**Table S2.** The essential characteristics of RCTs included in meta-analysis

| study | Country | Sample size (int./con.) | Comparative groups | LT4 | Age (years) | | Female (%) | Duration (months) |
|---|---|---|---|---|---|---|---|---|
| | | | | | Int. | Con. | | |
| De Farias 2015 [24] | Brazil | 55 (28/27) | SeMet (200 μg/D) vs. placebo | Part | Median 48 | Median 44 | 91 | 3 |
| Eskes 2014 [25] | Netherlands | 61 (30/31) | NaSe (200 μg/D) vs. placebo | None | Median 43.5 (20-68) | Median 45.0 (21-74) | 100 | 6 |
| Krysiak 2012 A [26] | Poland | 73 (37/36) | SeMet (200 μg/D) vs. placebo | None | Mean 41 ± 3 | Mean 40 ± 4 | 100 | 6 |
| Krysiak 2012 B [26] | Poland | 76 (38/38) | SeMet (200 μg/D) + LT4 vs. LT4 | All | Mean 39 ± 4 | Mean 42 ± 4 | 100 | 6 |
| Krysiak 2011 A [27] | Poland | 82 (42/40) | SeMet (200 μg/D) vs. placebo | None | Mean 40 ± 4 | Mean 38 ± 3 | 100 | 6 |
| Krysiak 2011 B [27] | Poland | 83 (42/41) | SeMet (200 μg/D) + LT4 vs. LT4 | All | Mean 39 ± 4 | Mean 37 ± 3 | 100 | 6 |
| Nacamulli 2010 [28] | Italy | 76 (46/30) | NaSe (80 μg/D) vs. no treatment | None | Median 43 (17-75) | Median 43 (27-63) | 86 | 12 |
| Karanikas 2008 [29] | Austria | 36 (18/18) | NaSe (200 μg/D) + LT4 vs. placebo + LT4 | All | Mean 47 (19-85) | | 100 | 3 |
| Mazokopakis 2007 [30] | Greece | 80 (40/40) | SeMet (200 μg/D) vs. Se6 + no treatment6 | Part | Median 37 (24-52) | | 100 | 12 |
| Turker 2006 [31] | Turkey | 88 (48/40) | SeMet (200 μg/day) + LT4 vs. placebo + LT4 | All | Mean 40.8 ± 12.5 | Mean 39.2 ± 14.4 | 100 | 3 |
| Duntas 2003 [32] | Greece | 65 (34/31) | SeMet (200 μg/D) + LT4 vs. placebo + LT4 | All | Mean 47.8 (22-61) | | 86 | 6 |
| Gartner 2002 [33] | Germany | 70 (36/34) | NaSe (200 μg/day) + LT4 vs. placebo + LT4 | All | Mean 41.6 ± 12.1 | Mean 43.0 ± 12.1 | 100 | 3 |
| Deng 2013 [34] | China | 94 (48/46) | Se-yeast (200 μg/D) vs. placebo | None | Mean 39 ± 12 | Mean 40 ± 12 | 86 | 6 |
| Zhu 2013 [35] | China | 96 (50/46) | Se-yeast (200 μg/D) + methimazole vs. methimazole | None | Mean 42.1 ± 13.6 | Mean 43.4 ± 12.9 | 83 | 12 |
| Zhang 2013 [36] | China | 66 (46/20) | Se-yeast (200 μg/D) + LT4 vs. LT4 | All | Mean 36.3 ± 11.1 | Mean 39.3 ± 13.1 | 91 | 3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Yan 2008 [37] | China | 114 (59/55) | NaSe (200 μg/day) + LT4 vs. LT4 | All | Mean 43.8 ± 12.7 | Mean 40.3 ± 11.2 | 88 | 3 |
| Shou 2013 [38] | China | 96 (46/50) | NaSe (200 μg/day) vs. no treatment | Part | Mean 40.3 ± 12.6 | | 83 | 6 |
| Zhou 2016 [39] | China | 80 (40/40) | Se-yeast (200 μg/D) + methimazole vs. placebo + methimazole | None | Mean 36.25 ± 18.27 | | 69 | 6 |
| Liu 2019 [40] | China | 102 (51/51) | Se-yeast (100 μg/D) + methimazole vs. methimazole | None | Mean 38.64 ± 6.71 | Mean 37.86 ± 6.01 | 77 | 12 |
| Wang 2020 [41] | China | 105 (53/52) | Se-yeast (200 μg/D) vs. placebo | Part | Mean 36.36 ± 9.72 | Mean 35.49 ± 9.07 | 57 | 6 |
| Pirola 2016 [42] | Italy | 192 (96/96) | SeMet (83 μg/D) vs. no treatment | None | Mean 32.2 ± 7.0 | Mean 33.1 ± 6.4 | 63 | 4 |
| Huang 2014 [43] | China | 90 (45/45) | Se-yeast (200 μg/D) vs. placebo | None | Mean 34.8 ± 6.3 | Mean 34.9 ± 6.1 | 68 | 6 |
| Kachouei 2018 [44] | Iran | 70 (35/35) | NaSe (200 μg/D) + LT4 vs. placebo + LT4 | All | Mean 45.3 ± 10.8 | Mean 45.6 ± 12.1 | 63 | 3 |
| Karimi 2019 [45] | Iran | 66 (38/28) | NaSe (200 μg/D) vs. placebo | Part | Mean 38.18 ± 13.29 | Mean 39.32 ± 12.28 | 76 | 3 |
| Wang 2018 A [46] | China | 313 (153/160) | Se-yeast (200 μg/D) vs. placebo | None | Mean 41.4 ± 13.1 | | 100 | 6 |
| Wang 2018 B [46] | China | 51 (28/23) | Se-yeast (200 μg/D) vs. placebo | Part | Mean 41.4 ± 13.1 | | 100 | 6 |

Abbreviations: int./con., intervention group/control group; Semet, selenomethionine; NaSe, sodium selenite.