

Bewältigung Tinnitus in der Schweiz – (un)befriedigend?

Antje Welge-Lüssen
HNO Klinik, Universitätsspital Basel

Universitätsspital Basel

Prävalenz

Hearing Research 337 (2016) 70–79

Contents lists available at ScienceDirect

Hearing Research

journal homepage: www.elsevier.com/locate/heares

A systematic review of the reporting of tinnitus prevalence and severity

Abby McCormack [a, *], Mark Edmondson-Jones [b], Sarah Somerset [c], Deborah Hall [c]

Table 4
Number of studies of tinnitus prevalence and severity by type of question.

Tinnitus prevalence	No. of studies	Study reference
Tinnitus lasting for more than 5 min at a time	12/35 = 34.3%	1, 2, 4, 5, 8, 10, 12, 14, 15, 16, 17, 20
Do you have tinnitus?	5/35 = 14.3%	9, 13, 27, 38, 39
Do you have permanent tinnitus all the time?	1/35 = 2.9%	11
Do you have recurrent tinnitus (once a month or more)	1/35 = 2.9%	3
Are you bothered by ringing in the ears?	1/35 = 2.9%	(6 & 7)[a]
Within the last year have you experienced tinnitus?	9/35 = 25.7%	19, 21, 22, 23, 24, 25, 30, (34, 35 & 36)[a], 37
Have you experienced tinnitus	1/35 = 2.9%	18
Tinnitus for the past 3 months	2/35 = 5.7%	(31 & 33)[a], 32
Not reported	2/35 = 5.7%	26, 29
Tinnitus severity		
Sleeping/concentrating	3/35 = 10.3%	2, 19, (34, 35 & 36)[a]
Bothered/annoyed/worried	8/35 = 22.9%	(6 & 7)[a], 12, 15, 16, 21, 24, 25, 28
Ability to lead a normal life	2/35 = 5.7%	9, 20

[a] Study reference 6 and 7 are from the Nord Trondelag Hearing Loss Study, Sweden; 31 and 33 are from the National Health Interview Survey, USA; 34, 35 and 36 are from the BeaverDam study; USA.

Universitätsspital Basel

Prävalenz

Table 3
Overall prevalence figures for each study.

Study reference	Age	Sample size (n =)	Current tinnitus			Bothersome tinnitus		
			Female (%)	Male (%)	Overall (%)	Female (%)	Male (%)	Overall (%)
1	55–65	1147	–	–	10.0 (n = 224)	–	–	–
2	53–75	3387	–	17 (n = 576)	17 (n = NR)	–	3 (n = 101)	3 (n = 101)
3	25–65	F = 913; M = 763; All = 1676	15 (n = 137)	16 (n = 122)	15 (n = 259)	–	–	–
4	54–66	F = 467; M = 383; All = 850	–	–	29.2 (n = 248)	–	–	–
5	18–80	2170	–	–	14.5	–	–	–
6	20–101	F = 26,574; M = 23,374; All = 49,948	–	–	–	6.9 (n = 1887)	11.7 (n = 2812)	9.3 (n = NR)
7	20–101	F = 26,574; M = 23,374; All = 49,948	12.1 (n = 3215)	16.4 (n = 3833)	14.3 (n = NR)	–	–	–
8	≥30	–	21 (n = NR)	23 (n = NR)	22 (n = NR)	–	–	–
9	20–79	F = 1243; M = 1135; All = 2378	12.1 (n = 150)	16.5 (n = 187)	14.2 (n = 337)	18 (n = 27)	16.6 (n = 31)	17.2 (n = 58)
10	20–80	F = 330; M = 260; All = 590	8.9 (N = 29)	17.6 (N = 46)	13.2 (N = 78)	–	–	–
11	18–20	558	–	–	9 (n = 52)	–	–	–
12	19–70	–	23.7 (n = NR)	32.5 (n = NR)	27.8 (n = NR)	–	–	30.7 (n = 943)
13	18–84	12,166	–	–	16.6 (n = NR)	–	–	–
14	31–99	–	–	–	15.2 (n = NR)	–	–	–
15	40–69	–	14.1 (n = NR)	18.4 (n = NR)	16.2 (n = NR)	3.5 (n = NR)	4.1 (n = NR)	3.8 (n = NR)
16	55–89	F = 1156; M = 859; All = 2015	28.6 (n = 330)	32.2 (n = 272)	30.3 (n = 602)	19.1 (n = 221)	10.3 (n = 88)	16.2 (n = 326)
17	50–93		31.4 (n = NR)	19.6 (n = NR)	30.7 (n = NR)	–	–	–
18	41–82	2193	336 (n = NR)	407 (n = NR)	33.8 (743)	–	–	–
19	≥65	F = 736; M = 584; All = 1320	19 (n = 140)	18 (n = 105)	18.6 (n = 245)	3.4 (n = 25)	2.6 (n = 15)	3.0 (n = 40)
20	45–79	F = 7973; M = 6450; All = 14,423	10.7 (n = 857)	13.2 (n = 853)	11.9 (n = 1710)	20.2 (n = 173)	21.9 (n = 187)	21.1
21	32	F = 476; M = 494; All = 970	5.5 (n = 26)	8.1 (n = 40)	6.8 (n = 66)	8.7 (n = 18)	8.7 (n = 20)	8.7 (n = 38)
22	19–80	–	23 (n = NR)	16.9 (n = NR)	20.5 (n = NR)	–	–	–
23	≥19	–	21.7 (n = NR)	17.7 (n = NR)	19.7 (n = NR)	30.2 (n = NR)	28.3 (n = NR)	29.2 (n = NR)
24	≥20	10,061	22.8 (n = 1300)	19.5 (n = 849)	21.4 (2149)	7.7 (n = 441)	6.8 (n = 295)	7.3 (n = 736)
25	≥20	19,290	–	–	20.7 (n = 4234)	–	–	30.9 (n = 1434)
26	≥60	498	–	–	42.7 (n = 213)	–	–	–
27	≥18	1960	–	–	22 (n = 430)	–	–	–
28	≥20	59,343	–	–	–	–	–	9.7
29	≥18	–	–	–	12.2 (n = NR)			
30	≥18	–			6.1 (n = NR)	–	–	–
31	≥18	–	–	–	5.1 (n = NR)	–	–	–
32	≥20	99,435	–	–	5.4	–	–	–
33	≥18	–	–	–	6.2 (n = NR)	–	–	–
34	48–92	F = 2155; M = 1582; All = 3737				7.8 (n = 168)	8.8 (n = 139)	8.2 (n = 306)
35	53–97	F 1606 M 1143 Missing 31 All 2800	–	–	24.6 (675)	–	–	9.4 (n = 258)
36	21–84	F = 1784; M = 1483; All = 3267				9.4 (n = NR)	11.9 (n = NR)	10.6 (n = NR)
37	≥30	F = 7387; M = 6791; All = 14,178	24.6 (n = NR)	26.1 (n = NR)	25.4 (n = NR)	–	–	–
38	≥20	–	–	–	10.1 (n = NR)	–	–	–
39	≥65	F = 750; M = 552	14.7 (n = 110)	13.4 (n = 74)	14.1 (n = 184)	–	–	–

5.4 - 42.7 %

3 - 30.9 %

Universitätsspital Basel

Prävalenz

Cross-culturelle Standardisierung nötig !

Table 1
Standardized survey instructions, questions and response options in the source language (English).

		Question-specific instruction to the interviewer	*Question*	*Response options*
General instruction to participants	"Now we ask you a few questions on hearing problems and on the sensation of noise in head or in one or both ears, which is a symptom that medical doctors call "tinnitus""			
Presence of tinnitus	To all adults (i.e., aged ≥ 18 years)		Over the past year, have you had noises (such as ringing or buzzing) in your head or in one or both ears that lasts for more than five minutes at a time?	• Yes, most or all of time •Yes, a lot of the time •Yes, some of the time •No, not in the past year •No, never •Do not know/Prefer not to answer
Tinnitus severity	To participants with current tinnitus		Over the past year, how much do these noises in your head or ears worry, annoy or upset you when they are at their worst?	•Severely •Moderately •Slightly •Not at all •Do not know/Prefer not to answer
Use of healthcare resources for tinnitus	To participants with current tinnitus		Over the past year, have you seen your family doctor, or seen a healthcare professional at a clinic or hospital about problems with noises in your head or ears?	•Yes, 5 or more visits •Yes, from 2 to 4 visits •Yes, just one visit •Not at all •Do not know/Prefer not to answer
Presence of hearing difficulty	To all adults (i.e., aged ≥ 18 years)		Do you currently have any other difficulty with your hearing, such as listening to speech in a noisy situation?	•Yes, cannot hear at all •Yes, severe difficulty •Yes, moderate difficulty •Yes, slight difficulty •No difficulty •Do not know/Prefer not to answer

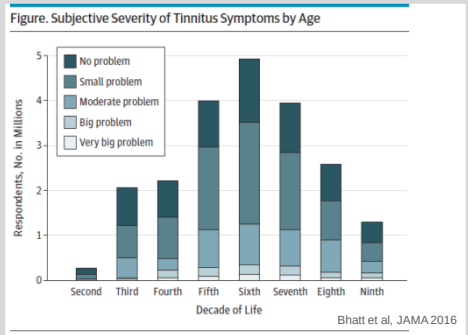
Hearing Res. 2019

Prävalenz von ~15% in Europa, 9% Irland – 29% Bulgarien (Biswas et al, 2020)

Universitätsspital Basel

Tinnitus

…tritt mit zunehmendem Alter häufiger auf

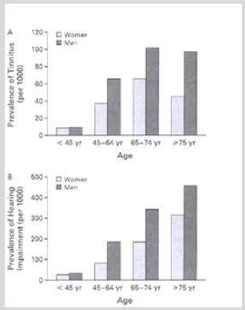


Bhatt et al, JAMA 2016

Universitätsspital Basel

Tinnitus

oft assoziiert mit Hörminderung



Lockwood et al, NEJM, 2002

Beaver Dam Offspring Study, n = 3267

Risk factor[1]	*Odds ratio*	*95% CI*
Auditory function/injuries		
Hearing impairment	3.20	(2.33, 4.38)
History of ear infection		
Men	1.75	(1.20, 2.57)
Women	0.90	(0.62, 1.31)
History of head injury	1.84	(1.40, 2.40)
Occupational noise exposure (past year)	1.90	(1.38, 2.63)
Target shooting (ever)	1.56	(1.09, 2.24)
Symptoms of anxiety/depression		
CES-D score ≥16	1.82	(1.33, 2.51)
CVD and its risk factors		
Alcohol consumption (any in past year)		
Men	1.33	(0.70, 2.51)
Women	0.56	(0.35, 0.90)
History of arthritis	1.46	(1.08, 1.96)
NSAID medications	1.33	(1.02, 1.75)

Nondahl et al, 2011

Universitätsspital Basel

Untersuchung



Guideline

FOUNDATION

Clinical Practice Guideline: Tinnitus

David E. Tunkel, MD[1], Carol A. Bauer, MD[2], Gordon H. Sun, MD, MS[3], Richard M. Rosenfeld, MD, MPH[4], Sujana S. Chandrasekhar, MD[5], Eugene R. Cunningham Jr, MS[6], Sanford M. Archer, MD[7], Brian W. Blakley, MD, PhD[8], John M. Carter, MD[9], Evelyn C. Granieri, MD, MPH, MSEd[10], James A. Henry, PhD[11], Deena Hollingsworth, RN, MSN, FNP[12], Fawad A. Khan, MD[13], Scott Mitchell, JD, CPA[14], Ashkan Monfared, MD[15], Craig W. Newman, PhD[16], Folashade S. Omole, MD[17], C. Douglas Phillips, MD[18], Shannon K. Robinson, MD[19], Malcolm B. Taw, MD[20], Richard S. Tyler, PhD[21], Rick [illegible][22]

A multidisciplinary European guideline for tinnitus: diagnostics, assessment, and treatment

H.-P. Zenner[1] · W. Delb[2] · R. Kröner-Herwig[3] · B. Jäger[4] · I. Peroz[5] · G. Hesse[6] · B. Mazurek[7] · G. Goebel[8] · C. Gerloff[9] · R. Trollmann[10] · E. Biesinger[11] · H. Seidler[12] · B. Langguth[13]

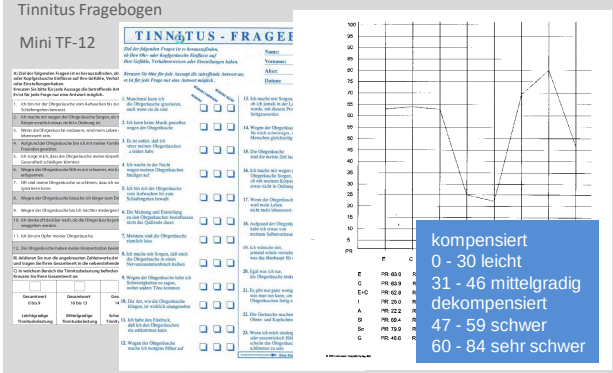
Zur interdisziplinären S3-Leitlinie für die Therapie des chronisch-idiopathischen Tinnitus

Universitätsspital Basel

Fragebögen

Tinnitus Fragebogen

Mini TF-12



Universitätsspital Basel

Bildgebung

«smarter medicine»:
die «Top-5-Liste» der SGORL

Trägerschaft «smarter medicine – Choosing Wisely Switzerland»

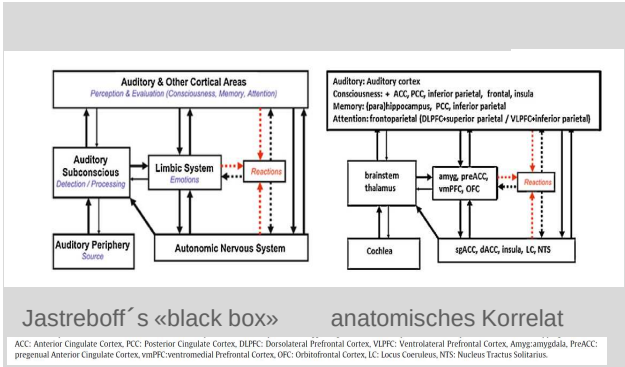
SCHWEIZERISCHE ÄRZTEZEITUNG – BULLETIN DES MÉDECINS SUISSES – BOLLETTINO DEI MEDICI SVIZZERI 2019;100(26):880–881

5. Führen Sie zur Abklärung eines nicht pulsatilen Tinnitus bei Patienten mit symmetrischem Gehör, unauffälligem Ohrstatus und ansonsten unauffälliger Anamnese keine Bildgebung durch.
Der Nutzen der Bildgebung zur Abklärung des idiopathischen Tinnitus ist nicht erwiesen. Die Röntgendiagnostik ändert das Management des Tinnitus kaum.

Clinicians should not obtain imaging studies of the head and neck in patients with tinnitus, specifically to evaluate the tinnitus, unless they have 1 or more of the following: tinnitus that localizes to 1 ear; pulsatile tinnitus, focal neurological abnormalities, or asymmetric hearing loss.	Strong recommendation against

Universitätsspital Basel

Neurophysiologisches Modell



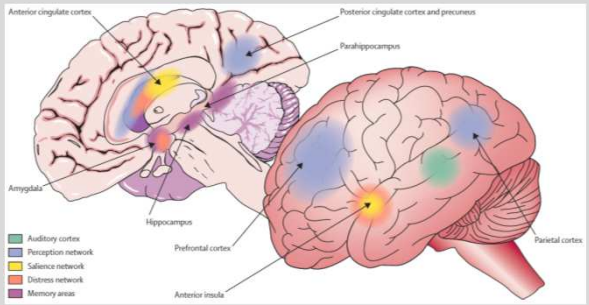
Jastreboff´s «black box» anatomisches Korrelat

ACC: Anterior Cingulate Cortex, PCC: Posterior Cingulate Cortex, DLPFC: Dorsolateral Prefrontal Cortex, VLPFC: Ventrolateral Prefrontal Cortex, Amyg:amygdala, PreACC: pregenual Anterior Cingulate Cortex, vmPFC:ventromedial Prefrontal Cortex, OFC: Orbitofrontal Cortex, LC: Locus Coeruleus, NTS: Nucleus Tractus Solitarius.

De Ridder et al, 2014

Universitätsspital Basel

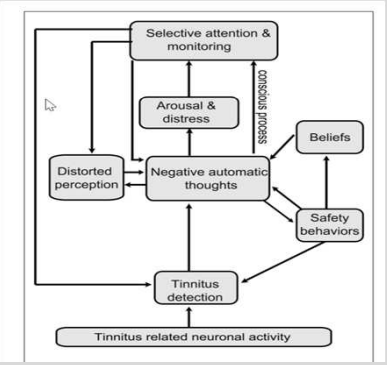
Zentral beteiligte Regionen



Langguth et al, 2013

Universitätsspital Basel

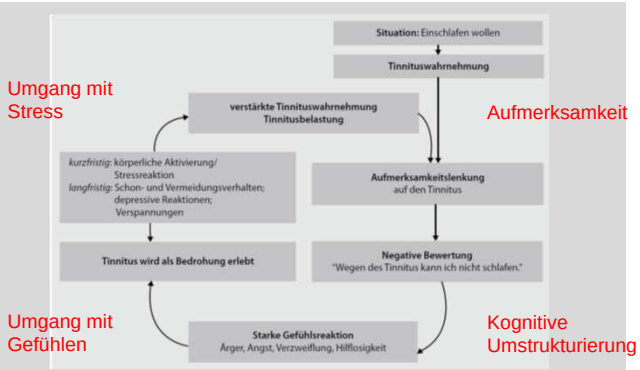
Cognitives Modell



McKenna et al, 2014

Universitätsspital Basel

Teufelskreis

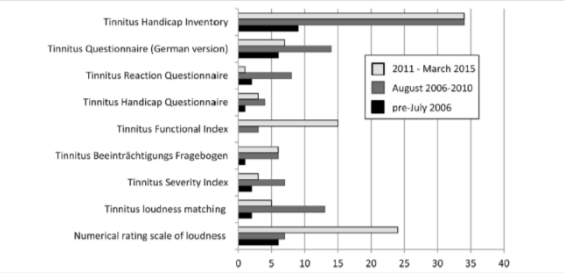


Weise, Psychotherapeut 2011

Universitätsspital Basel

Therapie

Outcome measurement schwierig



Hall et al, 2016

Universitätsspital Basel

Therapie ?



Tab. 4 Evidenztabelle zu Musiktherapie 2002–2014

Ungefilterte Musik	Evidenzstärke	Empfehlung	Bemerkungen
Argstatter et al. (2010) [7]	Nein	Nein	Keine Kontrolle
Hesse und Schaaf (2007) [29]	Schwach	Offen	Zu kleine Gruppen
Argstatter et al. [5, 6, 8, 9] Grapp et al. (2013) [23]	Schwach	Offen	Je nach Publikation z. B. Effektstärke d = 1,73 (Cohen's), kontrolliert, aber zu kleine Gruppen, statistisch unzureichend, Kontrollgruppen zu klein
Argstatter et al. (2014) [10]	Schwach	Offen	
Gefilterte Musik	Evidenz-stärke	Empfeh-lung	
Cramer 2002 [17]	Keine	Kleine	
Nickel et al. (2005) [54]	Schwach	Offen	
Okamoto et al. (2010) [57]	Schwach	Offen	
Teismann et al. (2011) [69]	Keine	Keine	

Pubmed-Recherche „tinnitus AND music". Nur chronischer Tinnitus

Zenner et al, 2015

Sound therapy

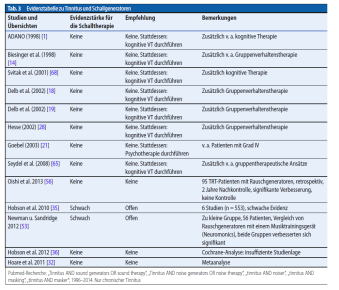
No recommendation

There is evidence for safety but little high-level evidence for the effectiveness of sound therapy. Recommendation is based on RCTs and a systematic review.

Cima et al, 2019

Universitätsspital Basel

Therapie ?



Tab. 3 Evidenztabelle zu Tinnitus und Schalltherapien

Studien und Übersichten	Evidenzstärke für die Schalltherapie	Empfehlung	Bemerkungen
ADANO (1998) [1]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich v. a. kognitive Therapie
Biesinger et al. (1998) [14]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich v. a. Gruppenverhaltenstherapie
Svitak et al. (2001) [68]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich kognitive Therapie
Delb et al. (2002) [18]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich Gruppenverhaltenstherapie
Delb et al. (2002) [19]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich Gruppenverhaltenstherapie
Hesse (2002) [28]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich Gruppenverhaltenstherapie
Goebel (2003) [21]	Keine	Keine. Stattdessen: Psychotherapie durchführen	v. a. Patienten mit Grad IV
Seydel et al. (2008) [65]	Keine	Keine. Stattdessen: kognitive VT durchführen	Zusätzlich v. a. gruppentherapeutische Ansätze
Dinh et al. 2013 [54]	Keine	Keine	95 TRT-Patienten mit Rauschgeneratoren, retrospektiv, 2 Jahre Nachkontrolle, signifikante Verbesserung, keine Kontrolle
Hobson et al. 2010 [35]	Schwach	Offen	6 Studien (n = 553), schwache Evidenz
Newman u. Sandridge 2012 [53]	Schwach	Offen	Zu kleine Gruppe, 56 Patienten, Vergleich von Rauschgeneratoren mit einem Musiktrainingsgerät (Neuromonics), beide Gruppen verbesserten sich signifikant
Hobson et al. 2012 [36]	Keine	Keine	Cochrane-Analyse: insuffiziente Studienlage
Hoare et al. 2011 [32]	Keine	Keine	Metaanalyse

Pubmed-Recherche „tinnitus AND sound generators OR sound therapy", „tinnitus AND noise generators OR noise therapy", „tinnitus AND maskers", „tinnitus AND masking", „tinnitus AND masker", 1996–2014. Nur chronischer Tinnitus

Weak recommendation for

Hearing aids are recommended for the management of hearing loss and should be considered as an option for patients with tinnitus and hearing loss. Recommendation is based on evidence of effectiveness and safety in RCTs of hearing aids for hearing loss and tinnitus, and systematic reviews considering hearing aids for tinnitus.

Hearing aids should not be offered to tinnitus patients without hearing loss. Tinnitus might be a parameter to be considered in hearing aid fitting and consequent relevant decision-making.

Zenner et al, 2015

Cima et al, 2019

Universitätsspital Basel

Therapie ?

Kognitive Verhaltenstherapie …..(hohe) Evidenz

Tab. 2 Evidenztabelle für tinnitusspezifische kognitive VT (KVT)

Metaanalysen/Übersichten	Evidenzgrad	Empfehlung	Bemerkungen
Andersson u. Lyttkens 1999 [2]	Hoch	Starke Empfehlung	Kognitive VT, Evidenzgrad Ia Effektstärke 0,86
Martinez-Devesa et al. 2010 [50]	Hoch	Starke Empfehlung	Kognitive VT, Evidenzgrad Ia (Cochrane-Analyse)
Nyenhuis et al. 2013 [55]	Schwach	Offen	Selbsttherapie, noch zu wenige Studien
Cima et al. 2014 [16]	Hoch	Starke Empfehlung	Kognitive VT, Evidenzgrad Ia
Studien mit deutschsprachiger KVT			
Kröner-Herwig et al. 1995 [44], Kröner-Herwig et al. 2003 [46], Zachriat und Kröner-Herwig 2004 [73]	Hoch	Starke Empfehlung	Kognitive VT, Evidenzgrad Ib
Zenner et al. 2013 [75]	Hoch	Starke Empfehlung	Kognitive VT, Evidenzgrad Ib, Studie mit n = 286

Pubmed-Recherche: „Tinnitus AND cognitive behavioral therapy", „tinnitus AND psychological therapy". 1999–2014. Nur chronischer Tinnitus. Die Darstellung der Einzelstudien beschränkt sich auf KVT in deutscher Sprache

Zenner et al, 2015

Cognitive behavioural therapy

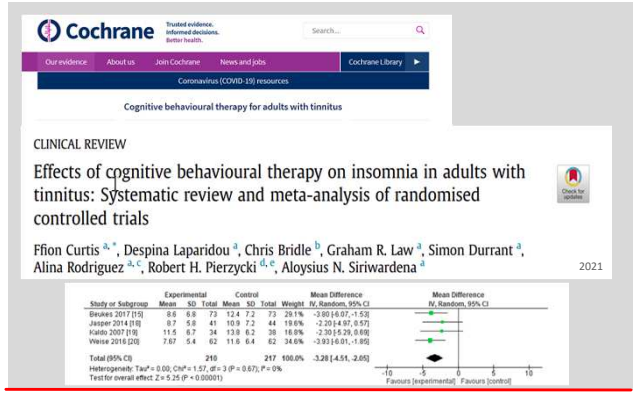
Strong recommendation for

There is high-level evidence for the effectiveness and safety of CBT for tinnitus. Recommendation is based on systematic review and one further RCT.

Cima et al, 2019

Universitätsspital Basel

Kognitive Verhaltenstherapie (CBT)



Universitätsspital Basel

Beurteilung der aktuellen Situation

Tinnitusbewältigung (un)befriedigend?

JEIN…

Interdisziplinäre / interprofessionelle Sprechstunden vorhanden…

ABER

wenig **wirklich** interdisziplinäre / interprofessionelle Therapieangebote

Kommunikation mit den Patienten bei HA / HNO Ärzten deutlich verbesserungsfähig !

Zeitdauer bis zur Überweisung in eine interdisziplinäre Sprechstunde verkürzen

Universitätsspital Basel