

Grading of the evidence in European guidelines for the diagnosis and treatment for insomnia.

There are 15 published meta-analyses on the efficacy of CBT-I (Table 6). These comprise meta-analyses of CBT-I for 'primary' insomnia as well as meta-analyses of CBT-I for co-morbid insomnia. In the latter, it was shown that CBT-I has a positive impact on both insomnia complaints and co-morbid symptoms.

Table 6. Meta-analyses on the efficacy of CBT-I

Author (year)	Population	Number of studies/number of patients	Intervention	Study endpoints	Effects on study endpoints
Morin <i>et al.</i> (1994)	Insomnia	59/2102	CBT-I and single components	SOL, WASO, NOA, TST	a. Good effects of CBT-I on all parameters b. Good follow-up results
Murtagh and Greenwood (1995)	Insomnia	66/2007	CBT-I and single components	SOL, NOA, TST, SQ	a. Good effects of CBT-I on all parameters b. Good follow-up results
Pallesen <i>et al.</i> (1998)	Insomnia, age >50 years	13/388	CBT-I and single components	SOL, NOA, WASO, TST	a. Good effects of CBT-I on all parameters b. Good follow-up results
Montgomery and Dennis (2004)	Primary insomnia, age >60 years	7/322	CBT-I, bright light and physical exercise	SOL, TST, SE, WASO	a. Good effects of CBT-I on sleep maintenance b. Almost no effects of bright light and

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					physical exercise
Irwin <i>et al.</i> (2006)	Insomnia, age >55 years versus younger patients	23/NA	CBT-I and single components	SQ, SOL, TST, SE, WASO	Medium to strong effects in older patients
Belleville <i>et al.</i> (2011)	Insomnia with/without co-morbid anxiety	50/2690	CBT-I	Anxiety scales	Moderate effects on anxiety
Okajima <i>et al.</i> (2011)	Primary insomnia	14/927	CBT-I	SOL, WASO, EMA, SE, PSG, ACT	a. Good effects of CBT-I on all parameters b. Good follow-up results
Miller <i>et al.</i> (2014)	Primary insomnia	4/192	Sleep restriction therapy	SOL, WASO, TST, NOA, SE, SQ	Sleep restriction alone is effective
Koffel <i>et al.</i> (2015)	Insomnia	8/659	Group CBT-I	SOL, WASO, SE, SQ, TST, pain, depression	Group CBT-I is effective
Trauer <i>et al.</i> (2015)	Chronic insomnia	20/1162	CBT-I	SOL, WASO, TST, SE	Clinically relevant efficacy without undesired side-effects

Author (year)	Population	Number of studies/number of patients	Intervention	Study endpoints	Effects on study endpoints
Geiger-Brown <i>et al.</i> (2015)	Co-morbid insomnia (somatic/mental)	23/1379	CBT-I	SOL, WASO, TST, SE, ISI, PSQI	Good efficacy; long-term effects at 18 months
Wu <i>et al.</i> (2015a)	Co-morbid insomnia (somatic/mental)	37/2189	CBT-I	SOL, WASO, SQ, TST, remission, co-morbid symptoms	Good efficacy; smaller effects on co-morbid symptoms; better effects for mental outcomes
Ho <i>et al.</i> (2016)	Insomnia + PTSD	11/593	CBT-I	SOL, WASO, SE, TST, PTSD symptoms	Good sleep effects, good effects on PTSD symptoms
Johnson <i>et al.</i> (2016)	Insomnia + cancer	8/752	CBT-I	SE, WASO, ISI, cancer symptoms	Good sleep effects, good effects on cancer symptoms
Tang <i>et al.</i> (2015)	Insomnia + pain	11/1066	CBT-I	SQ, fatigue, pain	Good sleep effects, good effects on co-morbid symptoms

- ACT, actigraphy; CBT-I, cognitive behavioural therapy for insomnia; EMA, early morning awakening; ISI, insomnia severity index; NOA, number of awakenings; PSG, polysomnography; PSQI, Pittsburgh Sleep Quality Index; PTSD, posttraumatic stress disorder; SE, sleep efficiency; SOL, sleep-onset latency; SQ, sleep quality; TST, total sleep time; WASO, wake time after sleep onset.

insomnia (strong recommendation – low-quality evidence; Tables [14](#) and [15](#)).

Table 15. Recommendations

Treatment

In the presence of co-morbidities, clinical judgement should decide whether insomnia or the co-morbid condition is treated first, or whether both are treated at the same time. *CBT-I*

CBT-I is recommended as first-line treatment for chronic insomnia in adults of any age (strong recommendation, high-quality evidence).