

Gibt es eine Vision für die Heilung von Tinnitus?



Prof Dr. Berthold Langguth

Klinik für Psychiatrie und Psychotherapie der Universität Regensburg am
Bezirksklinikum Regensburg

Wie schnell kann ein Segelboot segeln?

1. 25 % der Windgeschwindigkeit
2. 50% der Windgeschwindigkeit
3. 75 % der Windgeschwindigkeit
4. 100% der Windgeschwindigkeit
5. 200 % der Windgeschwindigkeit
6. 300% der Windgeschwindigkeit

Wo stehen wir in der Tinnitusforschung und Behandlung?

Therapie, mit der Tinnitus geheilt werden kann



Therapie, mit der die Lautstärke des Ohrgeräusches sicher zu vermindern ist



Therapie, mit der die Tinnitusbelastung gelindert werden kann



Leitlinien zur Behandlung von Tinnitus

Guideline

Clinical Practice Guideline: Tinnitus



Otolaryngology-
Head and Neck Surgery

S3-Leitlinie 017/064: Chronischer Tinnitus

aktueller Stand: 02/2015

David
Richar
Eugene
Brian V
Evelyn
Deena
Scott I
Craig V
C. Dou
Malcol
Richar

01.06.2015 | Leitthema | Ausgabe 6/2015

Zur interdisziplinären S3-Leitlinie für die
Therapie
Tinnitus

Guidelines

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Zeitsch

Autoren
Mazurek



NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Tinnitus: assessment and management

The Department of Health and Social Care in England has asked NICE to develop guidance on assessment and management of tinnitus.

The guideline will be developed using the methods and processes outlined in [developing NICE guidelines: the manual](#).

RESEARCH ARTICLE

Open Access

Treatment options for subjective tinnitus: Self reports from a sample of general practitioners and ENT physicians within Europe and the USA

Deborah A Hall^{1,2*}, Miguel JA Láinez³, Craig W Newman⁴, Tanit Ganz Sanchez⁵, Martin Egler⁶, Frank Tennigkeit⁶, Marco Koch⁶ and Berthold Langguth⁷

Table 10 Percentages of satisfaction ratings by physicians regarding current medications for subjective tinnitus.

Country	Very satisfied [%]		Relatively satisfied [%]		Not very satisfied [%]		Completely dissatisfied [%]	
	GP	ENT	GP	ENT	GP	ENT	GP	ENT
US	5	3	34	14	57	60	4	24
UK	2	2	12	23	61	40	25	36
Germany	0	2	28	26	50	60	22	12
France	0	0	18	12	64	70	18	18
Spain	0	4	38	23	56	58	6	15
Italy	2	2	34	29	58	60	6	10

Ratings reported by each profession each sum to 100%.

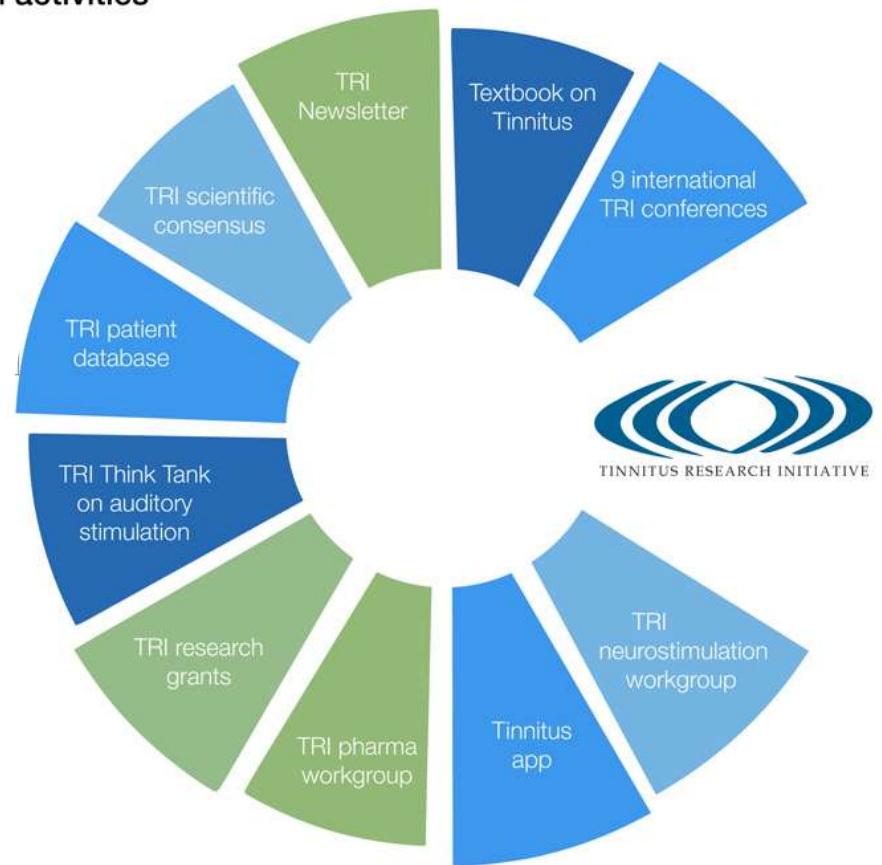
Data are reported only for those physicians who saw at least one tinnitus patient in the past three months.



TINNITUS RESEARCH INITIATIVE

Together for a cure!

TRI networking and research activities



We committed ourselves to improving the quality of life for patients who suffer from tinnitus and tinnitus-related disorders. Central to our mission is the facilitation and support of biomedical research which will lead to novel, effective therapies for the treatment of tinnitus.

Roadmap to A Cure 2017

A

STUDY EPIDEMIOLOGY/POPULATION OF TINNITUS

Characterize tinnitus and their prevalence and geographical/spatial distributions.

B

DEVELOP TINNITUS PREVENTION

Develop methods that prevent tinnitus

C

DEVELOP RELIABLE DIAGNOSTIC TOOLS

Develop reliable tools that assess tinnitus in animals or humans.

D

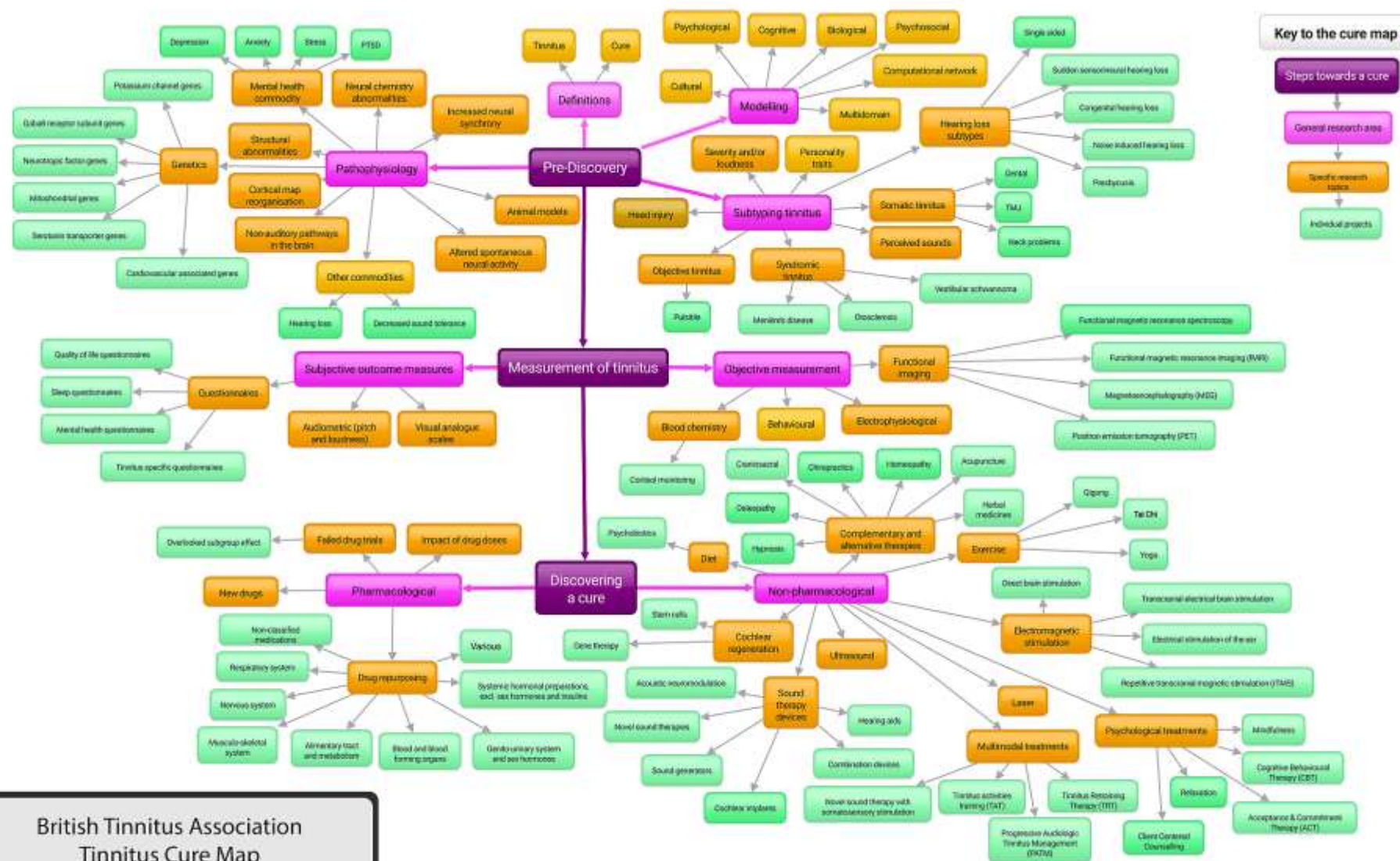
ELUCIDATE MECHANISMS OF TINNITUS

Determine sites in the ear or brain of animal or humans where tinnitus signals arise and persist at molecular/cellular/systems levels.

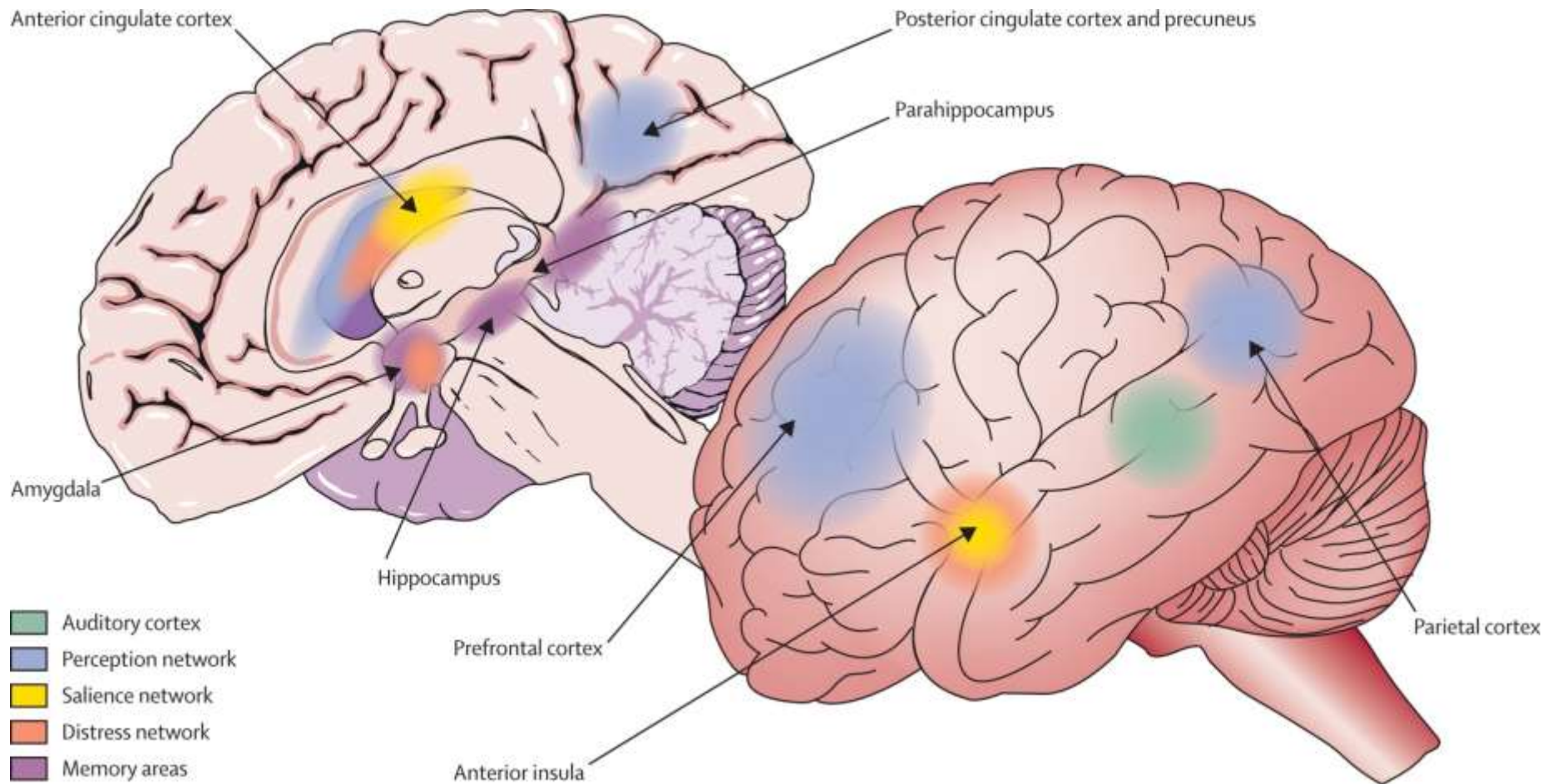
E

DEVELOP AND OPTIMIZE THERAPIES FOR TINNITUS

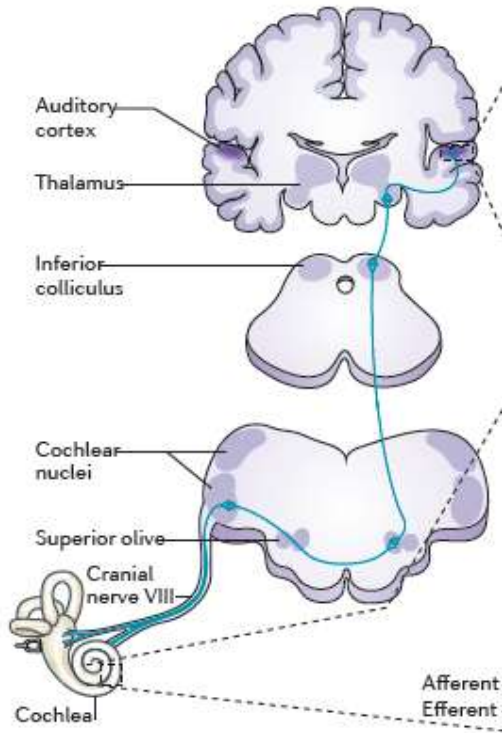
Assess the potential for intervention, manipulation or treatment for tinnitus and optimize their parameters and minimize their side effects.



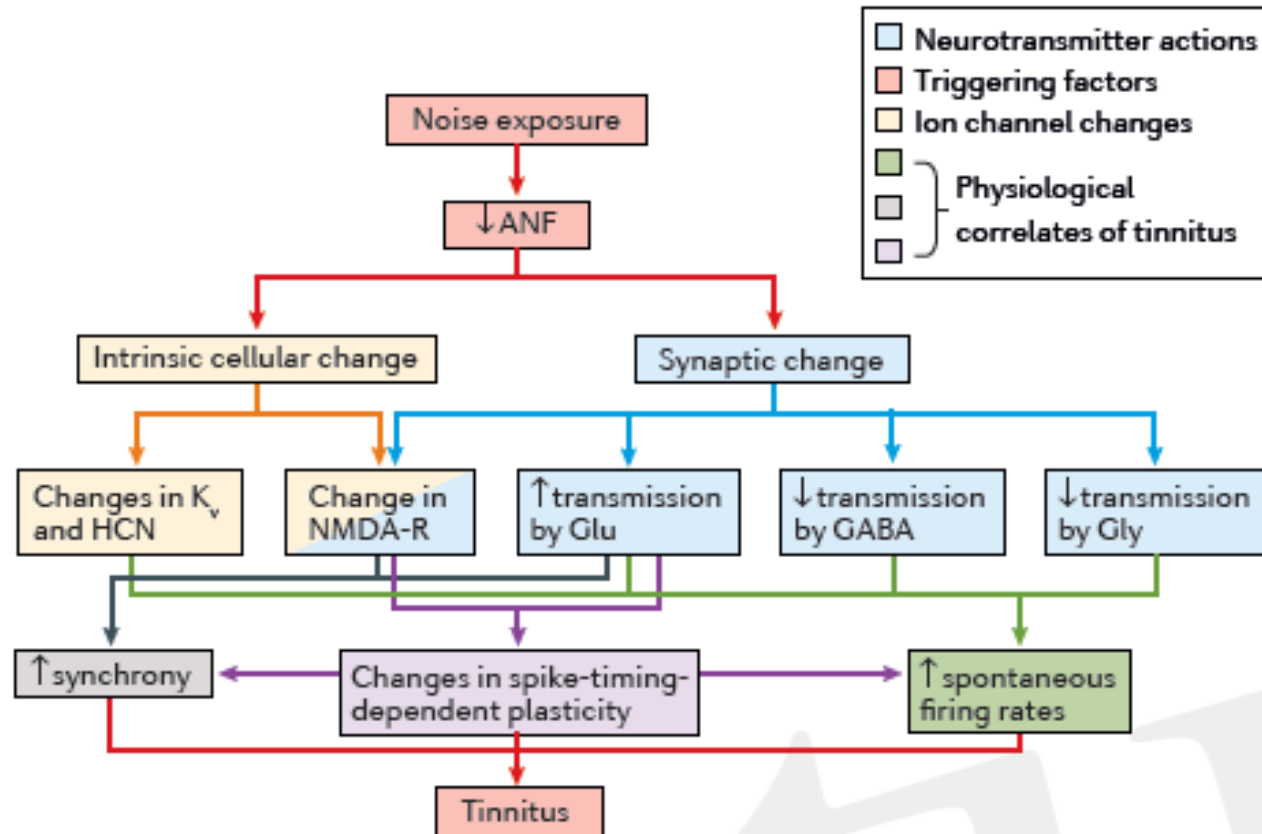
Verständnis der Pathophysiologie



Verständnis der Pathophysiologie

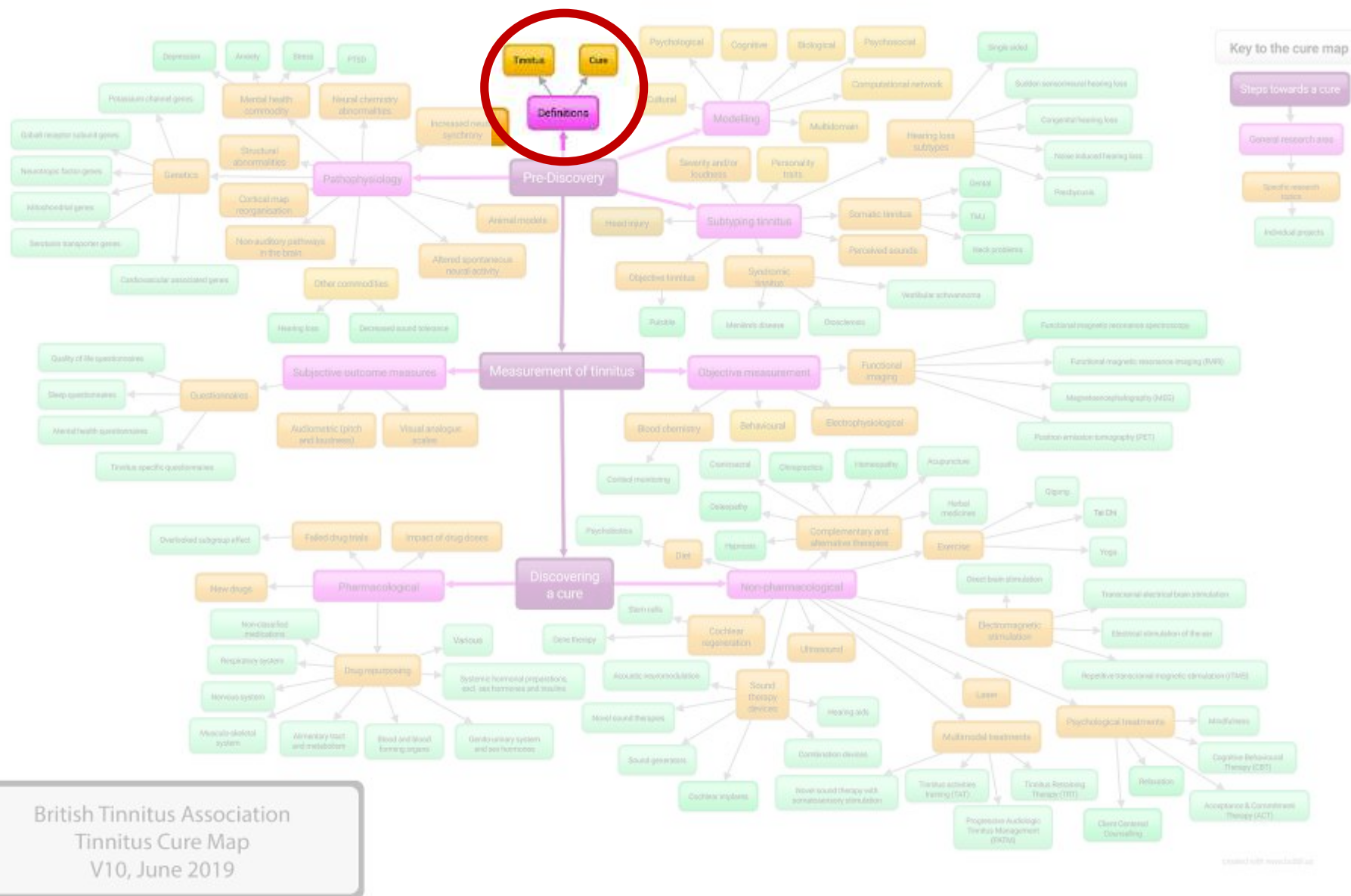


Cochlea



Central nervous system

führt zur Identifikation innovativer Therapieansätze



Tinnitus and tinnitus disorder: Theoretical and operational definitions (an international multidisciplinary proposal)

Dirk De Ridder^{a,*}, Winfried Schlee^b, Sven Vanneste^c, Alain Londero^d, Nathan Weisz^e, Tobias Kleinjung^f, Giriraj Singh Shekhawat^{g,h,i}, Ana Belén Elgoyhen^j, Jae-Jin Song^k, Gerhard Andersson^{l,m}, Divya Adhia^a, Andreia Aparecida de Azevedoⁿ, David M. Baguley^{o,p}, Eberhard Biesinger^q, Ana Carolina Binetti^r, Luca Del Bo^s, Christopher R. Cederroth^{p,t,u}, Silvana Cima^{v,w,x}, Jos J. Eggermont^y, Ricardo Figueiredo^{z,aa}, Thomas E. Fuller^{v,ab}, Silvano Gallus^{ac}, Annick Gilles^{ad,ae}, Deborah A. Hall^{af,ag,ah,ai}, Paul Van de Heyning^{aj,ak}, Derek J. Hoare^{ak}, Eman M. Khedr^{al}, Dimitris Kikidis^{am}, Maria Kleinstaeuber^{an}, Peter M. Kreuzer^b, Jen-Tsung Lai^{ao}, Jose Miguel Lainez^{ap}, Michael Landgrebe^{aq}, Lieber Po-Hung Li^{ar}, Hubert H. Lim^{as}, Tien-Chen Liu^{at}, Jose Antonio Lopez-Escamez^{au,av,aw}, Birgit Mazurek^{ax}, Aage R. Møller^{ay}, Patrick Neff^{az}, Christo Pantev^{ba}, Shi Nae Park^{bb}, Jay F. Piccirillo^{bc}, Timm B. Poepl^{bd}, Josef P. Rauschecker^{be,bf}, Richard Salvi^{bg}, Tanit Ganz Sanchez^{bh,bi}, Martin Schecklmann^b, Axel Schiller^b, Grant D. Searchfield^{bj,bk,bl}, Richard Tyler^{bm}, Veronika Vielsmeier^{bn}, Johan W.S. Vlaeyen^{w,bo}, Jinsheng Zhang^{bp}, Yiwen Zheng^{bq}, Matteo de Noraⁱ, and Berthold Langguth^b

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^fDepartment of Otorhinolaryngology—Head and Neck Surgery, University Hospital Zurich, University of Zurich, Zurich, Switzerland

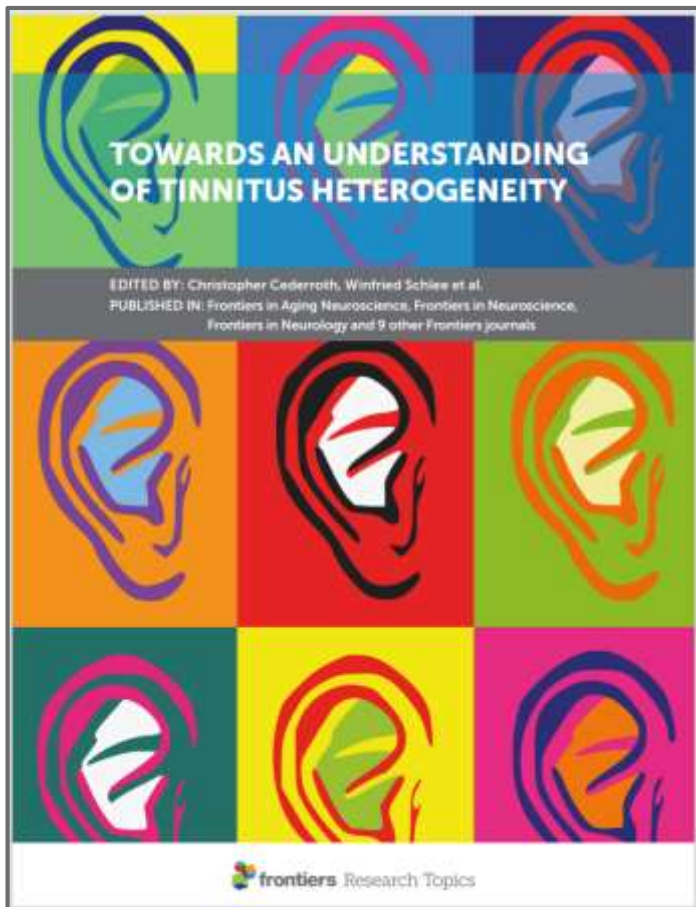
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^hEar Institute, University College London, London, United Kingdom

ⁱTinnitus Research Initiative, Regensburg, Germany







Towards an Understanding of Tinnitus Heterogeneity

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Overview Articles Authors Impact

20 Articles 62 Authors 2,707,738 Impact

V10, June 2019



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Home | Domains and Actions | Biomaterials and Molecular Biosciences (BMBS) | Actions | BM1306

Biomaterials and Molecular Biosciences (BMBS) COST Action BM1306

Better Understanding the Heterogeneity of Tinnitus to Improve and Develop New Treatments (TINNET)

Descriptions are provided by the Actions directly via e-COST.

Tinnitus is the perception of sound in the absence of an environmental acoustic stimulus. In Europe over 70 million people experience tinnitus and for 7 million it creates a debilitating condition. There are no established treatment approaches available for curing tinnitus. Better treatment is urgently needed.

Brain research has created a paradigm shift by demonstrating that tinnitus is the consequence of altered neural activity in specific brain networks rather than an ear problem. Based on the understanding of tinnitus as brain disorder, first promising therapeutic approaches have already been developed by individual groups participating in this Action.

General Information*

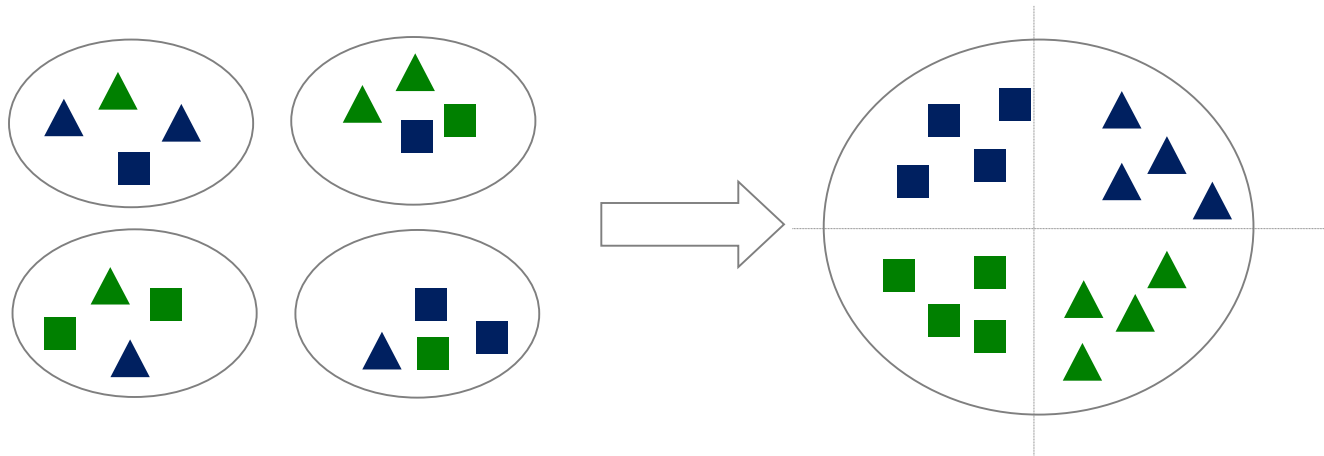
Proposer of the Action: Dr. Bertil LANGGUTH

CC Representatives: Prof. Dr. J. J. LANGGUTH (FR)

Science officer of the Action: Dr. Ina J. LANGGUTH

Administrative officer of the Action: Dr. Ina J. LANGGUTH

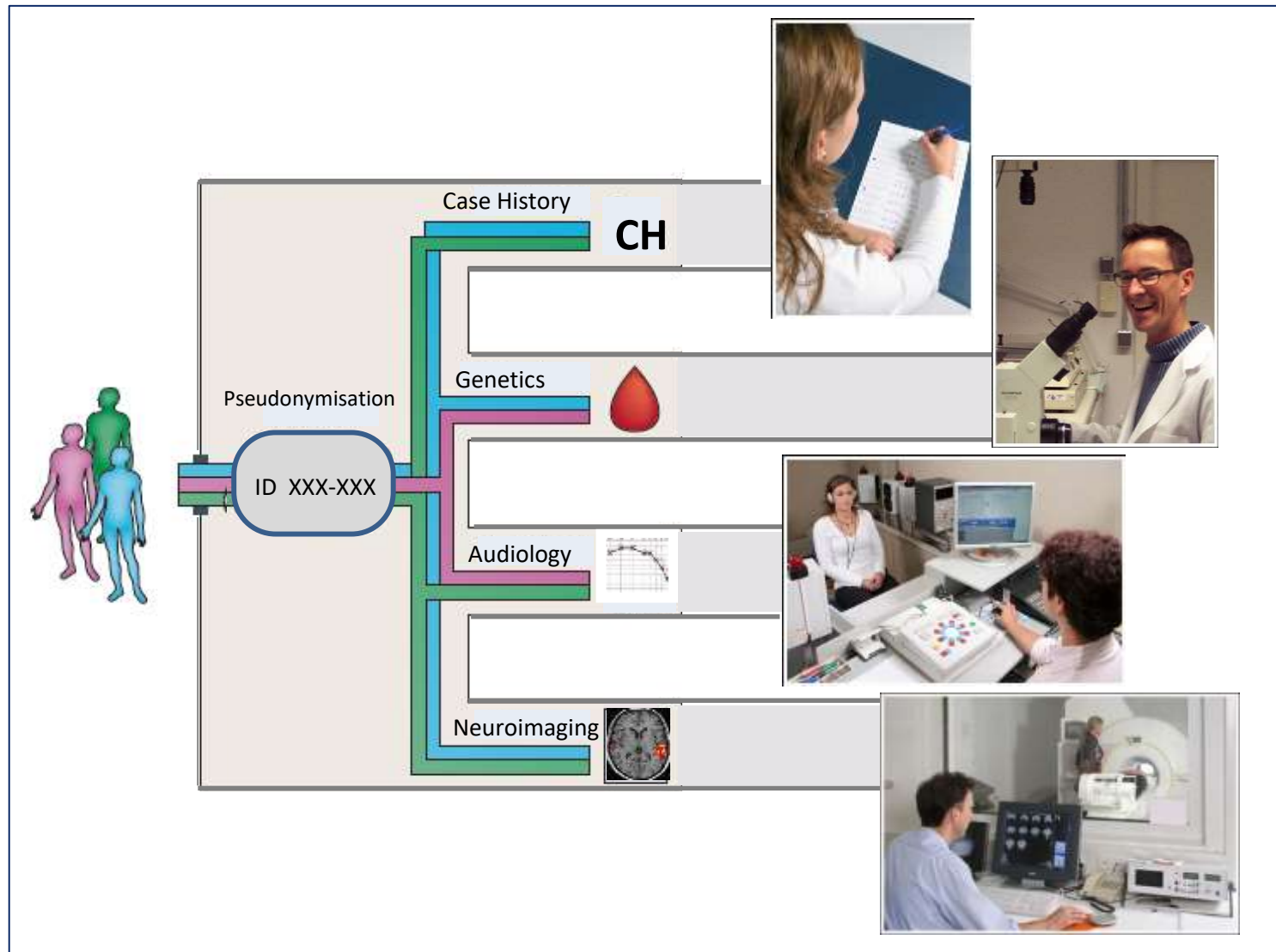
- Many clinical trials without significant results, even if some patients have good benefit
- Both in clinical trials and in pathophysiologic studies, findings cannot be replicated
- **Tinnitus is highly heterogeneous**
- treatments with low evidence levels
- no standards for clinical management
- only limited interest from the pharma- and health industry inspite of the huge market



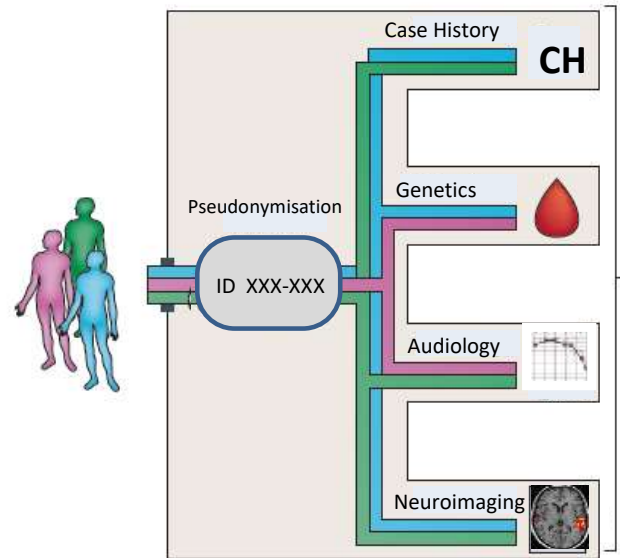
Objective: Standards for Patient Assessment



Objective: A Pan-European Tinnitus Database



Establishment of a Pan-European Database



**Standards for
clinical,
genetic and
imaging
assessment**

**Establishment
of a modular
database with
longitudinal
data**

Standards for Analyses:
-Change over time
-genetic determinants
-specific interventions

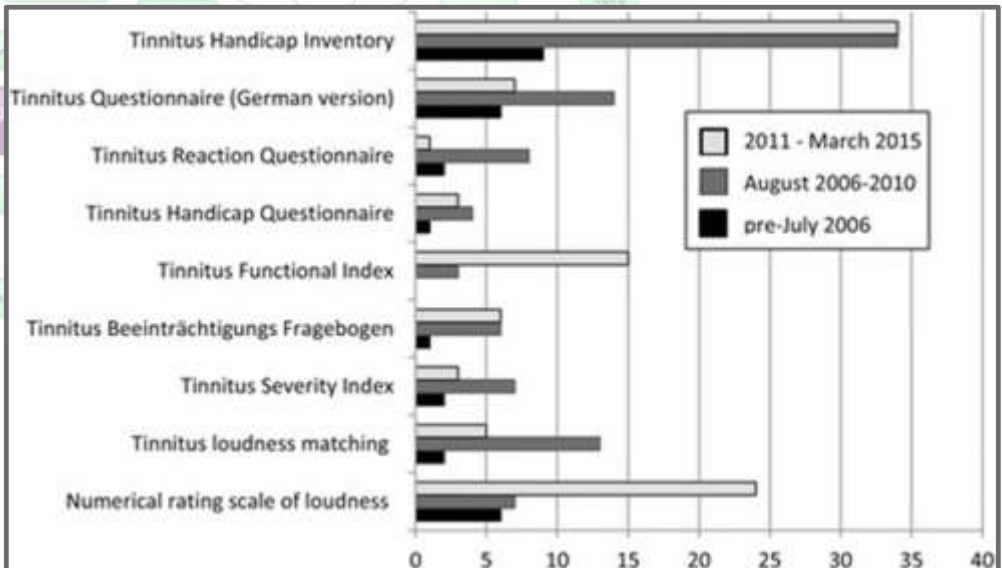
Consensus for tinnitus patient assessment and treatment outcome measurement: Tinnitus Research Initiative meeting, Regensburg, July 2006

B. Langguth^{1,*}, R. Goodey², A. Azevedo³, A. Bjorne⁴, A. Cacace⁵, A. Crocetti⁶, L. Del Bo⁶, D. De Ridder⁷, I. Diges⁸, T. Elbert⁹, H. Flor¹⁰, C. Herraiz⁸, T. Ganz Sanchez¹¹, P. Eichhammer¹, R. Figueiredo³, G. Hajak¹, T. Kleinjung¹², M. Landgrebe¹, A. Londero¹³, M.J.A. Lainez¹⁴, M. Mazzoli¹⁵, M.B. Meikle¹⁶, J. Melcher¹⁷, J.P. Rauschecker¹⁸, P.G. Sand¹, M. Struve¹⁰, P. Van de Heyning¹⁹, P. Van Dijk²⁰, and R. Vergara²¹

J Psychosom Res. 2012 August ; 73(2): 112–121. doi:10.1016/j.jpsychores.2012.05.002.

Methodological aspects of clinical trials in tinnitus: A proposal for an international standard

Michael Landgrebe^{1,2,*}, Andréia Azevedo³, David Baguley⁴, Carol Bauer⁵, Anthony Cacace⁶, Claudia Coelho⁷, John Dornhoffer⁸, Ricardo Figueiredo³, Herta Flor⁹, Goeran Hajak¹⁰, Paul van de Heyning¹¹, Wolfgang Hiller¹², Eman Khedr¹³, Tobias Kleinjung¹⁴, Michael Koller¹⁵, Jose Miguel Lainez¹⁶, Alain Londero¹⁷, William H. Martin¹⁸, Mark Mennemeier¹⁹, Jay Piccirillo²⁰, Dirk De Ridder²¹, Rainer Rupprecht¹, Grant Searchfield²², Sven Vanneste²¹, Florian Zeman¹⁵, and Berthold Langguth^{1,2}

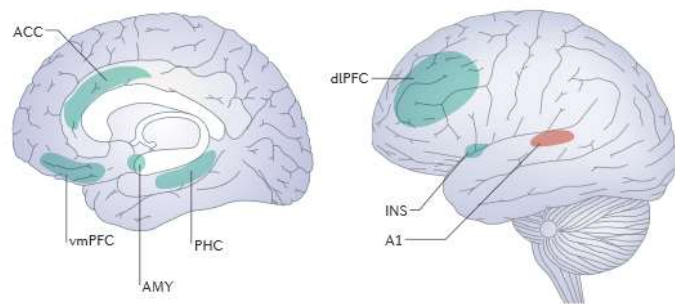


PERSPECTIVES

OPINION

Tinnitus: perspectives from human neuroimaging

Ana Belén Elgoyhen, Berthold Langguth, Dirk De Ridder and Sven Vanneste



British Tinnitus Association
Tinnitus Cure Map
V10, June 2019



created with: www.Lucid3d.co.uk

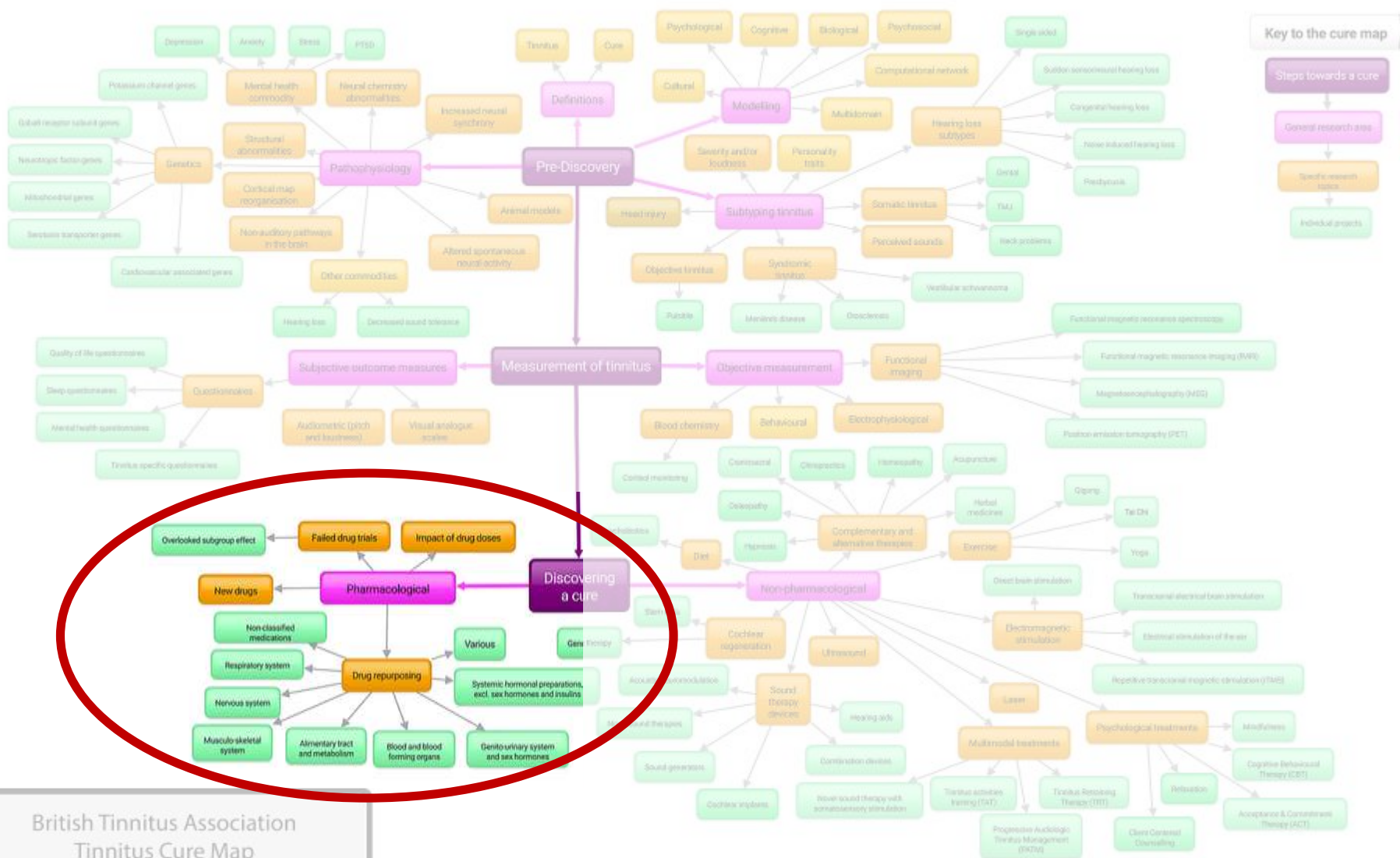


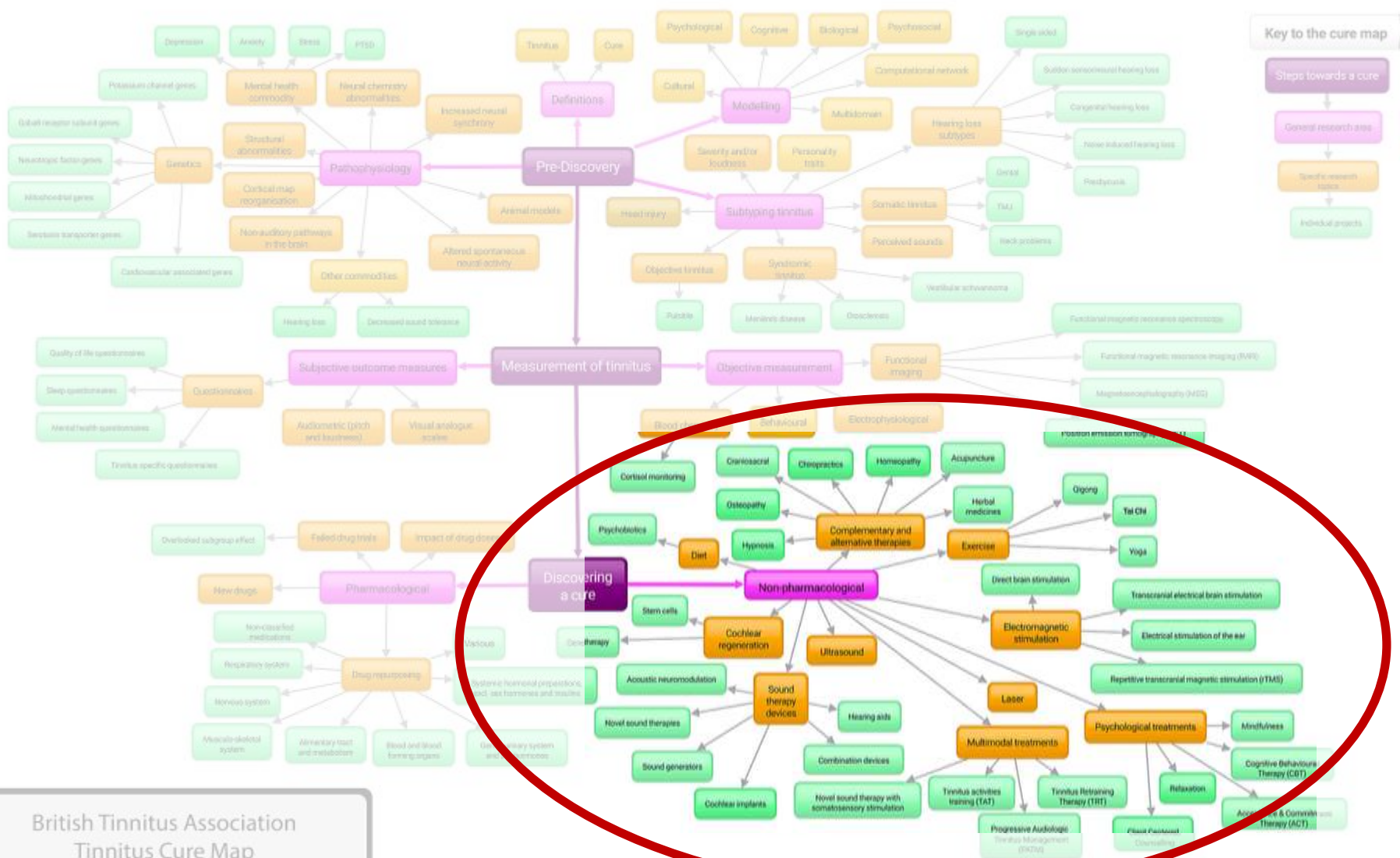
Table 1 Approved and on-going drug trials for tinnitus therapy collected from Medtrack

Product name	Active ingredient	Mode of action	Phase of development ^a	Company name
Tinnex	Caroverine	NMDA/AMPA antagonist	Marketed	Lincoln (Ahmedabad, India)
Adexor	Trimetazidine	AMPA antagonist	Marketed	Laboratoires Servier (<i>Neuilly-sur-Seine</i> , France)
Anginox	Trimetazidine	AMPA antagonist	Marketed	General Pharmaceuticals (Dhaka, Bangladesh)
Angiozil Retard	Trimetazidine	AMPA antagonist	Marketed	Sotex (Moscow)
MRZ2579	Neramexane	Dual antagonist of α -9 α -10 cholinergic nicotinic receptor and NMDA receptor	Phase 3	Merz, Kyorin Pharmaceuticals (Tokyo)
AM-101	–	NMDAR antagonist	Phase 2/3	Auris Medical (Basel)
BGG492	–	AMPA antagonist	Phase 2	Novartis (Basel)
LidoPAIN TV	Lidocaine	Fast voltage-gated sodium channel blocker	Phase 2	Immune Pharmaceuticals (Tarrytown, NY, USA)
NST001	Gacyclidine	NMDAR antagonist	Phase 1	NeuroSystec (Valencia, CA, USA)
AUT00063	–	Kv3 potassium channel modulator	Phase 1	Autifony Therapeutics (London)
FX004	–	NMDAR antagonist	Research	Flexion Therapeutics (Burlington, MA, USA)

Phytochemicals have been excluded. ^aFor products that are marked as 'Marketed,' the countries where these drugs are marketed could not be identified.

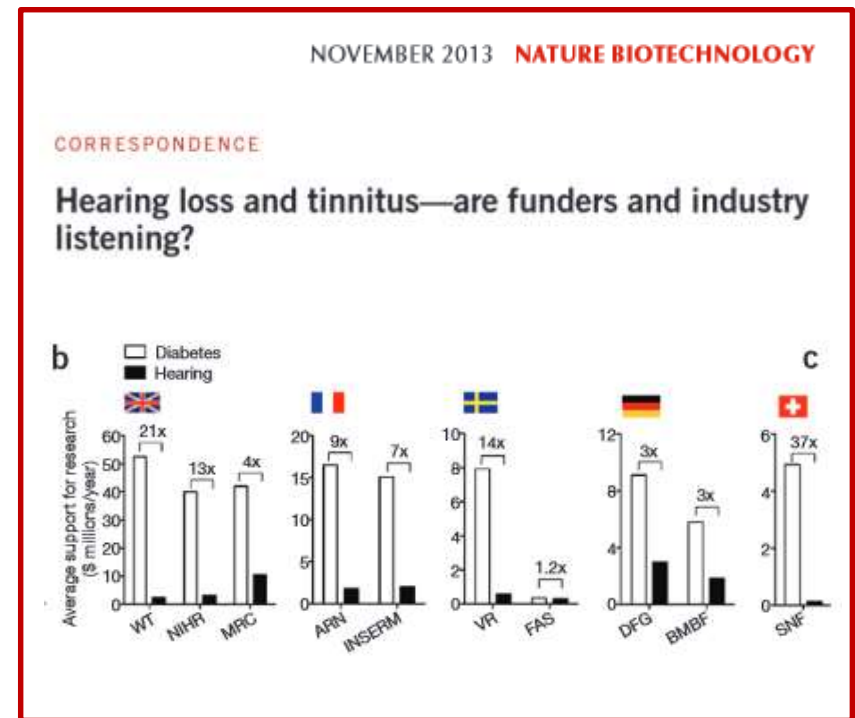
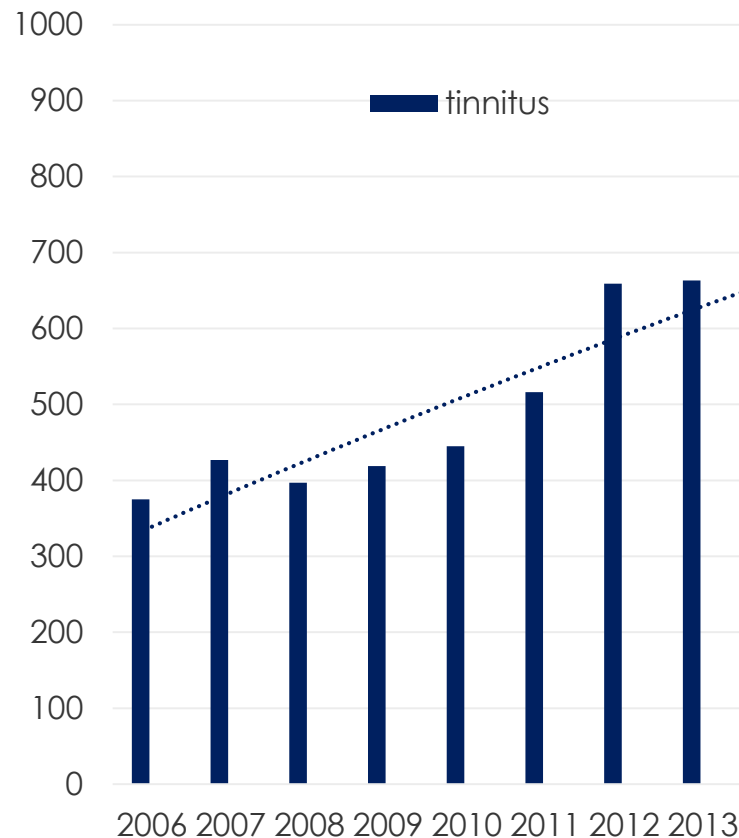


British Tinnitus Association
Tinnitus Cure Map
V10, June 2019



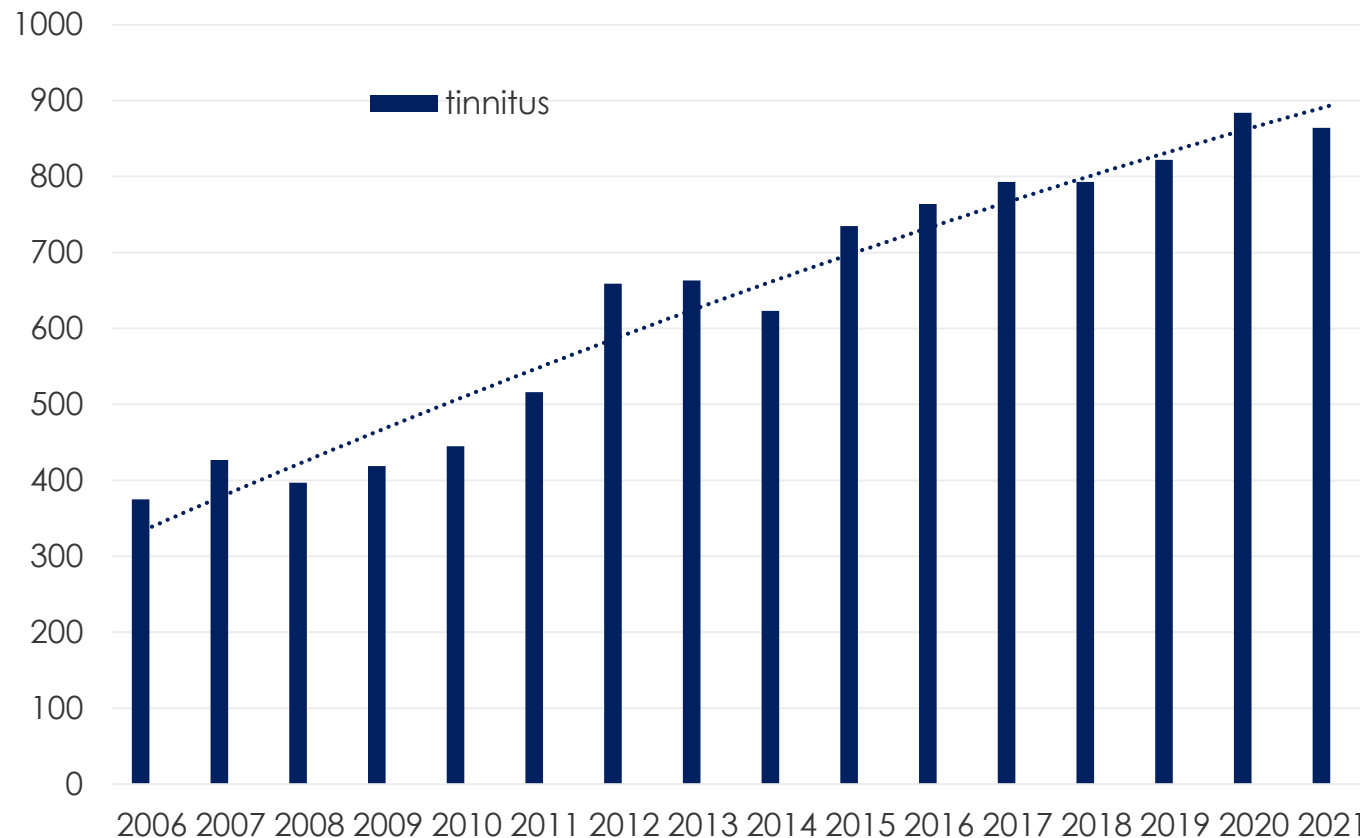
Fortschritte in der Tinnitustherapie

Zahl der jährlichen Publikationen in pub med:



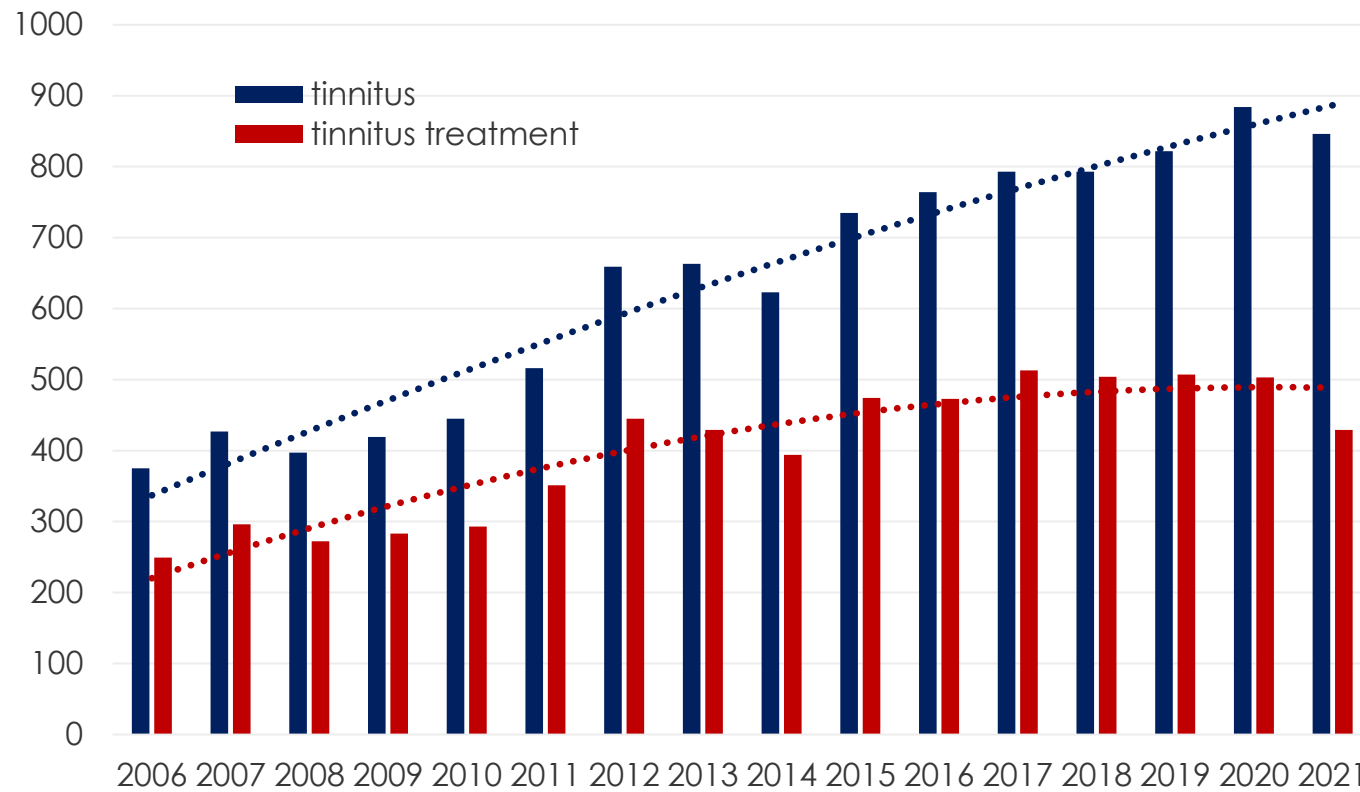
Fortschritte in der Tinnitustherapie

Zahl der jährlichen Publikationen in pub med:



Fortschritte in der Tinnitustherapie

Zahl der jährlichen Publikationen in pub med:



Fortschritt in der Medizin



„Man hat mich bezichtigt, das Penicillin erfunden zu haben. Erfinden lässt sich das Penicillin von keinem Menschen, denn es wurde vor undenklichen Zeiten von einem gewissen Schimmelpilz hervorgebracht.“

Alexander Fleming 1945

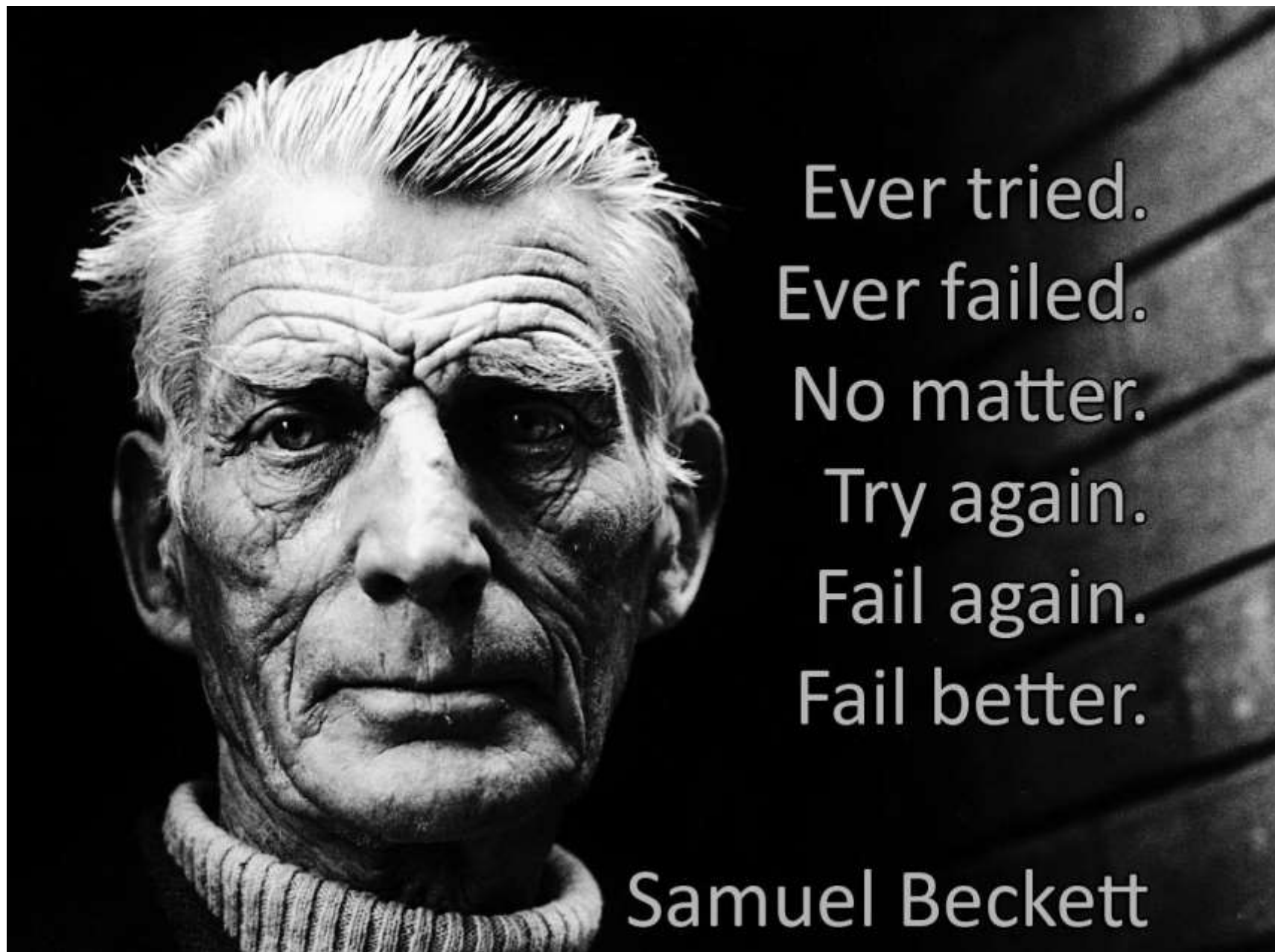


Sildenafil:

- entwickelt zur Behandlung der pulmonalen Hypertension
- dank unerwarteter Nebenwirkungen ein Block Buster geworden

JUST DO IT.





Ever tried.
Ever failed.
No matter.
Try again.
Fail again.
Fail better.

Samuel Beckett

Wie schnell kann ein Segelboot segeln?

1. 25 % der Windgeschwindigkeit
2. 50% der Windgeschwindigkeit
3. 75 % der Windgeschwindigkeit
4. 100% der Windgeschwindigkeit
5. 200 % der Windgeschwindigkeit
6. 300% der Windgeschwindigkeit

Über 300% der Windgeschwindigkeit





Was kann die Tinnitusforschung von Team New Zealand lernen ?



Was kann die Tinnitusforschung von Team New Zealand lernen ?

Kreativität
Innovation
Team Spirit
Hingabe
Vorbereitung
Professionalität
Multidisziplinarität

Ein konzertierter, und ergebnisorientierter Ansatz mit einem klaren Ziel

Brauchen wir einen America's Cup für die Tinnitusforschung ?



TRI Academy: www.finnitusresearch.org

