Primary studies

Study ID	Method	Patient characteristics	Outcome	Results primary outcome	Results secondary and other outcome(s)	Critical appraisal of study quality
Karapanou (2012)	• Case control and cross-sectional (before and after) study • Funding/COI: approved by ethical committee of Evangelismos Hospital. Authors declare that they have no COI • Setting: single university centre, Greece • Sample size: 18 men + 42 women • Duration: Dec 2009-Apr 2011	• Eligibility criteria: ○ Cases: a) Papillary thyroid cancer on histological examination b) Total or near total thyroidectomy at least 2- 6 months before c) Absence of concomitant malignancy d) No prior 131I administration e) Absence of severe comorbidities Age: 18 - 73 ○ Controls: age and sex-matched subjects. Further comparability unclear.	Differences in HRQoL assessment associated with demographic (age, gender) and disease-dependent (TNM stage, 131I dosage, serum Tg levels) variables Differences in HRQoL assessment of thyroid cancerpatients before and after 131I administration Instrument: SF-36 health survey validated for Greek population	• No statistically significant difference in HRQoL associated with age, gender, serum Tg levels or 131I dosage. • No significant difference between patients receiving lower (2220-3700MBq) and higher (3700-7400MBq) dosage. • HRQoL significantly improved in all domains six months post 131I	• Compared to a general population sample, HRQoL scores before 131I administration were significantly lower in all domains. • Six months post 131I administration patients' HRQoL scores were significantly lower in the domains: physical functioning (P=0.002), physical role (P=0.001), social functioning (P=0.003) and emotional role limitations (P=0.004)	• Level of evidence: B
Singer (2012)	• Single center cross-sectional study • Funding/COI: Authors declare that they have no COI + no grant from any funding agency in the public, commercial, or not-for-profit sector • Setting: single centre, inpatient rehabilitation clinic, Germany • Sample size: 121(81.7%, nonparticipation	• Eligibility criteria: (1) Group 1: patients with thyroid cancer; (2) Group 2: random sample from general population • Patient characteristics: (1) Group 1: females 81%, <50 years 59%, papillary 71%, follicular 20%; (2) Group 2: females 56%	• Instrument: EORTC QLQ-C30	Patient group: • Emotional functioning (mean value): ○ men 60.5 vs. women 46.7, p=0.03 ○ papillary 47.2 vs. follicular 51.0 vs. medullary 76.4 vs. 83.3 • Physical functioning (mean value): ○ T4 60.0 vs. T1-3 75.0, p=0.02 • Global health status (mean value): ○ T4 39.4 vs. T1-3 54, p=0.03 • Cognitive functioning: ○ M+ 41.7 vs. M0 65.9, p=0.05	Representative community sample The age distribution was similar in both groups • Women reported significantly worse functioning and more symptoms than men in all domains except diarrhea and financial difficulties (all $p < 0.05$) • With increasing age, quality of life decreases linearly	• Level of evidence: B

	mainly because of languageproblems and age > 80 years) • Duration: 2006-2010			• No other differences between subgroups • Mean scores in all other domains appeared to be similar between the different histology	Univariate analysis: Symptoms in all domains: Patients > general population → p < 0.0. Large differences in (points) in the domains: fatigue (39), role functioning (33), insomnia (33), emotional functioning (29), and financial difficulties (28). Multivariate analysis: Symptoms in all but the domains constipation and diarrhea: Patients > general population Strongest effects in: insomnia (p < 0.001), fatigue (p= <0.001), role functioning (p= <0.001). Significant interactions between age and group in: social functioning, role functioning, fatigue, nausea/vomiting, financial difficulties. Interactions between gender and group in nausea and vomiting.	

Systematic reviews

I Study ID	II Method	III Patient characteristics	IV Intervention(s)	V Results primary outcome	VI Results secondary and other outcomes	VII Critical appraisal of review quality
• Reference	• Design • Sources of funding • Search date • Searched databases • Included study designs • Number of included studies	• Eligibility criteria • A priori patient characteristics	• Intervention(s) • Comparator(s)	• Effect size primary outcome(s)	• Effect size • secondary outcome(s) • Effect size • all other outcomes	• Level of evidence • Results critical appraisal
• Husson et al, 2011	• Systematic Review • Sources of funding unknown • Search date: 7 febr. 2011. • Year of publication: 1997-2010 • Pubmed • 27 studies included: prospective, cross-sectional, observational, intervention studies.	• Thyroid cancer survivors • Exclusion if: terminally ill (life expectancy < 6 months), younger than 18 years of age, other thyroid diseases, other cancers, genetic predisposition, no health related quality of life outcome • HRQoL primary outcome in all studies. -8 on the impact of a specific treatment on HRQoL -11 studies on the impact of follow-up procedures on HRQoL (3 of these also focused on some aspects) -11 studies evaluated HRQoL among (long-term) cancer survivors. The main findings are summarized in Table 2.	• Surgery, radioiodine remnant ablation therapy, thyroid hormone therapy • Healty population	• mean score: 8,8 (range 2-12), on 0-12 scale • Contradictory results for comparisons with healthy population • surgery leads to worse mental and physical HRQoL compared with the general population; there is a trend towards recovery in time. • levothyroxine treatment results in similar or slightly impaired HRQoL compared with the general population. • (long-term) thyroid cancer survivors score similar or worse on HRQoL scales compared with the general population.	• RA affects some, mainly physical, domains of HRQoL; rhTSH preserves HRQoL better than withdrawing levothyroxine treatment • thyroid hormone withdrawal causes significant reductions in physical and mental HRQoL. After resumption of the levothyroxine treatment, HRQoL levels will return to prewithdrawal levels. • the use of rhTSH instead of thyroid hormone withdrawal prevents HRQoL deterioration accompanied by the withdrawal. • Thyroid cancer survivors report some specific long-lasting problems. \	• C

• Yoo et al, 2009	• Systematic Review • Sources of funding unknown • Search date: week 5 and 6, 2008. • Year of publication: 1996-2008 • Pubmed and Embase • 2 cohort, 1 retrospective, 1 RCT • 4 studies included	• Patients with papillary or follicular thyroid cancer • Total or near-total thyroidectomy • Exclusion if known metastatic disease • Baseline qol taken post cancer diagnosis or post surgery and before initiating a protocol for tsh elevation.	• RA preparation using rhTSH • Standard withdrawal of thyroid hormone therapy • No comparison with healthy population • Instruments: Billewicz scale + SF-36.	• Serum TSH levels, results of post-therapy scans, iodine biokinetics in remnants, serum Tg, urinary iodine excretion • The use of rhTSH for RA preparation is not different from thyroid hormone withdrawal	• qol worse in hypo group compared with baseline values or rhtsh group. • Pacini: hypogroup worse on 6 of the 14 signs and symptoms of hypothyroidism ($p < 0.0001$): cold intolerance (50% vs. 21%), weight gain (60% vs. 21%), constipation (43% vs. 3%), slow movements (50% vs. 12%), cold skin (47% vs. 12%), and peri-orbital puffiness (50% vs. 0%). • Schroeder et al.: all signs and symptoms ignificantly worse in hypo group ($p < 0.001$) + SF-36 8 health-related domains worse in hypo group ($p < 0.001$) • Ladenson (1997): all signs and symptoms significantly worse in hypo group ($p < 0.001$) + Profile of Mood States (poms) on all 6 states worse in hypo group ($p < 0.001$) • Ladenson (2002) 5 of 6 states on the poms and physical composite of the SF-36 significantly worse in hypo group	• B