 212.3333333                           |
| Fumaric acid              | B           | 13.33333333                 | ND          | 32                              | TR                          | 7.333333333                         | 29.66666667                        | 55.33333333                           |
| DL-Malic acid             | B           | 3560                        | 216.6666667 | 980                             | 243.3333333                 | ND                                  | 763.3333333                        | 1210                                  |
| Calcium                   | B           | 156.9                       | 159.4       | 525                             | 406.7                       | 1074                                | 348                                | 230.6                                 |
| Pyrophosphoric acid       | A           |                             |             |                                 |                             |                                     |                                    |                                       |
| Polyphosphoric acid       | A           |                             |             |                                 |                             |                                     |                                    |                                       |
| Metaphosphoric acid       | A           |                             |             |                                 |                             |                                     |                                    |                                       |
| Orthophosphoric acid      | A           | 740                         | 1400        | 1500                            | 3200                        | 1800                                | 500                                | 740                                   |
| Aluminum                  | B           | 9.233333333                 | 2.41        | 2.17                            | 3.9                         | 0.42                                | 25.76                              | 6.046666667                           |
| Iron                      | B           | 3.986666667                 | 3.746666667 | 11.87666667                     | 11.43333333                 | 0.643333333                         | 10.17666667                        | 6.113333333                           |
| Magnesium                 | B           | 176.8                       | 243.7       | 449.6                           | 270.4                       | 96.44                               | 136.5                              | 170.1                                 |
| Nordihydroguaiaretic acid | B           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Naringin                  | B           | NQ                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| Hesperidine               | B           | 10.04633333                 | ND          | ND                              | ND                          | ND                                  | ND                                 | 37.30366667                           |
| Kojic acid                | B           | ND                          | ND          | ND                              | ND                          | ND                                  | ND                                 | ND                                    |
| L-Asparagine              | B           | 21                          | 8           | 1400                            | ND                          | ND                                  | 39                                 | 303                                   |
| L-Glutamine               | B           | ND                          | 10          | 748                             | 42                          | 1.3                                 | 6                                  | 1150                                  |
| L-Arginine                | B           | 411                         | 32          | 811                             | 3.2                         | TR                                  | 40                                 | 324                                   |
| L-Cystine                 | B           | ND                          | ND          | 5                               | ND                          | ND                                  | ND                                 | 6                                     |
| L-Serine                  | B           | 406                         | 20          | 350                             | 10                          | 7                                   | 20                                 | 161                                   |
| L-Hydroxyproline          | B           | 3                           | ND          | ND                              | 14                          | 2                                   | 2.2                                | ND                                    |
| L-Tyrosine                | B           | 101                         | 23          | 393                             | 17                          | 16                                  | 10                                 | 59                                    |
| L-Proline                 | B           | 531                         | 14          | 264                             | 63                          | 24                                  | 35                                 | 188                                   |
| L-Leucine                 | B           | 576                         | 46          | 551                             | 403                         | 39                                  | 5                                  | 140                                   |

\* Group A/B: Food additives in Group A do not from naturally occur and those in Group B do.