



# **Alkoholabhängigkeit: Krankheitslast und neue Therapieoptionen**

**State of the art Symposium  
DGPPN 2012**

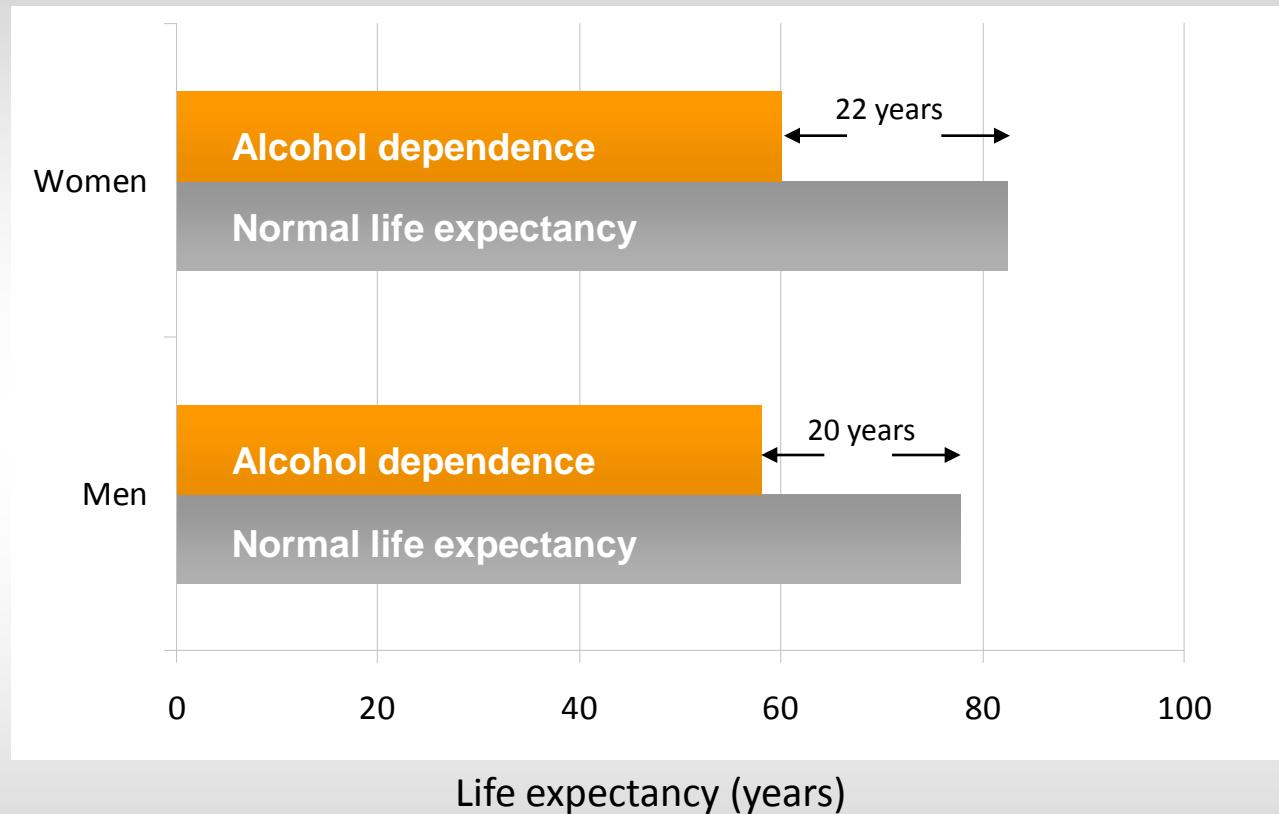
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# Lebenserwartung bei Alkoholikern reduziert



To improve life expectancy in Alcohol Dependence, it is essential to reach more alcohol dependent patients at an earlier stage in their lives

# Potentielle Interessenkonflikte

Unterstützung für Studien:

Alkermes, MSD, Lundbeck,  
Mundipharma, McNeill

Advisory Board:

Alkermes, Desitin, Lundbeck, McNeill, Pfizer

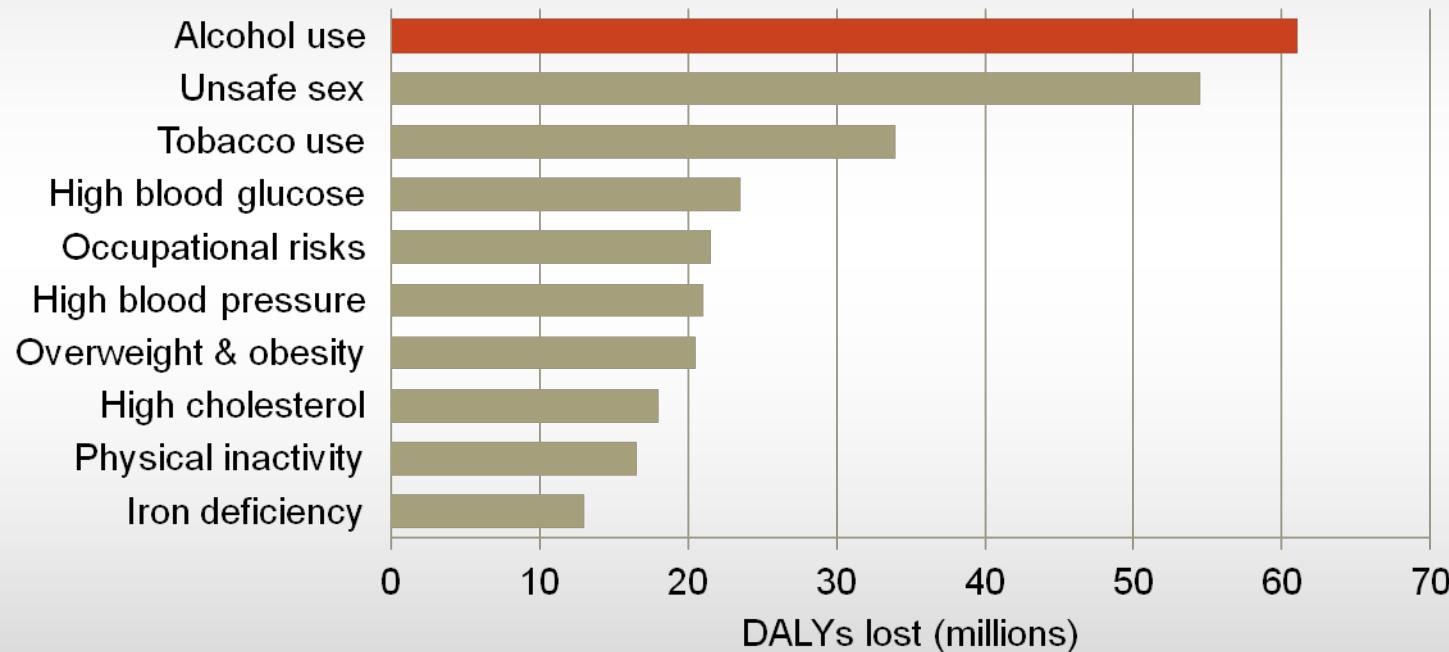


# Gliederung:

1. “Krankheitslast” und Kosten
2. Hilfesystem, Psycho- und Pharmakotherapie
3. Aktuelle Entwicklungen
  - Individualisierte Therapie
  - Therapieziele  
(Abstinenz; Kontrolliertes Trinken; Risikoarmes Trinken)

# Alcohol is the world's leading risk factor for overall burden of disease among men aged 15–59

Disability-adjusted life year (DALYs) lost attributable to 10 leading risk factors, for the age group 15–59 years (2004)



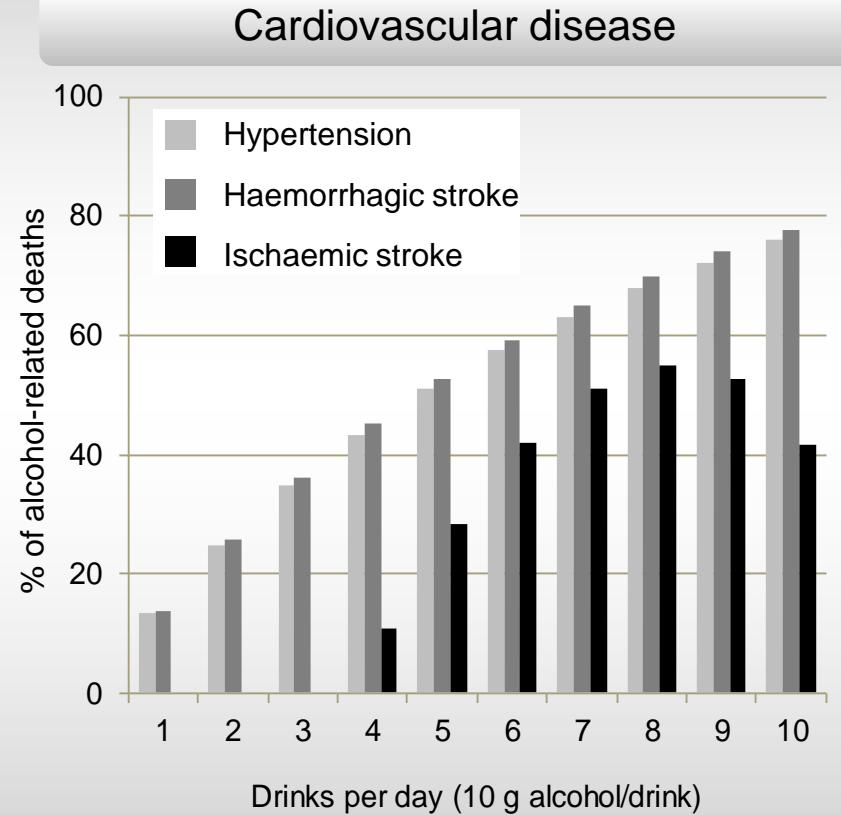
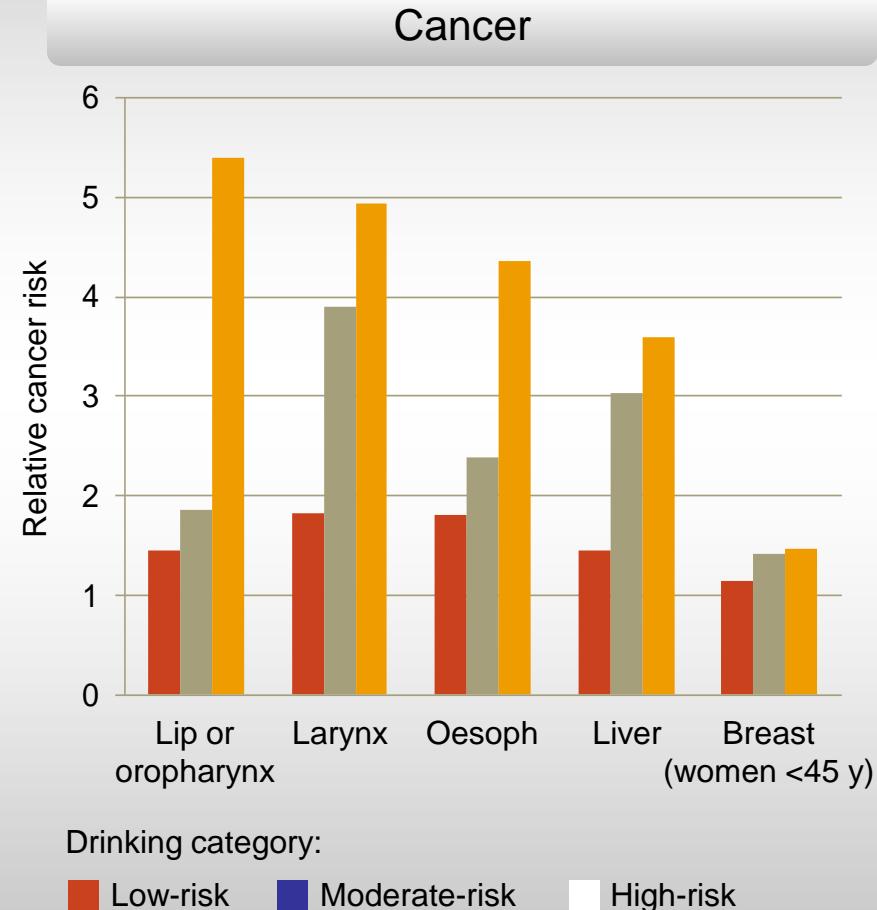
In 2004, 4.5% of the global burden of disease and injury was attributable to alcohol: 7.4% for men and 1.4% for women

# Europa ist Spitzensreiter - weltweit

- The WHO European Region is the heaviest drinking region in the world
  - Over one fifth of the European population aged  $\geq 15$  years report heavy episodic drinking\* at least once a week
  - Heavy episodic drinking is widespread across all age ranges
  - Heavy episodic drinking is widespread across all parts of Europe

\*Defined as  $\geq 5$  drinks ( $\geq 50$  g alcohol) on one occasion;  
definitions of drink units vary across European countries

# Health risks increase in proportion to the amount of alcohol consumed



WHO DRL:

High-risk drinking=>40 g women/>60 g men;  
Moderate-risk drinking=20–40 g women/40–60 g men;  
Low-risk drinking=0–20 g women/0–40 g men

WHO. International guide for monitoring alcohol consumption, 2000;  
Rehm et al. Int J Methods Psychiatr Res 2008;17(3):141–151;  
Rehm et al. In: Comparative quantification of health risks, Zentralinstitut für Seelische Gesundheit; WHO; Ridolfo & Stevenson. AIHW 2001. PHE 29



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ECNP/EBC REPORT 2011

## The size and burden of mental disorders and other disorders of the brain in Europe 2010

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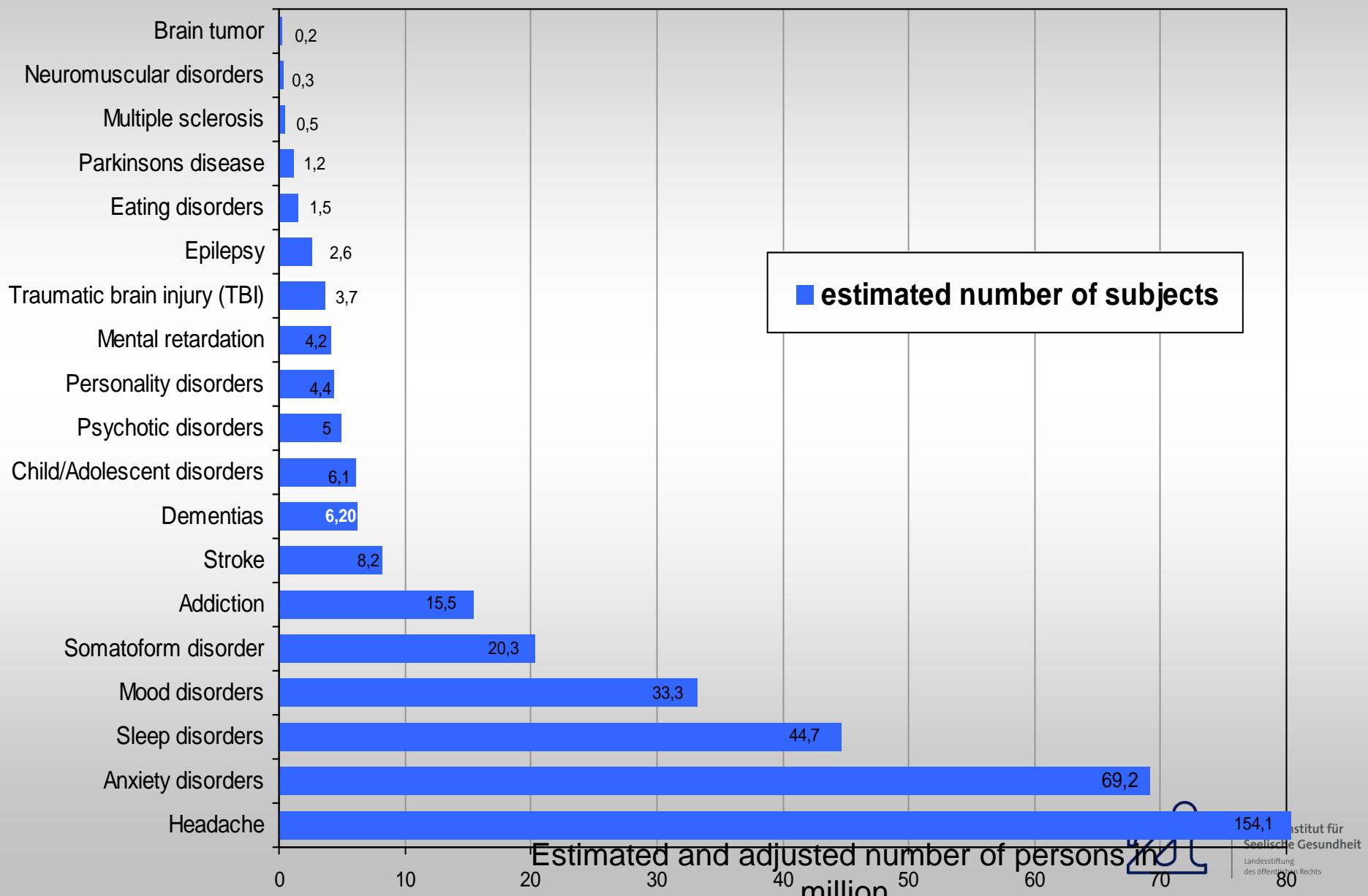
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# Mental disorders affect 38% of the total EU-population





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## Cost of disorders of the brain in Europe 2010

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on behalf of the CDBE2010 study group<sup>1</sup>

# Cost of brain disorders in Europe 2010



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## The burden and cost of disorders of the brain in Europe with the inclusion of harmful alcohol use and nicotine addiction

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### KEYWORDS

Substance use disorders;  
Alcohol;  
Tobacco;  
Cost of illness;  
DALY;  
Burden of disease

### Abstract

Recent publications calculated an annual prevalence of 38% of the population within the European Union having a "disorder of the brain" including substance use disorders (SUD) (Wittchen et al., 2011). The overall economic burden was estimated at 789 billion € (Gustavsson et al., 2011). While these calculations included alcohol dependence, harmful use of alcohol, a common ICD-10 diagnosis, was not considered appropriately. Tobacco related figures were completely left out. We hence estimated burden and costs of these diagnoses for the European Union by extrapolating basic figures from Germany, which have average proportions of alcohol and tobacco related consumption and prevalence rates. Several German Data sets were used to estimate prevalence, disability adjusted life years (DALYs) and Cost-of-Illness for alcohol and tobacco use disorders in Germany. Results were obtained by focusing on the burden of SUD including well-known comorbidities. Results were then extrapolated to the European level. Compared with the earlier estimation DALYs increased from 2.8 million to over 6.6 million for SUDs. Costs augmented from 65.68 billion € PPP to about 350 billion € PPP. We discuss the robustness and validity of our findings under different assumptions and with regard to methodology. We further took into account that in the new DSM 5 alcohol abuse and alcohol dependence - and similar tobacco - will be collapsed into one category of "alcohol related disorder". If added to the burden and cost calculations the substance use disorders rank on top of all disorders of the brain in Europe. Regardless of the calculation procedure our figures represent lower estimates and have to be regarded as conservative approaches.

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### 1. Introduction

Alcohol and tobacco consumption are among the most dangerous threats to health in the world (WHO, 2009). From a psychiatric point of view alcohol and tobacco products bear the risk of dependence and harmful use,

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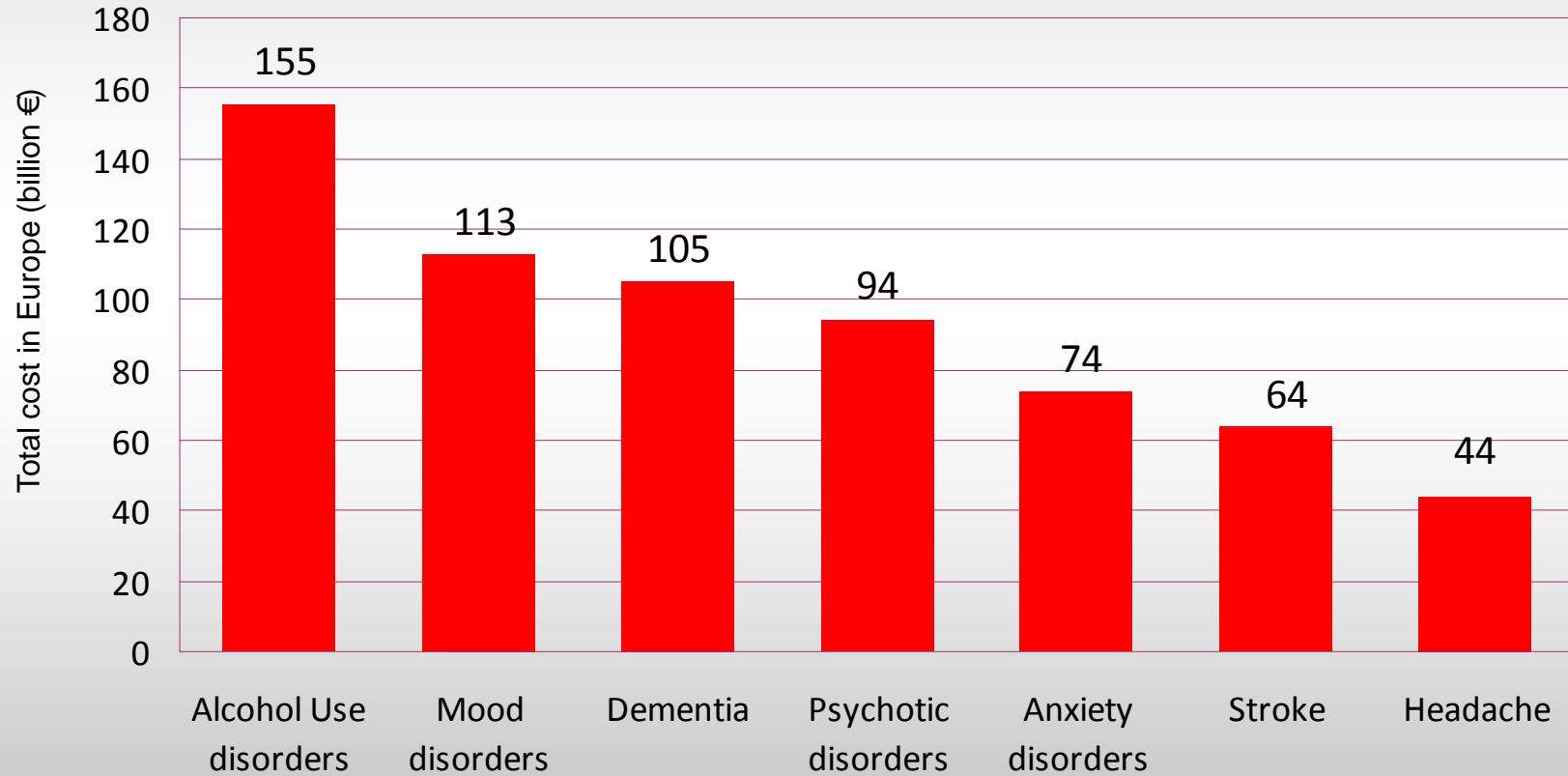
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# Alcohol and nicotine use disorders bear the most severe burden and costs



# Anderson & Baumberg. Alcohol in Europe, 2006



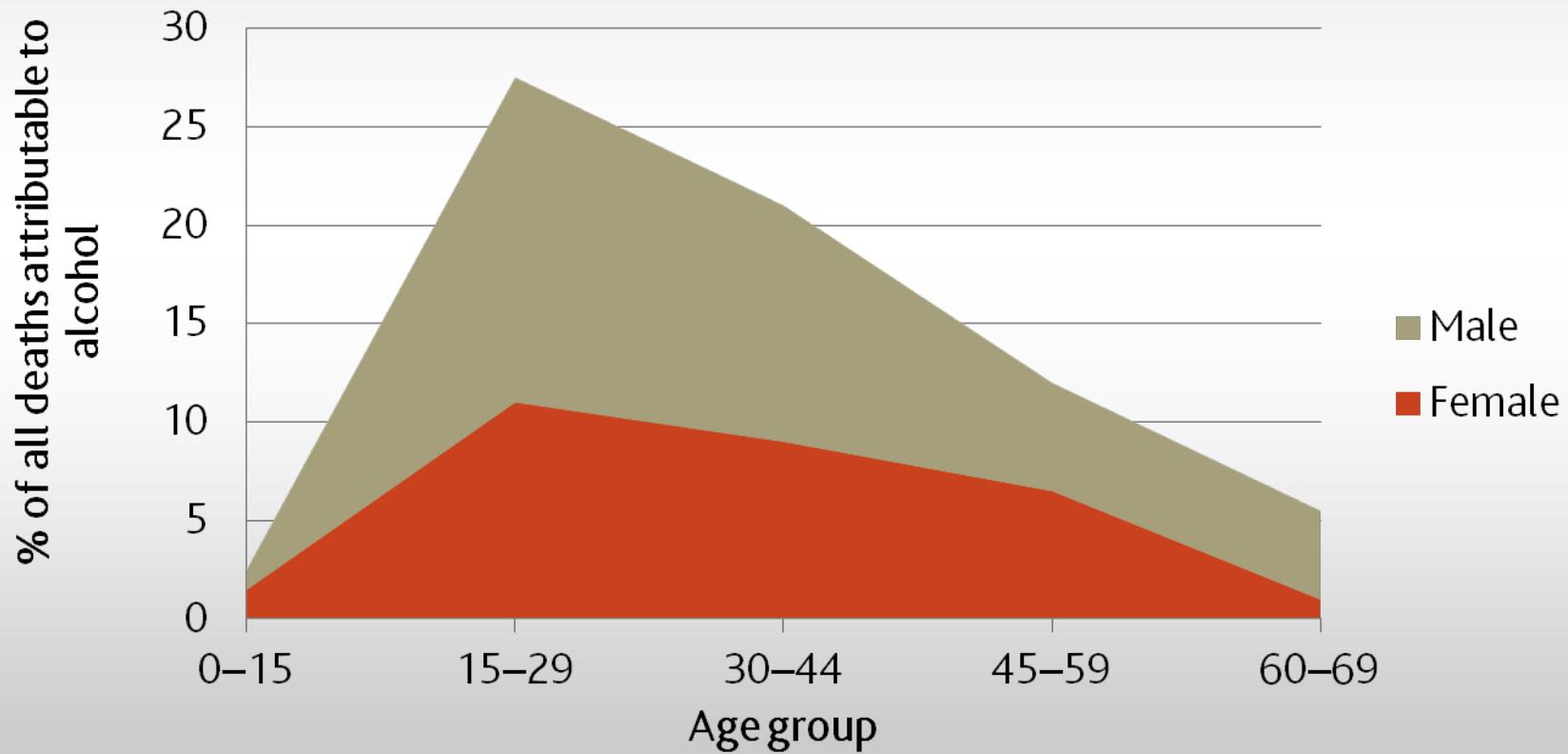
Health & Consumer Protection  
Directorate-General

## Alcohol in Europe A public health perspective

# Alcohol consumption leads to a high annual mortality burden in the EU

Neuropsychiatric conditions	– 17,000 deaths – 200,000 episodes of depression
Gastrointestinal conditions	– 45,000 deaths due to liver cirrhosis
Cancers	– 50,000 deaths – 11,000 of these are due to breast cancer
Intentional injuries	– 2,000 homicides (4 in 10 of all homicides) – 10,000 suicides (1 in 6 of all suicides)
Unintentional injuries	– 17,000 deaths due to drink-driving (1 in 3 of all driving deaths) – 27,000 accidental deaths

# Deaths attributable to alcohol in the EU, by age

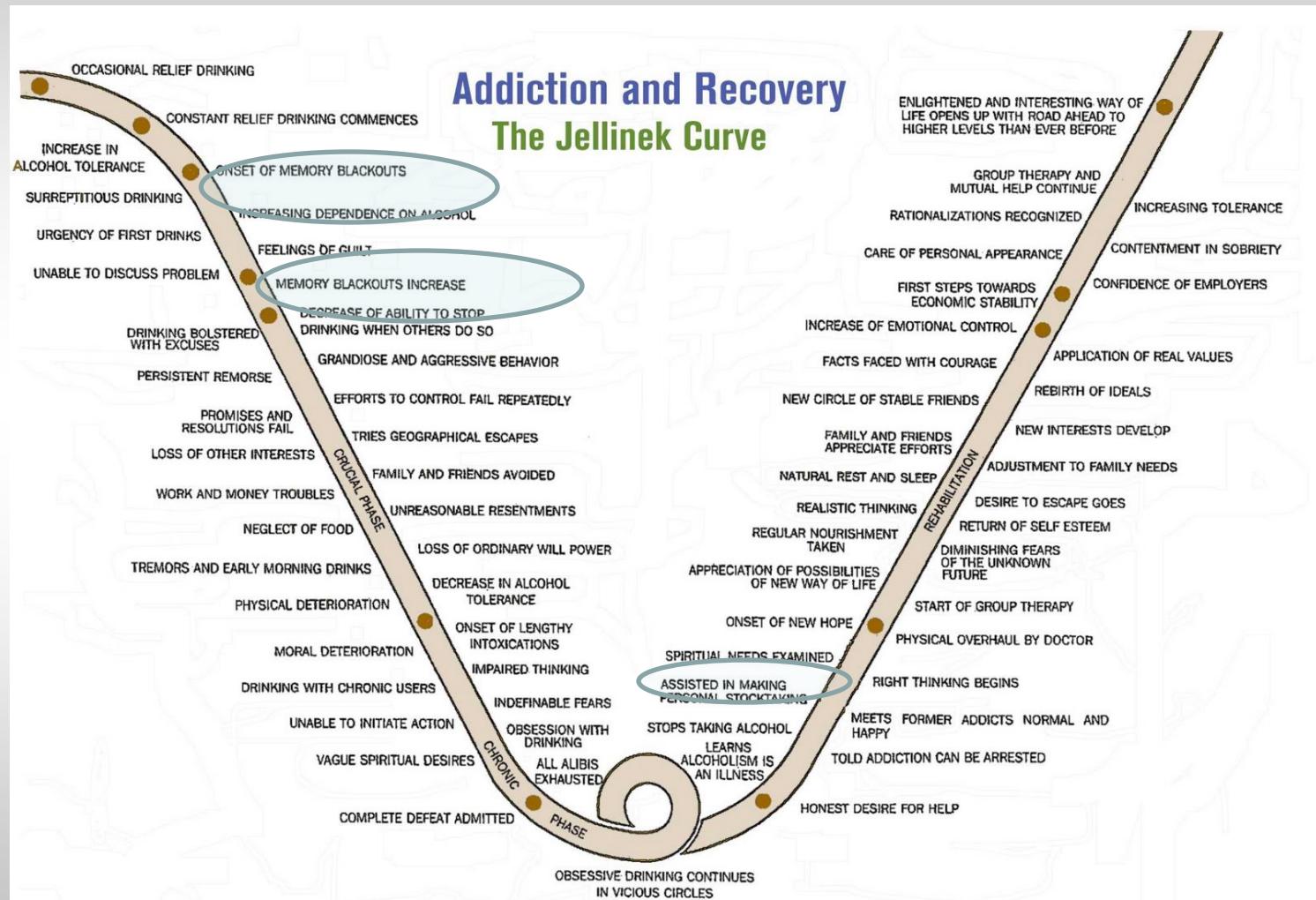


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## Addiction and Recovery

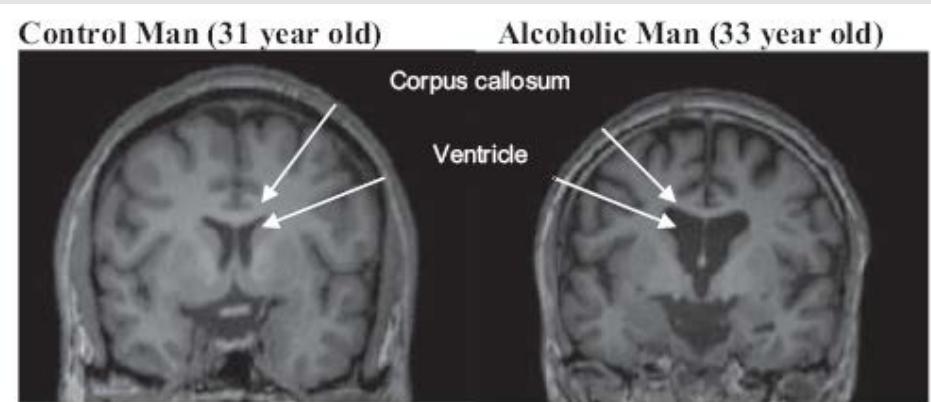
### The Jellinek Curve



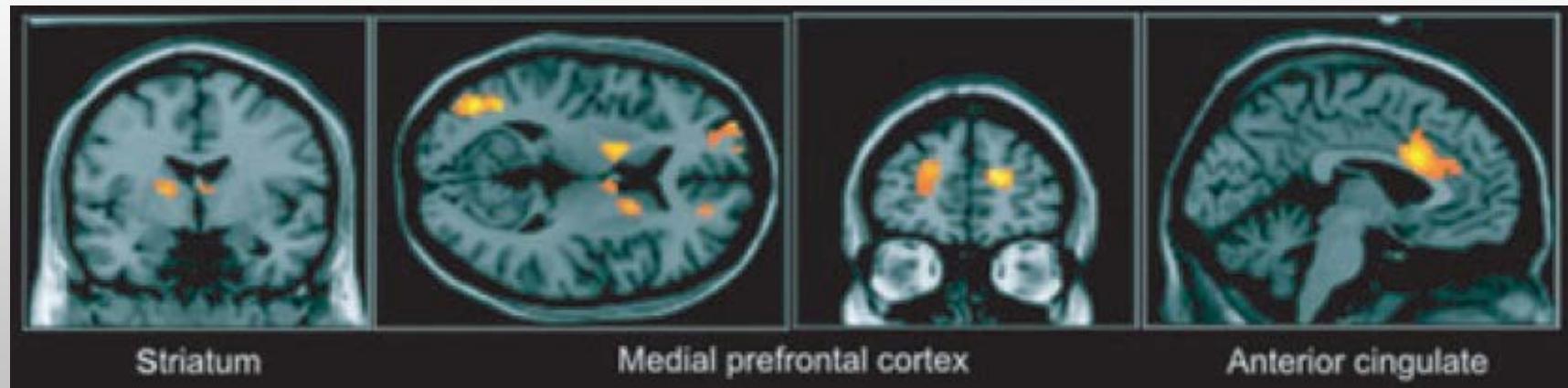
Jellinek, E. M., *The Disease Concept of Alcoholism*, Hillhouse, (New Haven) 1960.

# Alcohol dependence as brain disease

Structural brain damage



Brain function (fMRI)



# Das Suchthilfesystem

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- Komplexes gewachsenes Suchthilfesystem
- Die Akutbehandlung alkoholbezogener Störungen erfolgt in der Regel in internistischen Abteilungen von Allgemein-krankenhäusern oder suchtmedizinischen Abteilungen von psychiatrischen Kliniken.
- Die Postakutbehandlung erfolgt in der Regel in spezialisierten Suchtfachkliniken oder auch im ambulanten Rahmen durch Suchtberatungsstellen, Ambulanzen und niedergelassene Kollegen
- Zuweisung und Vermittlung in spezifische Behandlungsangebote durch Allgemein- und Fachärzte, Suchtberatungsstellen, ärztliche und psychologische Psychotherapeuten und innerbetriebliche Sozial- und Suchtberatungen

# Das Behandlungsangebot

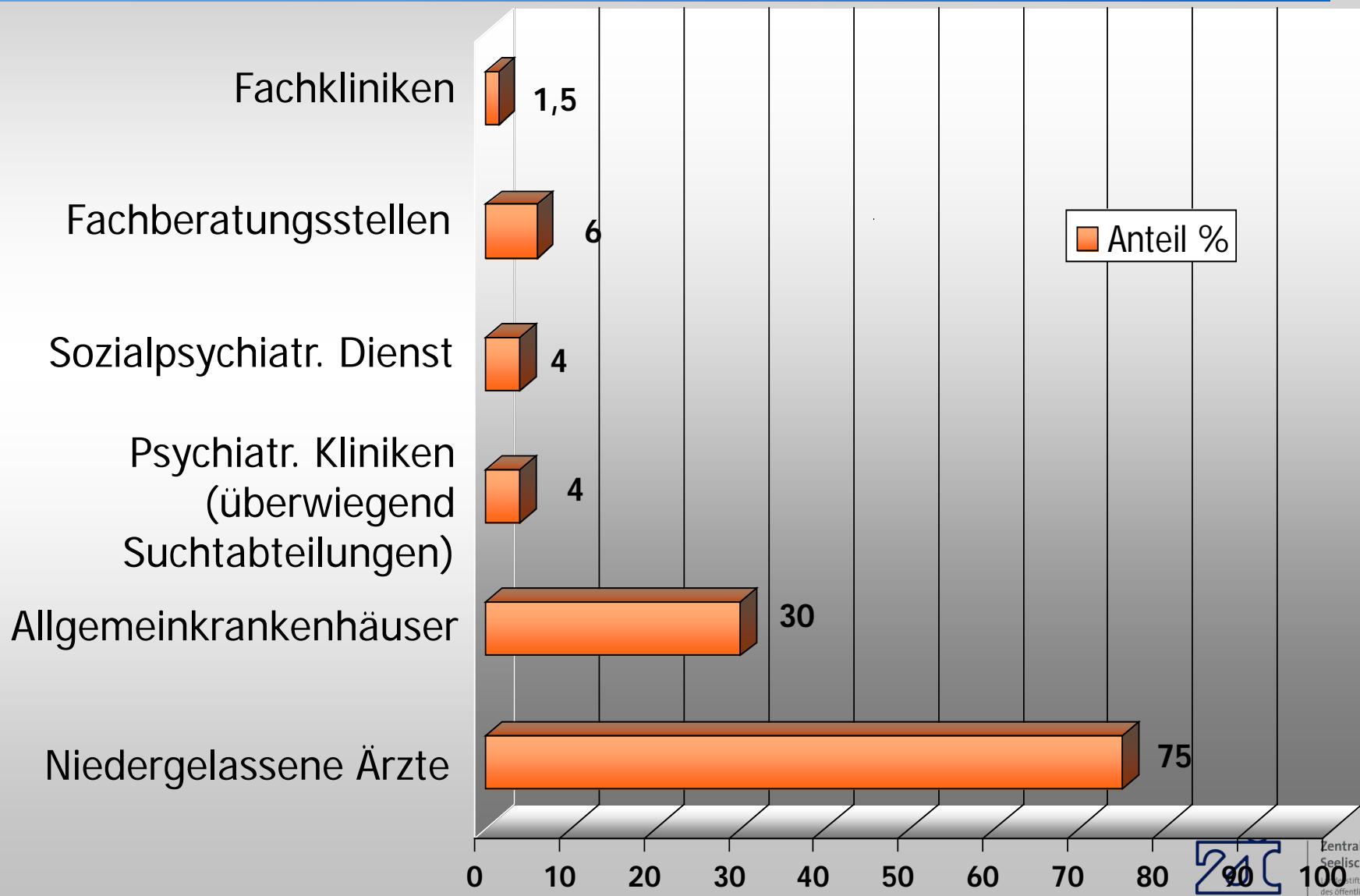
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- Vielfältige Ansätze
- Traditionelle Entwicklung von großer Bedeutung
- Häufig eklektische Ansätze
- Bewährung in der Praxis und in Nachbeobachtung der einzelnen Einrichtungen
- Kaum kontrollierte Studien
- Verfahren, deren Evidenz nachgewiesen ist, finden keine stringente Anwendung



# Anteil der Alkoholabhängigen in verschiedenen Einrichtungen

Wienberg 2002



# The treatment gap in Europe

- Schizophrenia: 18%
- Bipolar disorder: 40%
- Major depression: 45%
- Panic disorder: 47%
- Phobias: 62%
- Alcohol abuse/dependence: 92%

# Ansatzpunkte zur Optimierung

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- Qualifizierte Alkoholentzugsbehandlung
- Entwicklung von Suchthilfennetzwerken
- Etablierung evidenzbasierter Behandlungsansätze in der Praxis
- Entwicklung neuer therapeutischer Ansätze
- Erweiterung des Grundlagenwissens



# Ergebnisse nach stationärer Entwöhnungsbehandlung I

Langzeittherapie

Küfner & Feuerlein 1989

Langzeittherapie

Zemlin et al. 1999

Behandlung	Stationäre Entwöhnungsbehandlung 4 bis 6 Monate (21 Kliniken)	Stationäre Entwöhnungsbehandlung 6 Monate
der Zeitpunkt Nachuntersuchung	6 Monate	1 Jahr
Anzahl der Patienten	1.410	3.060
Abstinentzrate	67%	60%



# Ergebnisse nach stationärer Entwöhnungsbehandlung II

## Stationär/ Ambulante Therapie

*Mann & Batra 1993*

## Stationär/ Ambulante Therapie

*Mann et al. 1995*

Behandlung	6 Wochen stationär 1 Jahr ambulant	6 Wochen stationär 1 Jahr ambulant
der Zeitpunkt der Nachuntersuchung	1 Jahr	1 Jahr
Anzahl der Patienten	790	212
Abstinentzrate	68%	67%



# Kriterien des Landes BW für Kommunale Suchthilfenetzwerke

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- kooperative Mitwirkung aller an der Versorgung Beteiligter
- Niederschwellige wohnortnahe Zugangsmöglichkeit
- Interdisziplinäre Fallkonferenzen
- Angebot von Konsiliar- und Liaisondiensten
- Sicherstellung der zeitnahen Auf- bzw. Übernahme von Hilfesuchenden
- Verbindliche Mitwirkung mindestens einer Psychosozialen Beratungsstelle und einer suchtmedizinisch qualifizierten stationären (psychiatrischen) Akutbehandlungseinheit
- Verfügbarkeit von ambulanten, teilstationären und vollstationären Behandlungsmöglichkeiten
- Entwicklung einer einheitlichen Dokumentation
- Verbindlich praktizierte Kooperationsvereinbarungen
- Vereinbarung einer verbindlichen Finanzierungsregelung bei der Übernahme neuer Aufgaben



# Entwicklung von Suchthilfenetzwerken (Bsp. Landkreis Konstanz, Dr. Höcker)



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# Ärztliche Kurzintervention

## Wirksamkeit

- Info, Aufklärung und Ratschlag bis 30 Min Dauer:  
50% reduzieren Alkoholkonsum
- Kurzintervention / brief intervention:  
Effekte nach 48 Monaten noch nachweisbar

## Übersicht:

Küfner H: Ergebnisse von Kurzinterventionen und Kurztherapie bei Alkoholismus – ein Überblick. Suchtmedizin 2000; 181-192



# Wirksamkeit von Kurzintervention

Metaanalyse von Kaner et al. (2007)

*Cochrane Database Syst Rev*

- ▶ 21 Studien
- ▶ Konsumreduktion 41 g/Woche

Metaanalyse Moyer et al. (2002) *Addiction*

- ▶ Größere Effekte bei Ausschluss von Abhängigen

# Motivierende Gesprächsführung

„Motivational Interviewing“ (*Miller & Rollnick 1999*)  
Standardisierte Intervention für wenig Motivierte

## Ziele:

- Förderung von Veränderungsbereitschaft
- Aufbau von Vertrauen in die Selbstwirksamkeit
- Vereinbarung von gemeinsam festgelegten Zielen
- Anbindung

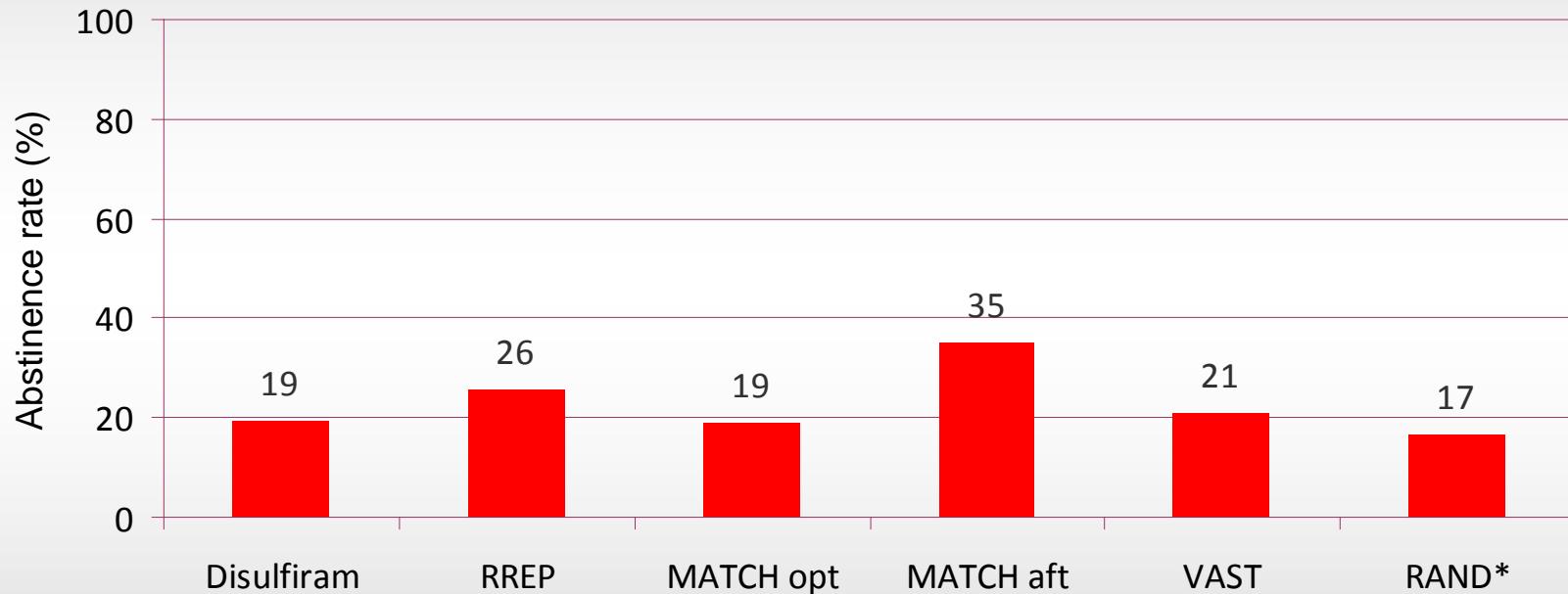


# Beispiele für Selbstmotivierende Aussagen

- Ich denke, das Problem ist größer als ich dachte
- Ich bin deswegen wirklich in Sorge
- Ich glaube es wird Zeit, über das Aufhören nachzudenken
- Ich glaube, ich kann es schaffen

# Kontinuierliche Abstinenz über 12 Monate

12-month drinking outcomes in multi-site treatment trials

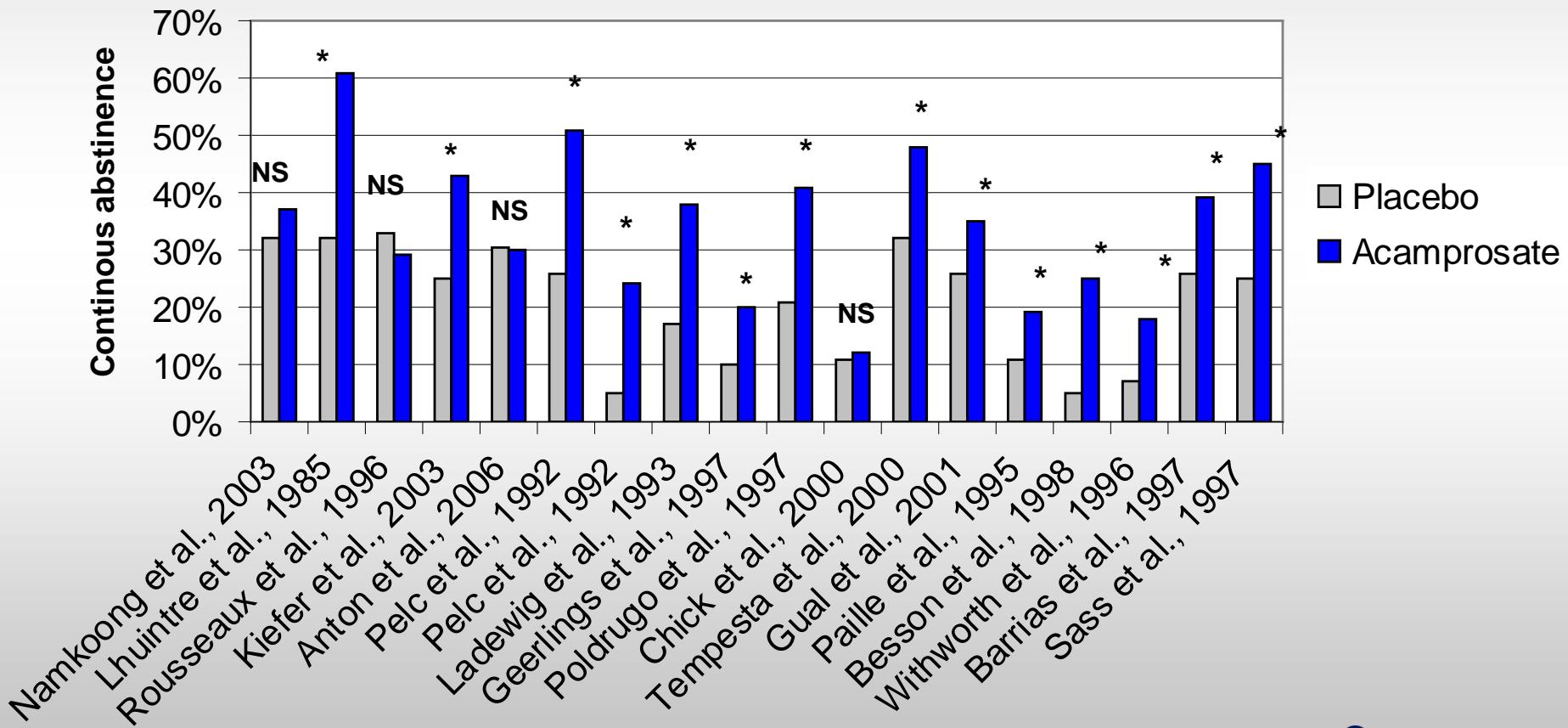


On average, >70% of patients relapse within the first 12 months after initiating an abstinence treatment plan

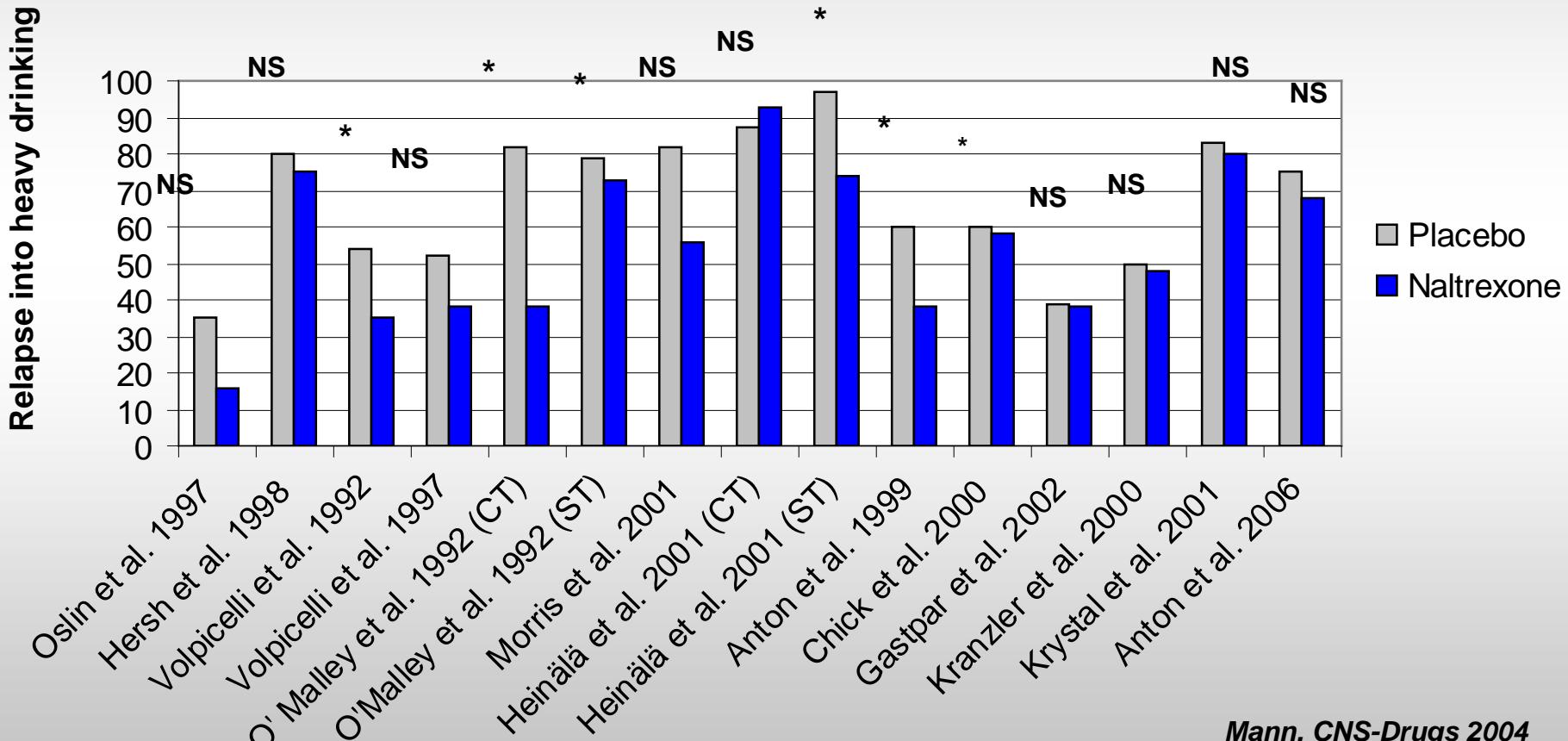
RREP (relapse, replication and extension project), VAST (veterans affairs study of treatment for substance abuse) and RAND were uncontrolled studies of treatment as usual; the two MATCH studies were randomised controlled; opt=outpatient; aft=aftercare

\*At least 12 months of continuous abstinence during 18-month follow-up period

# RCTs with Acamprosate vs Placebo



# RCTs with Naltrexone vs Placebo



Mann, CNS-Drugs 2004



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# Cochrane analysis: Acamprosate

- Metaanalysis
  - 24 RCTs, 6.915 Pat. Acamprosate
- Acamprosat reduces risk to 86% compared with Placebo (RR=0.86, CI = 0.81-0.91)
- „Effects of industry-sponsored trials RR 0.88 (95% 0.80 to 0.97) did not significantly differ from those of non-profit funded trials RR 0.88 (95% CI 0.81 to 0.96).“
- No indication for publication bias ( $p = 0.861$ )“

*Rösner et al. 2010*



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# Cochrane Analysis: Naltrexone

- Metaanalysis
  - 50 RCTs, 7.793 Pat. Naltrexone
- Naltrexone reduces the risk to 83% compared with Placebo (CI 0.76-0.90))
- „Effects of industry-sponsored studies, RR 0.90 (95% CI 0.78 to 1.05) did not significantly differ from those of non-profit funded trials, RR 0.84 (95% CI 0.77 to 0.91)
- No indication for publication bias ( $P = 0.765$ )“

*Rösner et al. 2010*



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# UK ALCOHOLISM TREATMENT TRIAL (UKATT)

- MET: 3 sessions
- Social Behaviour Network therapy (SBNT)  
8 sessions
- Pragmatic trial under conditions in which they would be applied in practice
- Economic evaluation measuring direct and indirect costs (i.e. reduction of future health care costs and other costs of society)

# UKATT: hypotheses and sample

Hypotheses	Sample
- Clients with low levels of readiness to change do better with MET	Alcohol dependence or abuse N = 742
- Clients with more symptom severity do better with SBNT	3 months follow-up: 93.0%
- Clients high in anger do better with MET	12 months follow-up: 83.2%



# Effectiveness of treatment (UKATT)

Hypotheses	Sample	Methods, measures	Results
(1) (see above)	<ul style="list-style-type: none"><li>• N = 742</li><li>• Mean age 41.6 (10.1)</li><li>• 74.1% male</li></ul> <p>Three months follow-up:</p> <ul style="list-style-type: none"><li>• 689 patients (93.0%)</li><li>• 12 months follow-up:</li><li>• 617 patients (83.2%)</li></ul>	<ul style="list-style-type: none"><li>• see above</li></ul>	<ul style="list-style-type: none"><li>• Both treatments led to similar improvements in reported alcohol consumption, dependence and problems, also in mental health</li><li>• No significant differences occurred between the two types of treatment (although sample size allowed for detecting even small effects) → SBNT equally effective</li></ul>

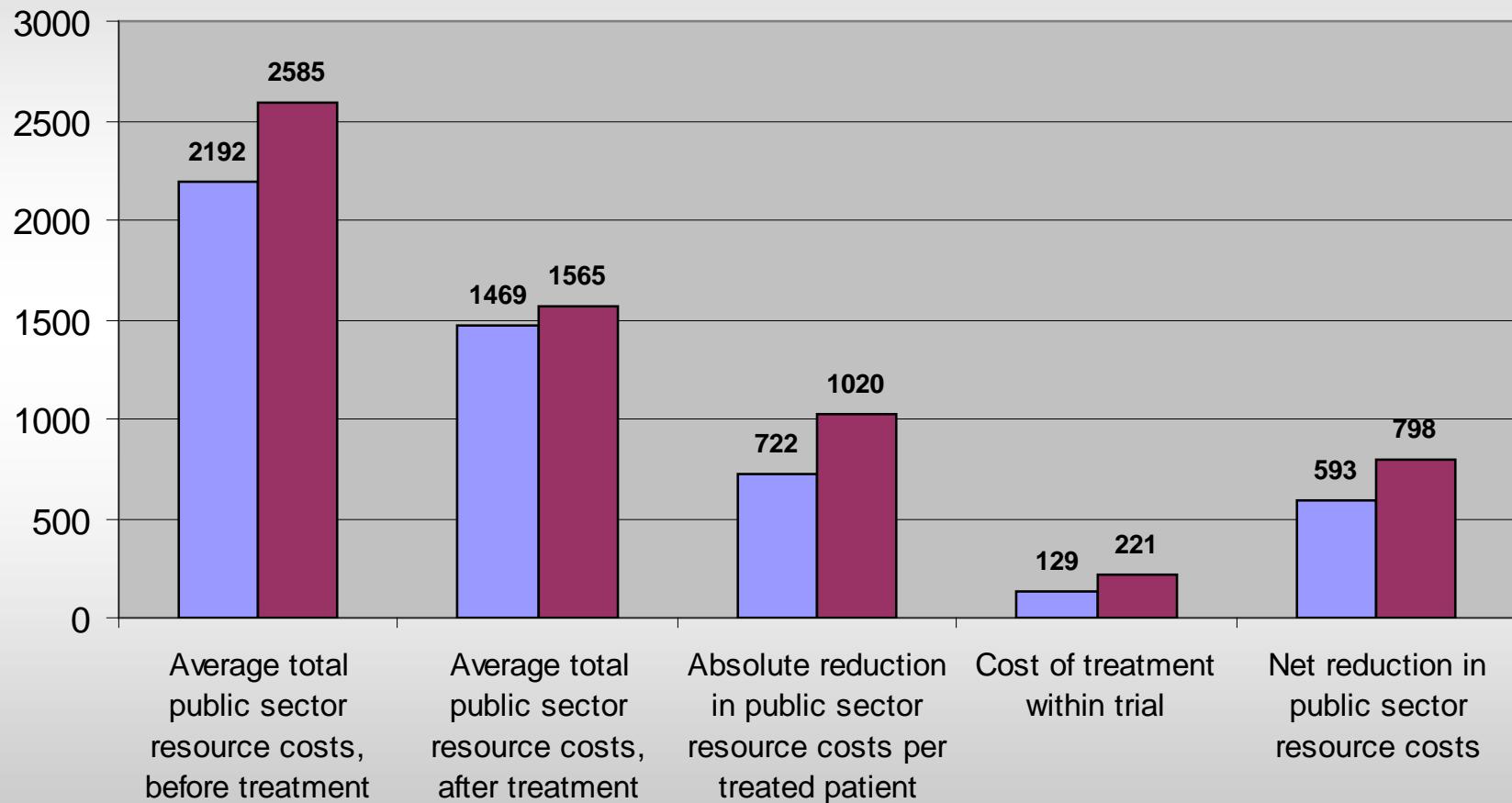
# Effectiveness of treatment UKATT

## Results

- Both treatments led to improvements in alcohol consumption, dependence and problems, also in mental health status
- No significant differences occurred between the two types of treatment
- NO MATCHING EFFECT

# Treatments costs and savings (£)

*Godfrey et al 2006*



■ Motivational group ■ Social Network Group

# Project MATCH - RESULTS

- Patients in all treatment modalities improved
- Drinking days per month fell from 25 to 6
- Drinks per day decreased from 15 to 3
- Decreased depression, alcohol related problems and use of other drugs
- Maintained for 12 months
- At 39 months outpatient sample maintained improvement



# Gliederung:

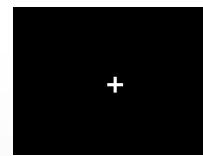
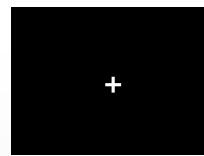
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# Alcoholic drinks



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# fMRI paradigm I



3 Alcohol stimuli  
(6.6 s)  
5 blocks of 19.8 s

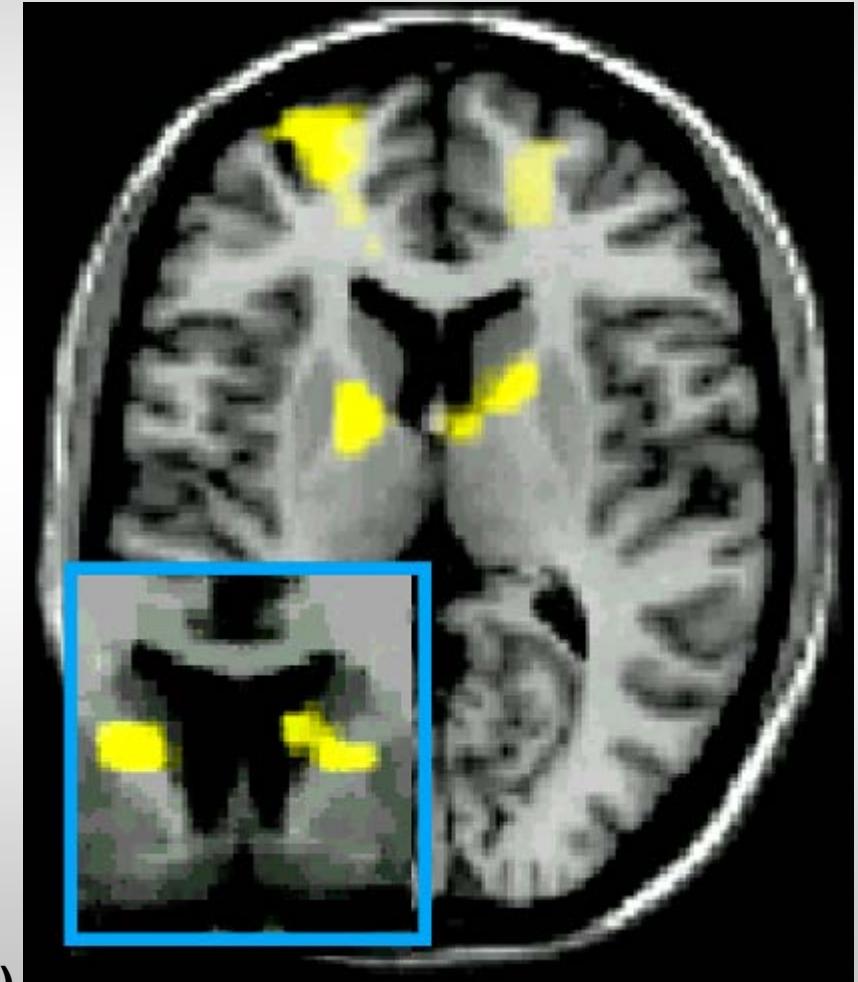
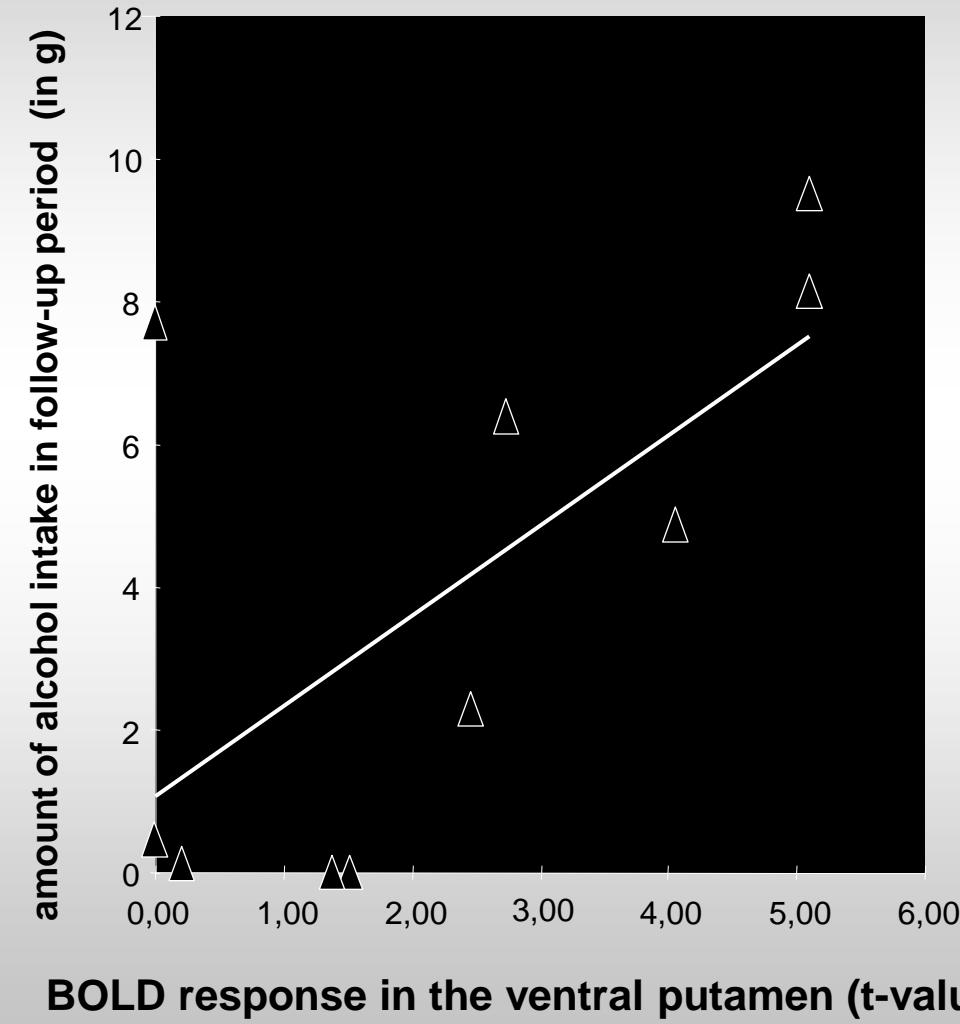
Fixation cross  
19.8 s

3 abstract stimuli  
(je 6.6 s)  
5 blocks of 19.8 s

Fixation cross  
19.8 s

3 neutral stimuli  
(6.6 s)  
5 blocks à 19.8 s

# Bold response and clinical outcome



BOLD response in the ventral putamen (t-value)

# Hypotheses

## fMRI cue reactivity & treatment response:

Activation (BOLD-response) of striatal-prefrontal circuits („reward system“) by appetitive alcohol cues

- is predictive of outcome
- can be reduced by naltrexone (not acamprosate),
- and by cue exposure treatment (CET)

# PREDICT Study / fMRI sub project

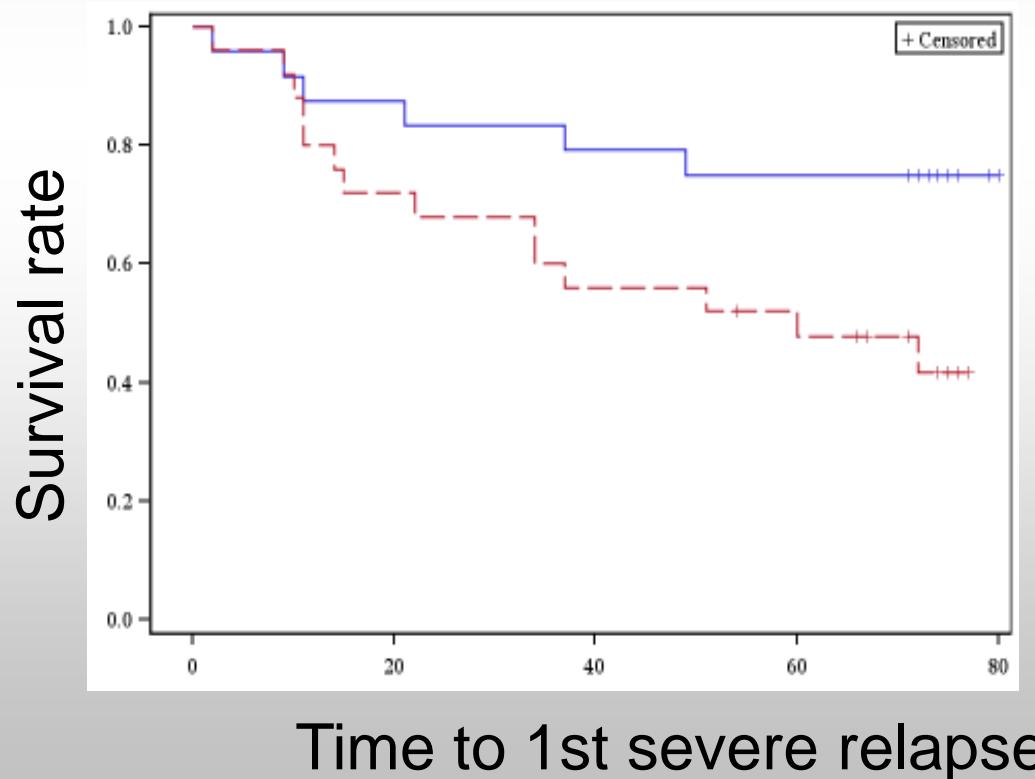
- 73 alcohol dependent patients
- 58 men, 15 women
- Age 43 ± 8 years
- 28 Acamprosate, 36 Naltrexone, 9 Placebo

Patients with 2 fMRI sessions:

N=49

# Cue reactivity and relapse risk

- Ventral striatum: association in between BOLD signal („alcohol-neutral“) and days to first severe relapse (Cox regression,  $p=.0011$ )



low cue-reactivity

high cue-reactivity

$p=.02$

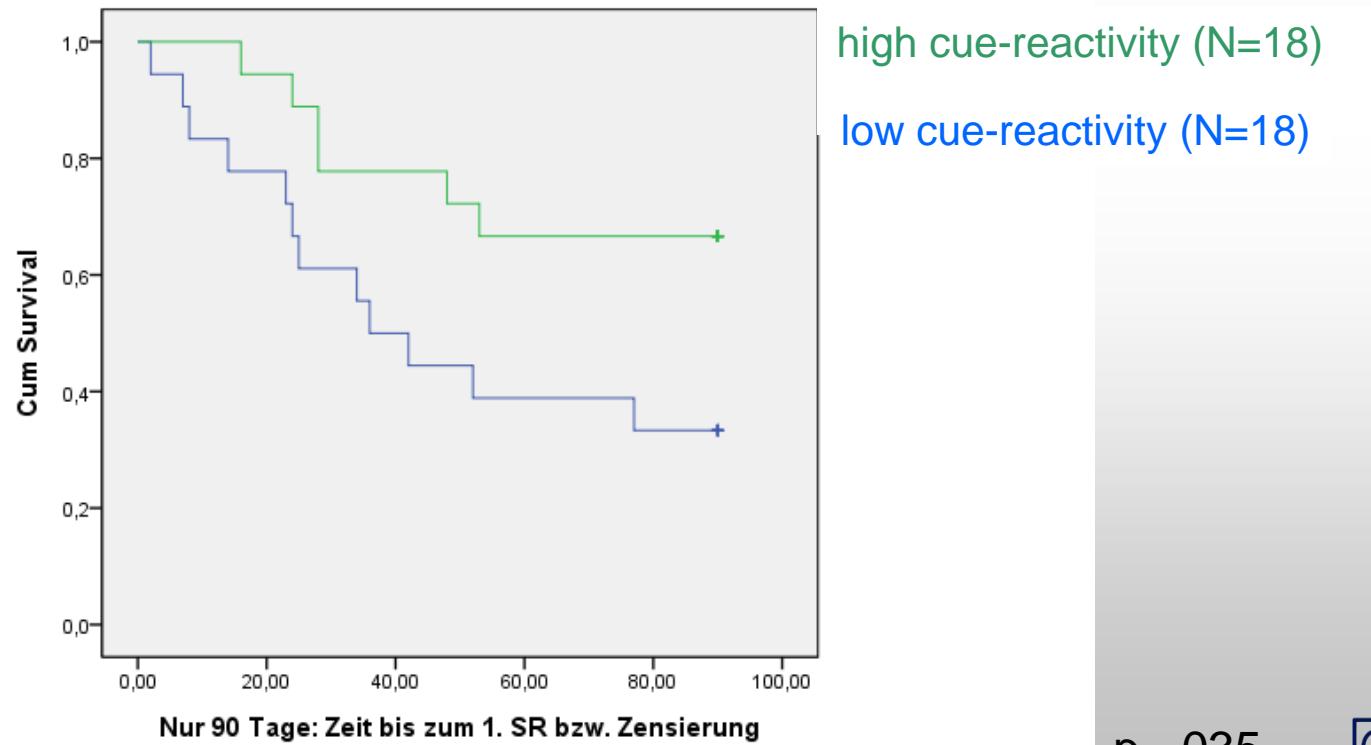
Time to 1st severe relapse



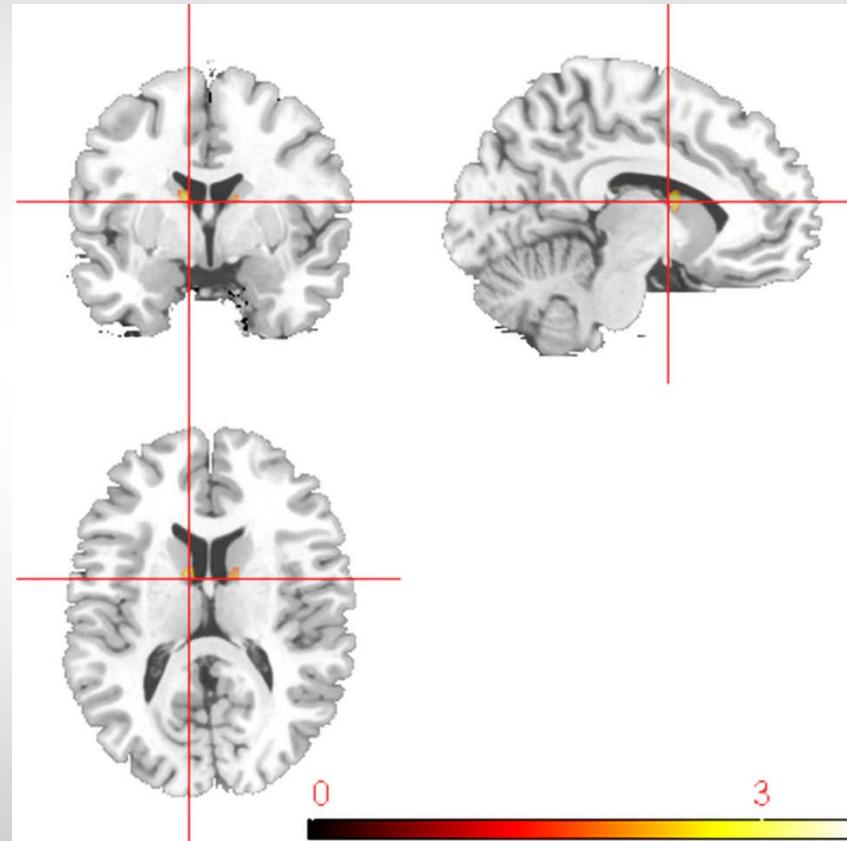
# Association medication – fMRI - relapse

- outcome: time until 1st severe relapse
- interaction medication x cue reactivity („alcohol-neutral“, ventral striatum),  $p = .025$

## Naltrexone



# Cue Exposure Treatment (Extinction training)



decrease of cue-induced activation  
(contrast “alcohol-neutral stimuli”) in  
alcohol-dependent patients (N=30)  
after three weeks of treatment

p<0.05 FWE-SV-corrected

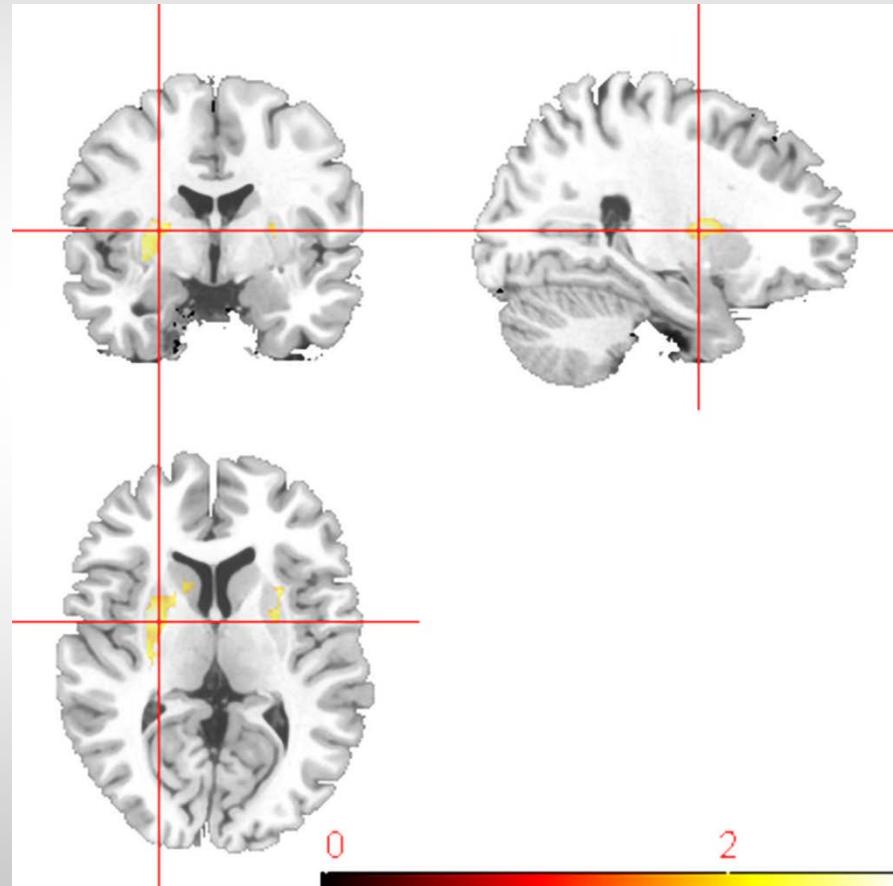
cluster size  $\geq 10$  voxels



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des Landes Nordrhein-Westfalen

Vollstädt-Klein, Löber, v.d. Goltz, Mann, Kiefer (2010)

# Cue Exposure Treatment (Extinction training)



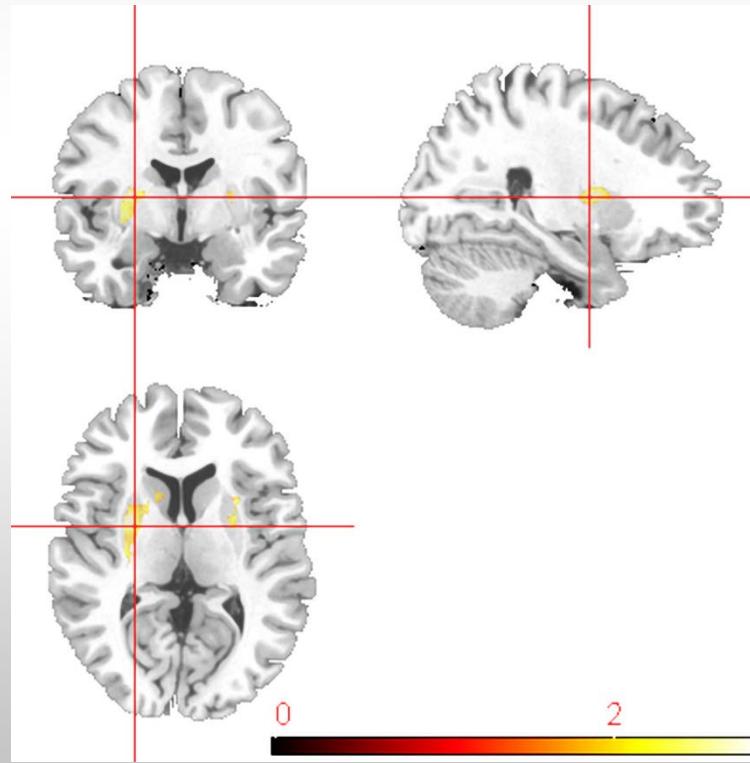
larger decrease of cue-induced activation (contrast “alcohol-neutral stimuli”) after three weeks of cue-exposure treatment ( $N=15$ ) compared to standard treatment ( $N=15$ )

$p < 0.05$  FWE-SV-corrected  
cluster size  $\geq 10$  voxels



# Extinction training (CET)

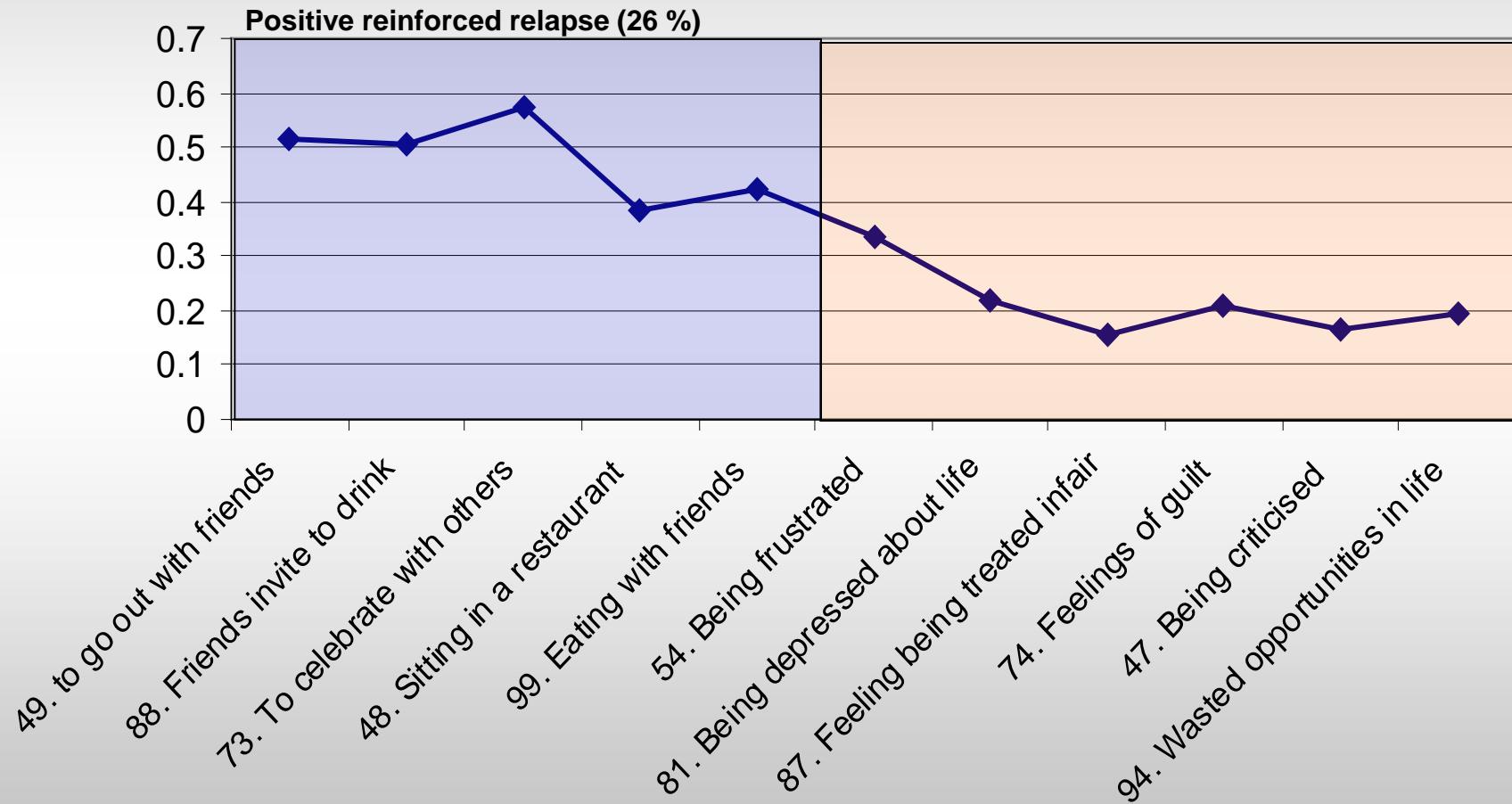
T1 vs. T2: larger decrease of fMRI cue-reactivity after three weeks of CET (N=15) compared to standard treatment (N=15)



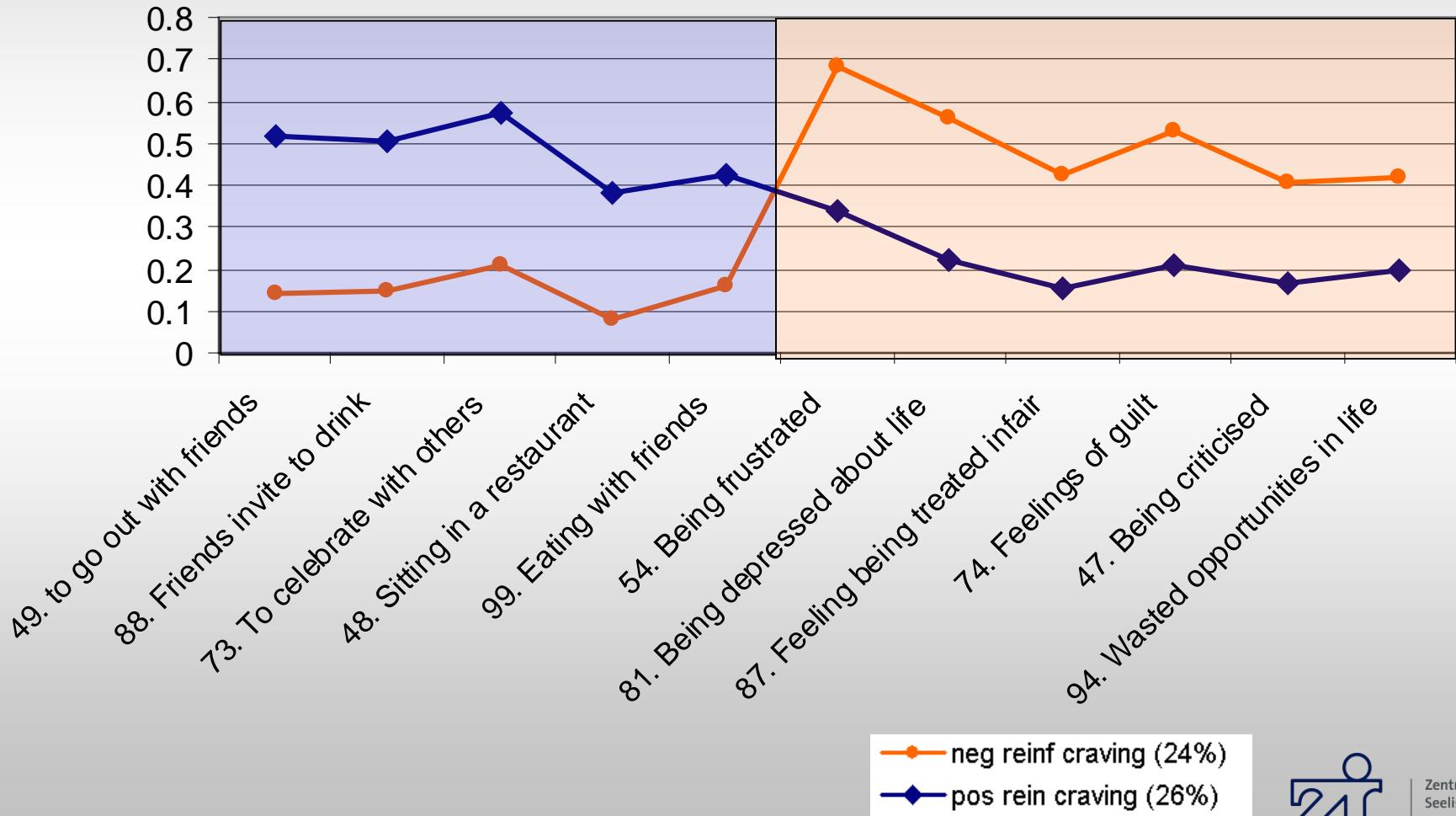
ventral / dorsal striatum:  $p < .05$  ROI-FWE-corrected; cluster size  $\geq 10$  voxels

# Latent class analysis IDS (4 classes)

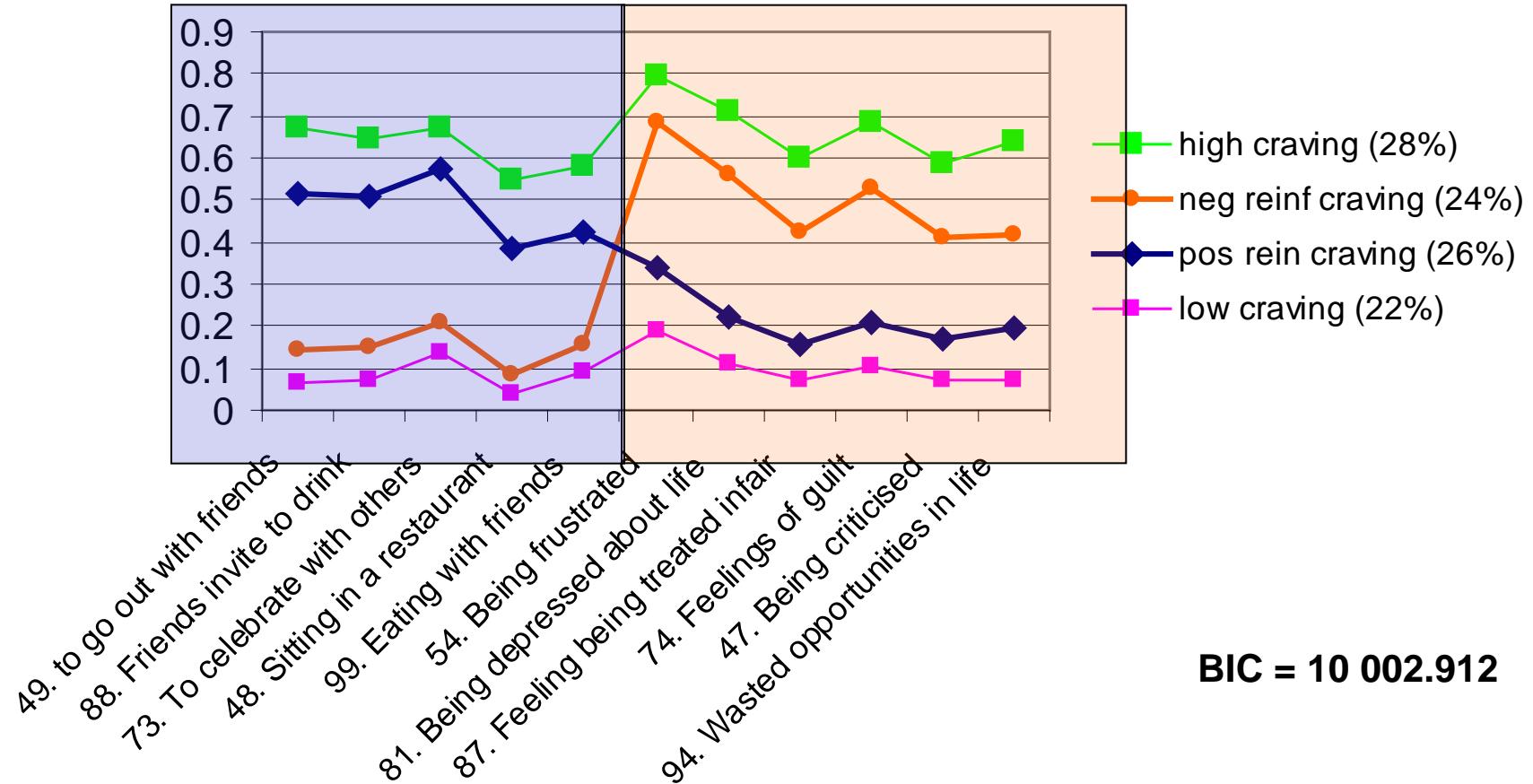
*Glöckner-Rist, Lemenager & Mann: Addictive Behavior , epub*



# Latent class analysis IDS (4 classes)

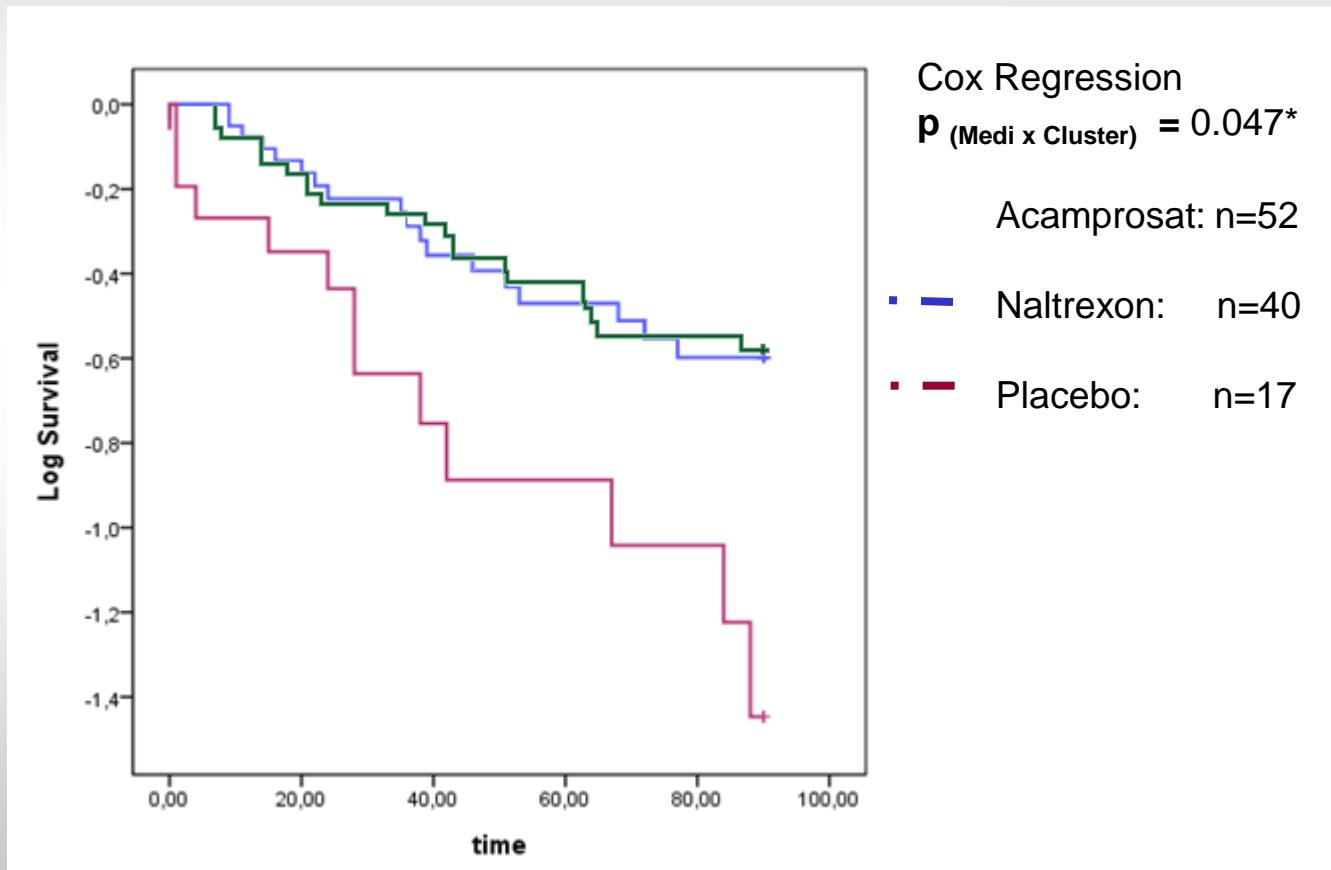


# Latent class analysis IDS (4 classes)

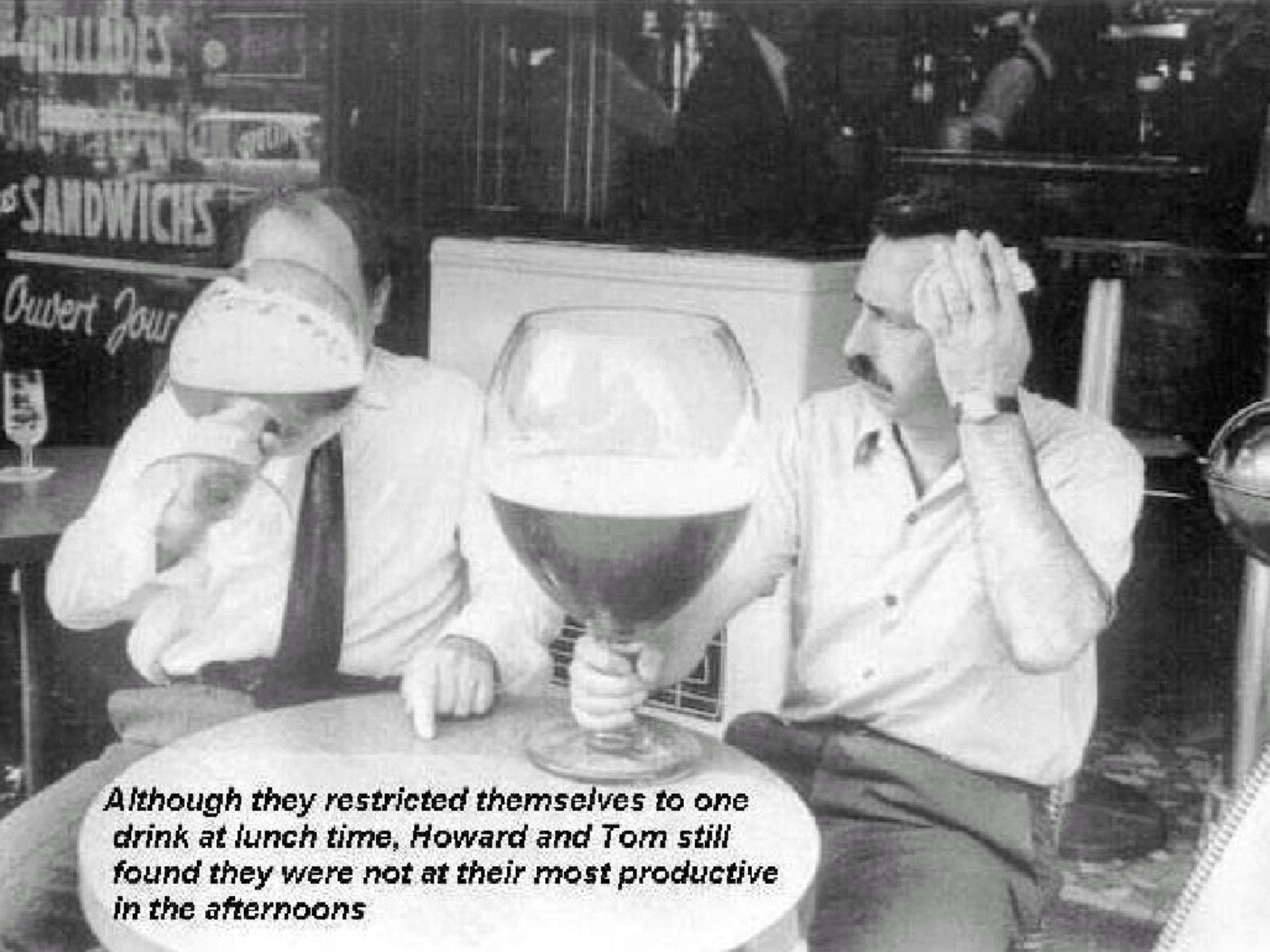


# Effect of pos. reinf. craving on relapse risk

Estimated Survival Function (COX: 2 factors + int.) for pos reinf Craver n=109  
(90 days after randomization)



$p$  (NALT vs. PLAC) = 0.017 (Log Rank)     $p$  (ACAM vs. PLAC) = 0.012 (Log Rank)



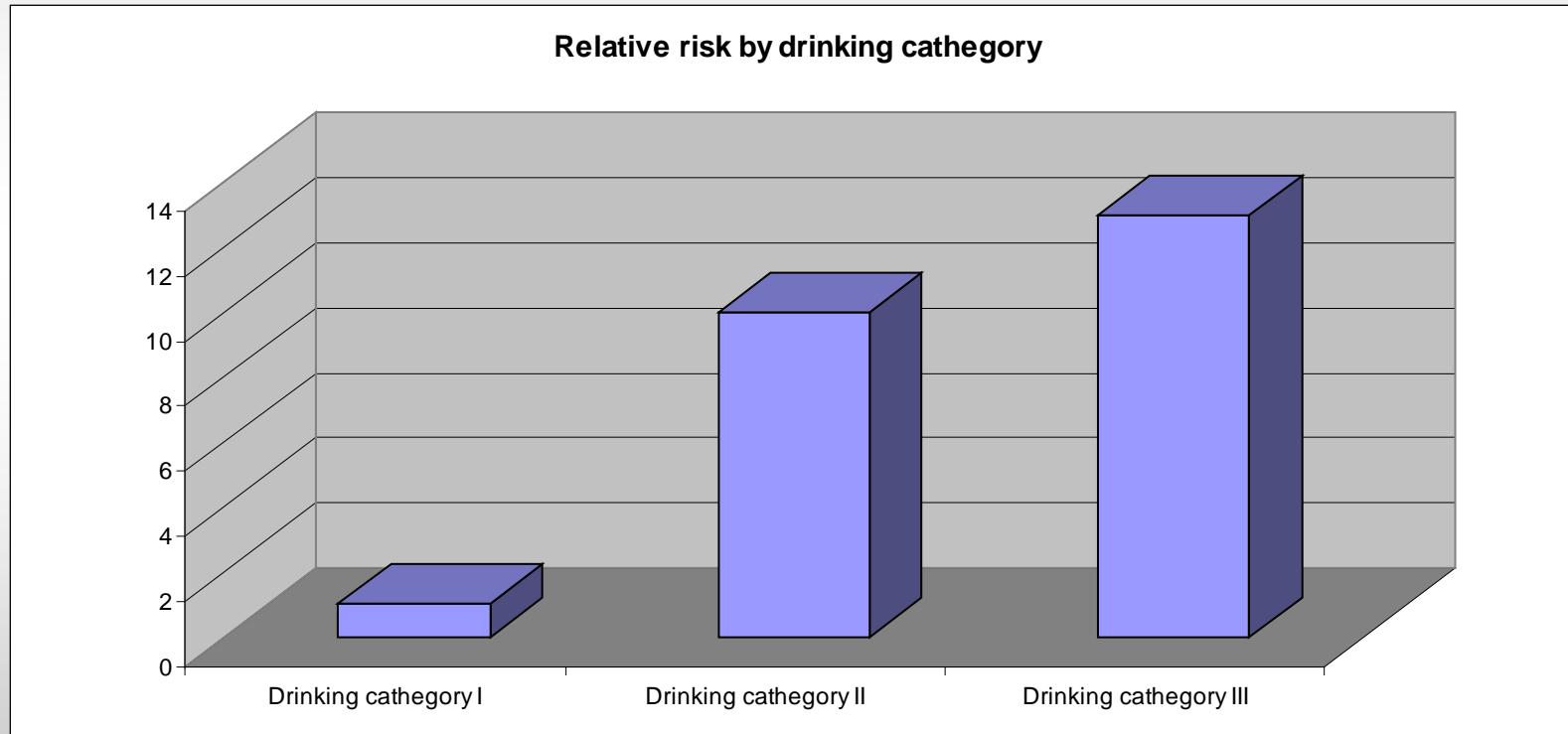
*Although they restricted themselves to one drink at lunch time, Howard and Tom still found they were not at their most productive in the afternoons*

# Gliederung:

1. “Krankheitslast” und Kosten
2. Hilfesystem, Psycho- und Pharmakotherapie
3. Aktuelle Entwicklungen
  - Individualisierte Therapie
  - Therapieziele  
(Abstinenz; Kontrolliertes Trinken; Risikoarmes Trinken)

# Trinkmengenreduktion als Therapieziel

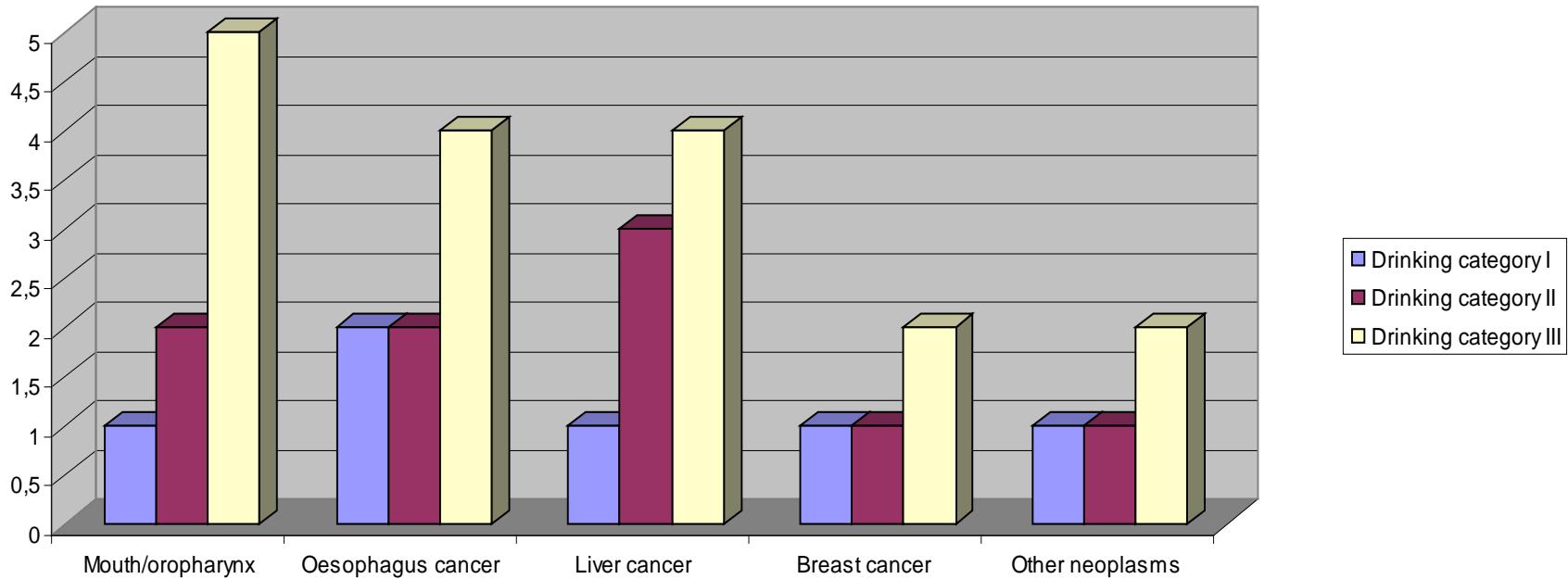
## Liver cirrhosis



\*WHO Global Status Report 2004

# Trinkmengenreduktion als Therapieziel

Relative risk by average drinking category



Drinking I: up to 20/40g (female/male) pure alcohol per day;

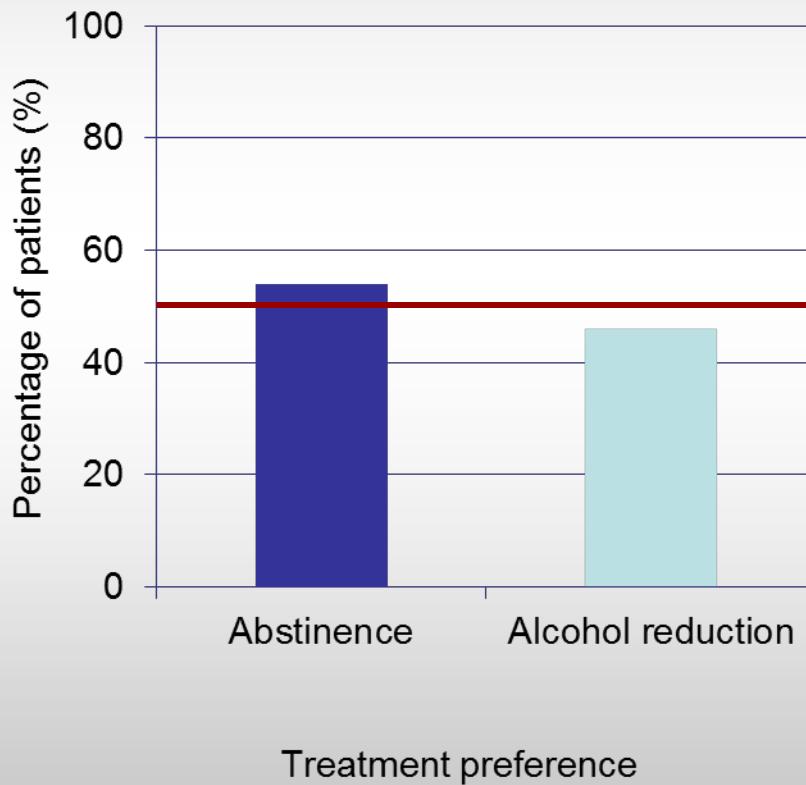
category II: 20/40 to 40/60 g pure alcohol per day

category III: more than 40/60 g pure alcohol per day.

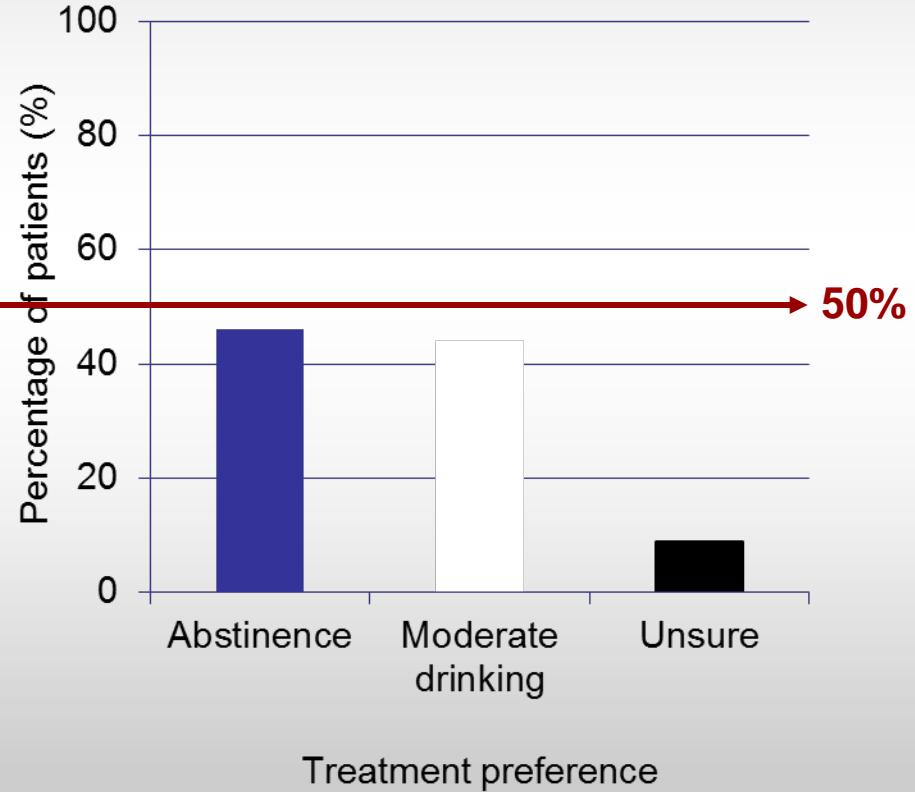
For comparison: a 75 cl. bottle of wine contains about 70 g of pure alcohol.

# Patient treatment goal preference

UK survey of patients with alcohol problems (n=742)



Canadian study of patients with chronic alcoholism (n=106)



# Movement between goals

## Initial goal preferences and changes at 4 weeks

### Initial goal preference:

Abstinence:  
(46.2%)

n=49

Reduction:  
(44.3%)

n=47

Uncertain:  
(9.4%)

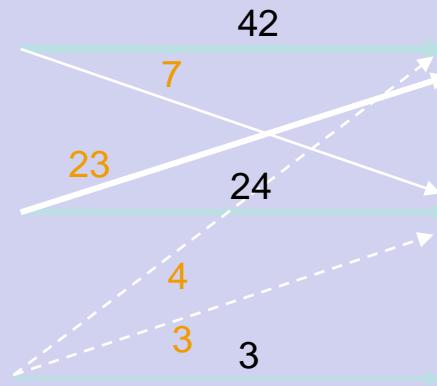
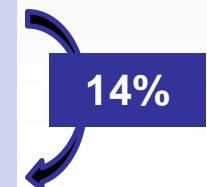
n=10

### At Week 4 (after 4 sessions):

n=69 (65%)

n=34 (32%)

n=3 (2%)



49% of patients with an initial preference for a reduction goal changed to an abstinence goal within 4 weeks

Many patients who initially have reduction as a treatment goal may decide to become abstinent after initial experience with reducing alcohol consumption

# NIAAA, 2005

This is the view of recently revised clinical guidelines issued by the **National Institute on Alcohol Abuse and Alcoholism** (2005):

“... The safest course is abstinence, and that would be the usual clinical recommendation. Still, it is best to determine individualised goals with each patient. Some patients may not be willing to endorse abstinence as a goal, especially at first. If an alcohol-dependent patient agrees to reduce drinking substantially, it is best to engage them in that goal while continuing to note that abstinence remains the optimal outcome.”

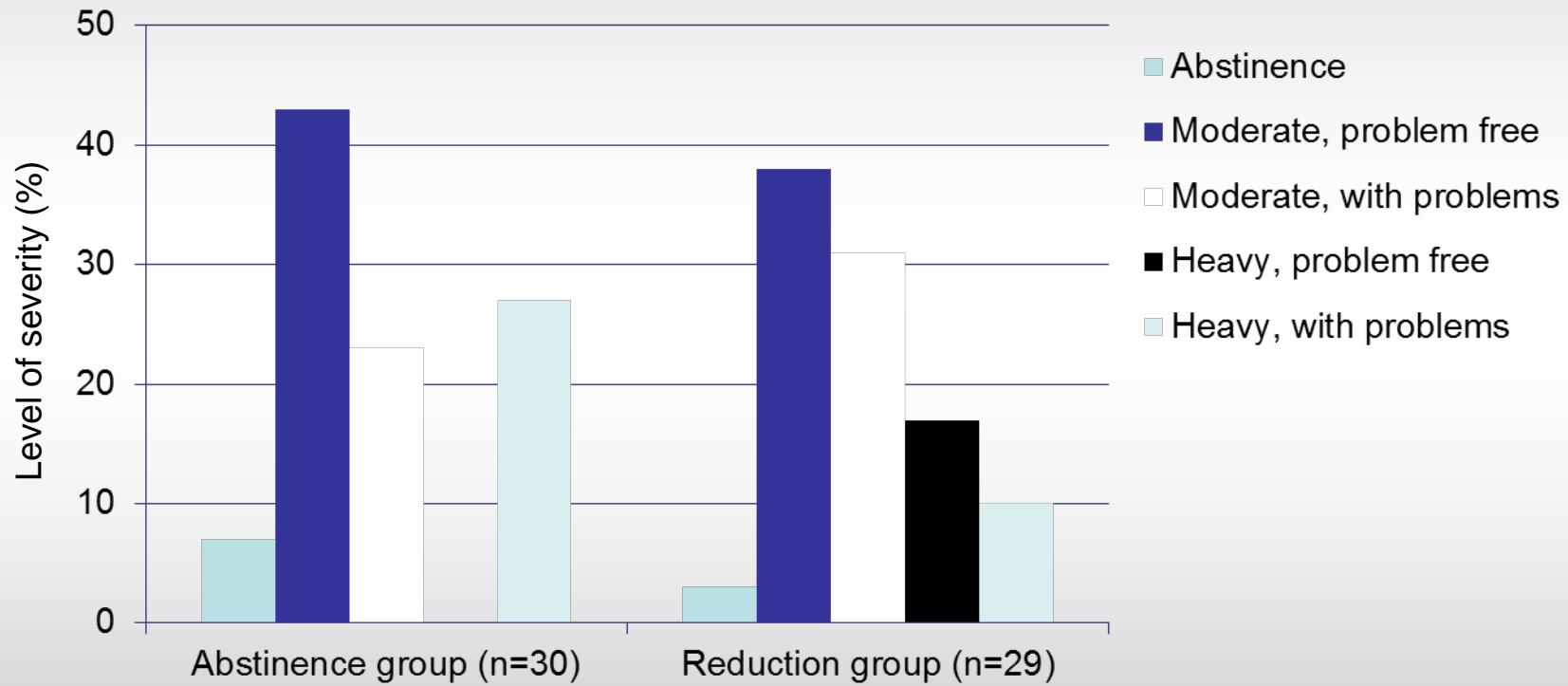
# Reducing alcohol consumption benefits health

“There are health benefits to the heavier drinker from reducing or stopping alcohol consumption. Even for chronic diseases, such as liver cirrhosis and depression, **reducing or stopping alcohol consumption is associated with rapid improvements in health**”

Alcohol in Europe: a public health perspective  
A report for the European Commission

# Reduction is an effective treatment outcome

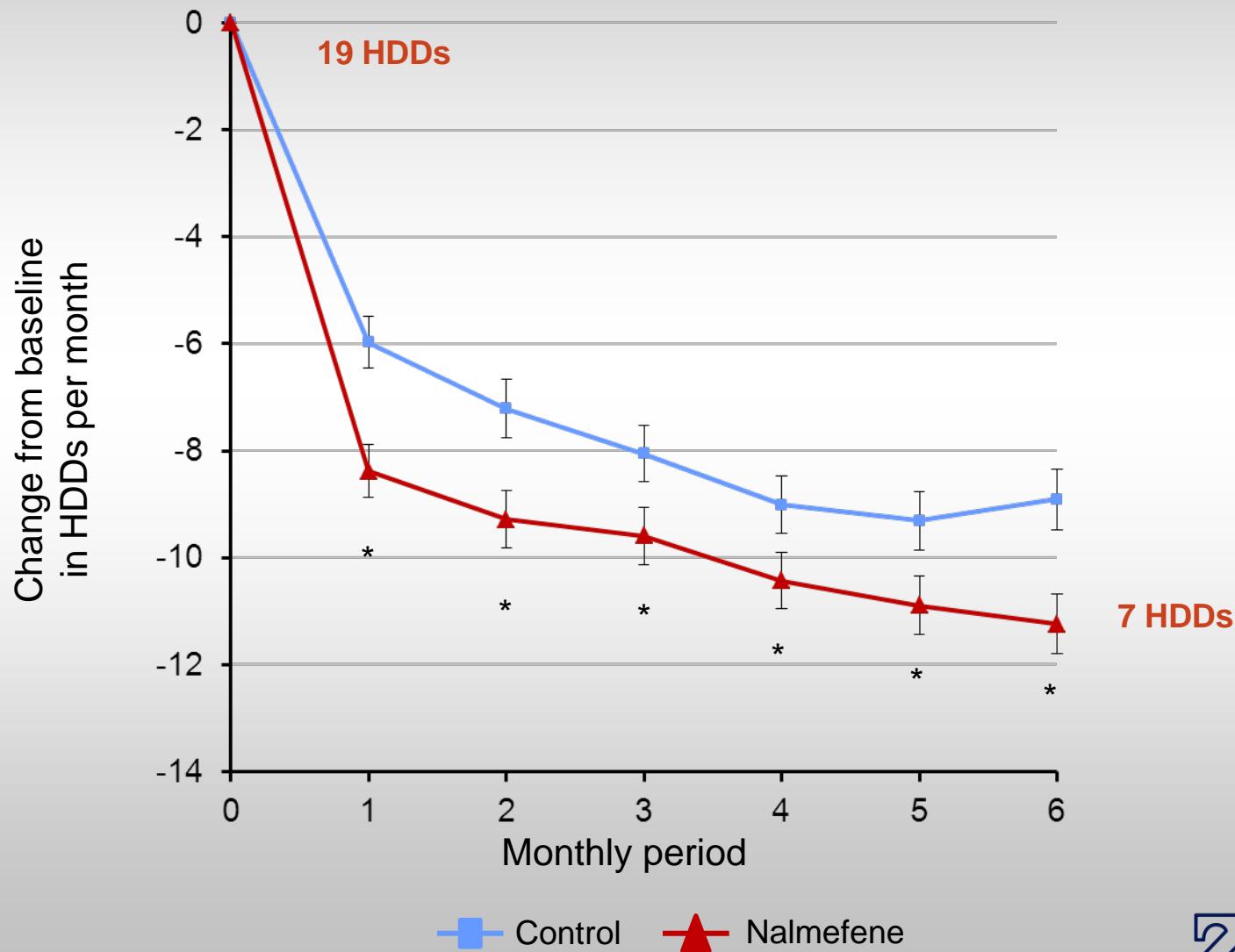
Drinking outcome at discharge (6 months after treatment)



While <10% of patients remained abstinent after 6 months of treatment, 40% reduced their drinking to moderate, problem free levels

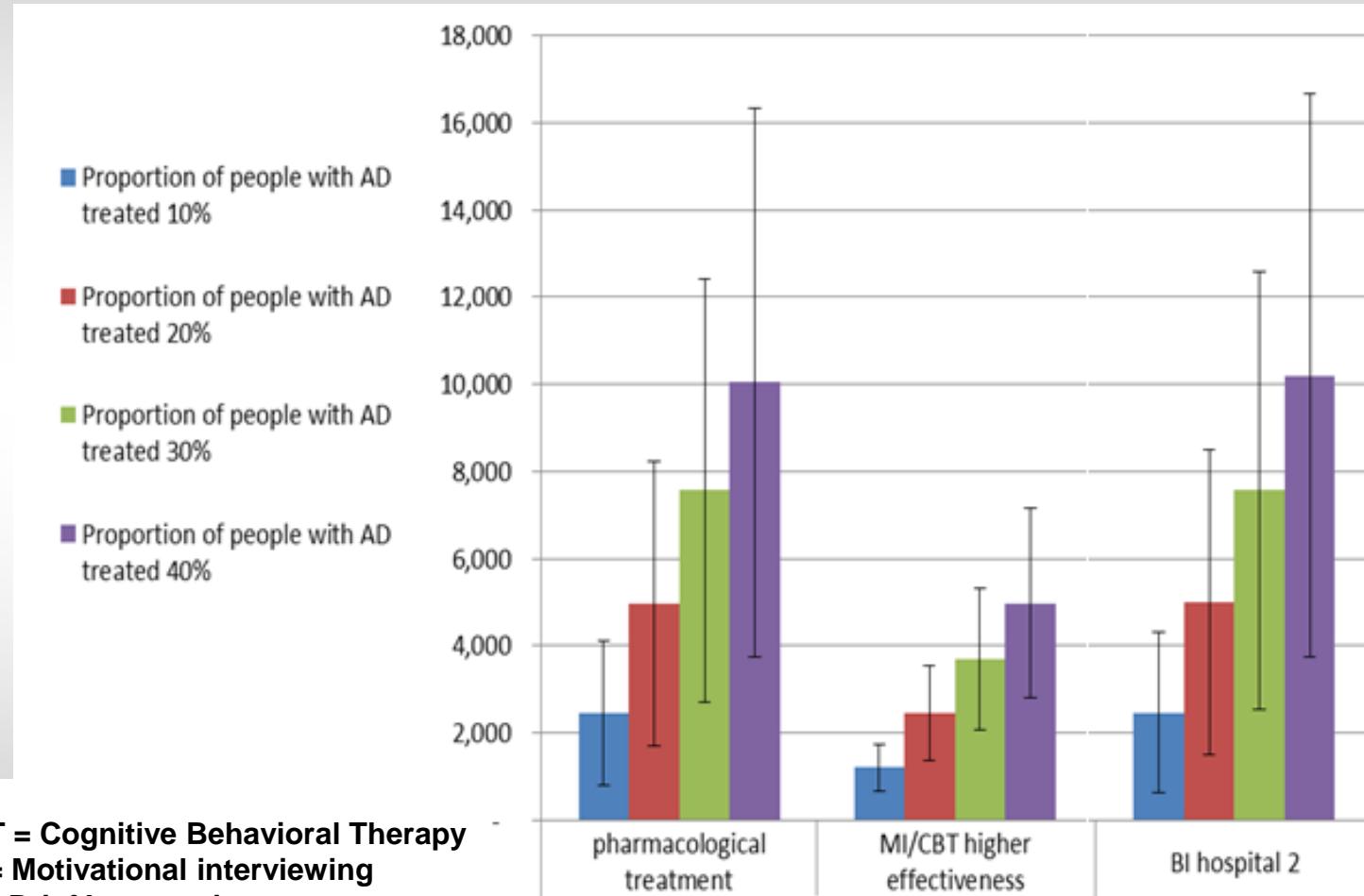
# RCT: Nalmefene vs placebo (N=605)

Mann et al. Biol. Psychiatry (epub ahead of print)



\*p<0.05 vs placebo; data show adjusted mean  $\pm$  SE

# Estimated number of deaths avoided over one year by increasing treatment rates for AD in the EU in 2004 – men



CBT = Cognitive Behavioral Therapy

MI = Motivational interviewing

BI = Brief Interventions

# Gliederung:

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  - Therapieziele  
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ALCOHOLISM: CLINICAL AND EXPERIMENTAL RESEARCH

Vol. 34, No. 11  
November 2010

# Efficacy and Safety of Baclofen for Alcohol Dependence: A Randomized, Double-Blind, Placebo-Controlled Trial

SEARCH

James C. Garbutt, Alexei B. Kampov-Polevoy, Robert Gallop, Linda Kalka-Juhl, and  
Barbara A. Flannery

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**Background:** Recent clinical trials and case-reports indicate that baclofen, a GABA<sub>B</sub> agonist, may have efficacy for alcohol dependence. Baclofen has been shown to enhance abstinence, to reduce drinking quantity, to reduce craving, and to reduce anxiety in alcohol-dependent individuals in 2 placebo-controlled trials in Italy. However, the clinical trial data with baclofen is limited. The purpose of the present study was to test the efficacy and tolerability of baclofen in alcohol dependence in the United States.



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des öffentlichen Rechts

# Baclofen (GABAB Agonist)

bessert Entzug

N = 5

*Addolorato et al. 2002*

stützt Abstinenz

N = 39

gebessert:  
14/20 Baclofen  
4/19 Plazebo

*Addolorato et al. 2002*

stützt Abstinenz

N = 12

12 Wochen

30 mg

*Flannery et al. 2004*

stützt Abstinenz  
(Pat. mit Leberzirrhose)

N = 84

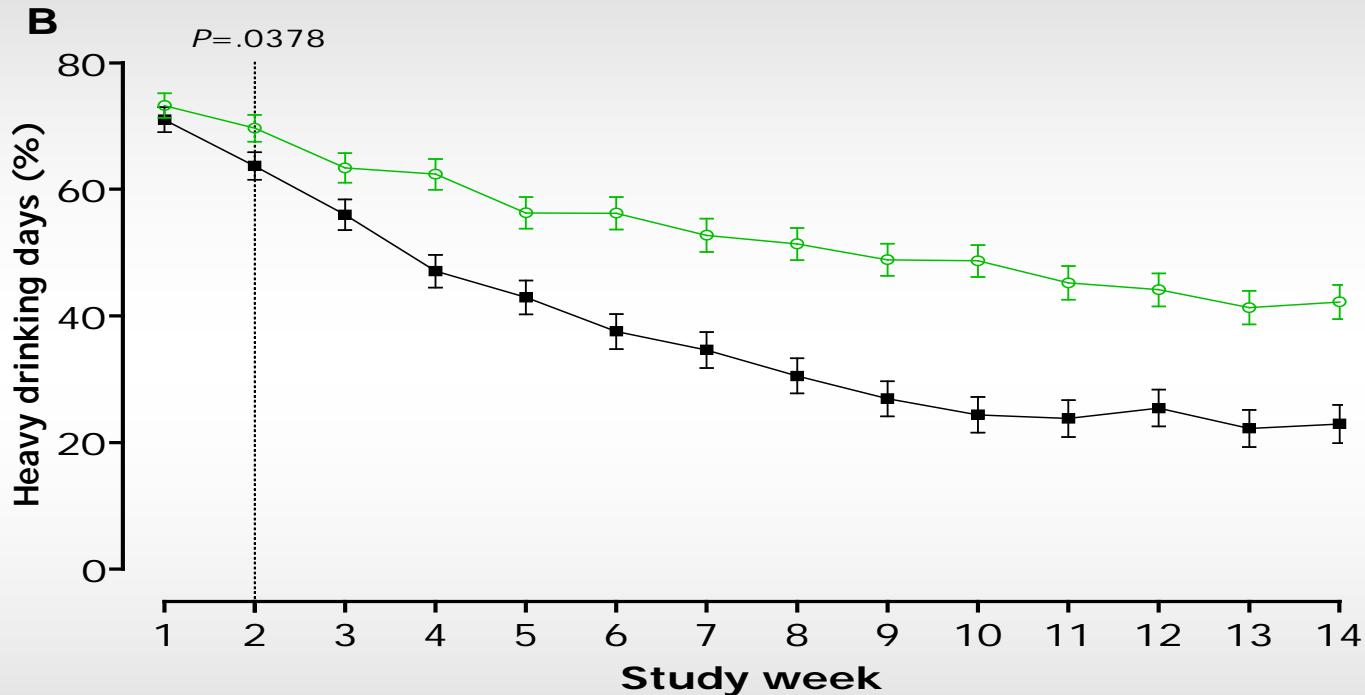
12 Wochen

gebessert:  
30/42 Baclofen  
13/42 Plazebo

*Addolorato et al. 2007*



# Percentage of Heavy Drinking Days from Study Week 1



## Number of participants left

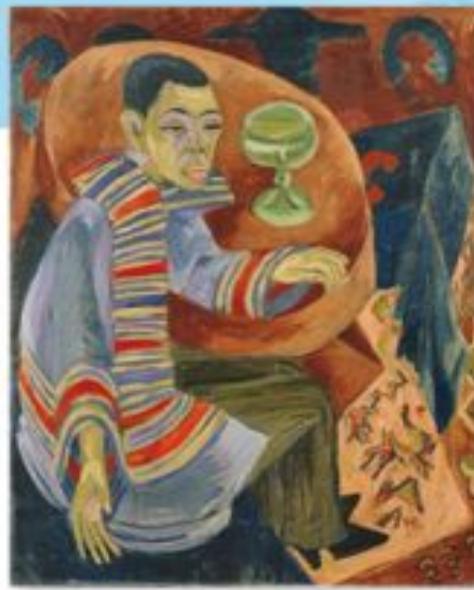
Topiramate	179	173	161	156	145	140	134	130	124	121	119	117	114	113
Placebo	185	183	182	181	179	176	167	164	159	153	150	149	146	144

The pre-specified approach of not imputing missing data is illustrated; data were analyzed using a repeated-measures mixed model.

# Alkohol und Tabak

Grundlagen und Folgeerkrankungen

Herausgegeben von  
Manfred V. Singer  
Anil Batra  
Karl Mann



 Thieme



Zentralinstitut für  
Seelische Gesundheit  
Landesstiftung  
des öffentlichen Rechts

# Diagnose der Alkoholabhängigkeit nach ICD 10

(mind. 3 der folgenden 6 Kriterien sind nachweisbar):

- Starker Wunsch (oder Zwang), Alkohol zu konsumieren
- Minderung der Kontrolle über Beginn, Umfang und Beendigung des Konsums von Alkohol
- eine Toleranzentwicklung
- das Auftreten von Entzugserscheinungen
- die Vernachlässigung anderer Neigungen und Interessen zugunsten des Alkoholkonsums
- die Fortführung des Alkoholkonsums trotz eindeutig eingetretener körperlicher, psychischer oder sozialer Folgeschäden



# Ein „schädlicher Gebrauch“ liegt vor bei Gesundheitsschädigungen infolge Alkoholkonsums

- psychische Gesundheitsschädigung
- (z.B. kognitive Störung oder depressive Episode)  
physische Gesundheitsschädigung
- (z.B. Gastritis oder Pankreatitis)
- Kriterien einer Abhängigkeit werden nicht erfüllt.



# **DSM-IV criteria for substance abuse**

**A. Substance use leading to impairment or distress  
(by one (or more) within a 12-month period:**

- Substance use resulting in a failure to fulfill major role obligations at work, school or home
- Substance use in situations in which it is physically hazardous
- Substance-related legal problems
- Substance use despite social or interpersonal problems

**B. The symptoms have never met criteria for substance dependence**

