|  |  |  |
| --- | --- | --- |
|  | **TSH (0.02-98.8 mIU/L)****(Method-1)** | **TSH (0.102-9.99 mIU/L)****(Method-2)** |
| **N** | **2.5th Centile****(90% CI)** | **97.5th Centile (90% CI)** | **N** | **2.5th Centile** **(90% CI)** | **97.5th Centile (90% CI)** |
| Outliers not removed | **8643** | 0.08 (0.06-0.09) | 12.85 (11.84-14.34) | **8068** | 0.23 (0.22-0.25) | 7.50 (7.30-7.72) |
| Outliers removed (Tukey’s method, natural-log TSH) | **8151** | **0.31****(0.30-0.33)** | 9.77(9.46-10.32) | **7883** | **0.35****(0.34-0.37)** | 7.54(7.37-7.74) |
| Outliers removed (Tukey’s method, non-transformed TSH) | **8052** | 0.06(0.05-0.08) | **6.04****(5.97-6.12)** | **7717** | 0.23(0.21-0.24) | **5.81****(5.75-5.90)** |

**Table I:** Reference intervals of TSH (mIU/L) for the total participants

|  |  |
| --- | --- |
|  | **Outlier removal (Tukey’s Method) performed in** |
| **TSH (Non-Transformed)** | **TSH (Natural log transformed)** |
| **N** | **2.5th Centile****(90% CI)** | **97.5th Centile** **(90% CI)** | **N** | **2.5th Centile****(90% CI)** | **97.5th Centile** **(90% CI)** |
| 1. **Gender**
 |
| * 1. Male
 | 1975 | 0.05(0.04-0.07) | **5.95****(5.75-6.11)** | 1977 | **0.30** **(0.28-0.33)** | 9.28(8.30-11.28) |
| * 1. Female
 | 6077 | 0.07(0.05-0.09) | **6.07****(5.98-6.14)** | 6174 | **0.31****(0.30-0.33)** | 9.81 (9.51-10.46) |
| 1. **Age Groups**
 |
| * 1. < 30 years
 | 1717 | 0.19(0.13-0.24) | **5.96****(5.65-6.13)** | 1741 | **0.38****(0.33-0.45)** | 8.33(7.45-9.13) |
| * 1. 30-40 years
 | 1673 | 0.10(0.06-0.17) | **6.14****(5.97-6.25)** | 1704 | **0.41****(0.37-0.45)** | 9.58(8.95-10.58) |
| * 1. 40-50 years
 | 1822 | 0.11(0.06-0.14) | **6.12****(5.95-6.29)** | 1869 | **0.40****(0.36-0.43)** | 10.16(9.32-10.89) |
| * 1. 50-60 years
 | 1379 | 0.05(0.03-0.08) | **6.03****(5.81-6.24)** | 1409 | **0.31****(0.28-0.34)** | 10.68(9.71-11.82) |
| * 1. ≥60 years
 | 1461 | 0.03(0.02-0.04) | **5.99****(5.74-6.20)** | 1428 | **0.22****(0.21-0.24)** | 11.38(9.74-12.79) |
| 1. **Ethnic Groups**
 |
| * 1. Indo-Aryan
 | 5370 | 0.08(0.06-0.10) | **6.11****(6.00-6.20)** | 5475 | **0.31****(0.30-0.33)** | 9.89(9.45-10.49) |
| * 1. Tibeto-Burman
 | 1091 | 0.04(0.03-0.05) | **5.94****(5.78-6.13)** | 1081 | **0.31****(0.28-0.35)** | 9.39(8.27-11.13) |
| * 1. Newar
 | 502 | 0.06(0.02-0.13) | **5.80****(5.50-5.95)** | 510 | **0.30****(0.26-0.40)** | 10.75(8.85-12.39) |
| * 1. Miscellaneous
 | 1089 | 0.06(0.04-0.11) | **6.02****(5.83-6.26)** | 1085 | **0.30****(0.24-0.35)** | 9.80(7.80-10.92) |

**Table II:** Reference intervals of TSH (mIU/L) for different subgroups of gender, age and ethnicity after removing outliers by Tukey’s method, “Method-1” (TSH: 0.02-98.8 mIU/L)

|  |  |
| --- | --- |
|  | **Outlier removal (Tukey’s Method) performed in** |
| **TSH (Non-Transformed)** | **TSH (Natural log transformed)** |
| **N** | **2.5th Centile** **(90% CI)** | **97.5th Centile****(90% CI)** | **N** | **2.5th Centile****(90% CI)** | **97.5th Centile** **(90% CI)** |
| 1. **Gender**
 |
| * 1. Male
 | 1886 | 0.21(0.19-0.24) | **5.64****(5.42-5.79)** | 1909 | **0.35****(0.33-0.38)** | 7.19(6.97-7.45) |
| * 1. Female
 | 5831 | 0.23(0.22-0.25) | **5.87****(5.78-5.95)** | 5974 | **0.36****(0.34-0.38)** | 7.70(7.47-7.91) |
| 1. **Age Groups**
 |
| * 1. < 30 years
 | 1676 | 0.32(0.28-0.36) | **5.65****(5.46-5.96)** | 1707 | **0.43****(0.37-0.48)** | 6.87(6.56-7.31) |
| * 1. 30-40 years
 | 1613 | 0.32(0.27-0.40) | **5.89****(5.75-6.00)** | 1662 | **0.44****(0.40-0.47)** | 7.41(7.01-7.79) |
| * 1. 40-50 years
 | 1755 | 0.30(0.23-0.36) | **5.87****(5.75-5.95)** | 1815 | **0.41****(0.39-0.45)** | 7.56(7.19-7.92) |
| * 1. 50-60 years
 | 1311 | 0.21(0.20-0.24) | **5.82****(5.65-5.98)** | 1350 | **0.35****(0.33-0.38)** | 8.11(7.68-8.39) |
| * 1. ≥60 years
 | 1362 | 0.17(0.15-0.19) | **5.75****(5.34-5.97)** | 1349 | **0.27****(0.26-0.30)** | 7.77(7.40-8.07) |
| 1. **Ethnic Groups**
 |
| * 1. Indo-Aryan
 | 5157 | 0.22(0.21-0.24) | **5.83****(5.71-5.94)** | 5288 | **0.36****(0.34-0.38)** | 7.68(7.45-7.93) |
| * 1. Tibeto-Burman
 | 1034 | 0.23(0.20-0.28) | **5.82****(5.47-5.96)** | 1051 | **0.34****(0.31-0.36)** | 7.62(6.80-7.87) |
| * 1. Newar
 | 480 | 0.26(0.23-0.35) | **5.65****(5.33-5.88)** | 493 | **0.33****(0.29-0.41)** | 7.93(6.63-8.52) |
| * 1. Miscellaneous
 | 1046 | 0.23(0.20-0.24) | **5.86****(5.74-6.01)** | 1051 | **0.33****(0.30-0.40)** | 6.78(6.47-7.25) |

**Table III:** Reference intervals of TSH (mIU/L) for different subgroups of gender, age and ethnicity after removing outliers by Tukey’s method, “Method-2” (TSH 0.102-9.99 mIU/L)

**Figure I:** Lower and upper limits of TSH (mIU/L) in male (blue) and female (red) study participants by Method-1 and Method-2

**Figure II:** Lower and upper limits of TSH (mIU/L) in study participants of different age-groups by method-1 (blue) and method-2 (red)

**Figure 3:** Lower and upper limits of TSH (mIU/L) in study participants of different ethnic-groups by method-1 (blue) and method-2 (red)