MAR and ADHD :
Diagnosis and treatment of ADHD
in methadone maintenance treatment patients

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definitions

medication-assisted rehabilitation (MAR)

opioid dependence

methadone maintenance treatment (MMT)

psychiatric comorbidity

ADHD

severe psychiatric comorbidity is the rule in MMT patients

all major psychiatric disorders are highly prevalent in methadone maintenance treatment (MMT) patients:

Brooner, 1997: *any* psychiatric comorbidity: 47%

Ross, 2001: severe psychological distress: 49%

- mood disorders
  - especially depression
- anxiety disorders
  - especially PTSD
- psychotic disorders
- personality disorders
  - especially AntiSocial Personality Disorder

Brooner e.a. *Archives of General Psychiatry* 1997: 54: 71-80
Ross e.a. *Addiction* 2001; 96: 815-22

ADHD & SUD : prevalence

bidirectional overrepresentation of ADHD and SUD
among subjects with these disorders

ADHD prevalence clearly *increased* among SUD patients

adults with ADHD + SUD are at risk for

- *other psychiatric comorbidities*
- *a longer course of SUD*

ADHD prevalence even *more clearly increased*
among SUD populations with more severe / more chronic disorders
(e.g. inpatient populations)

prevalence of ADHD in different Substance Use Disorders (SUD)

	Alcohol	Cocaine	Opiates	Polydrug
Studies	3	3	3	2
Total N	120	450	306	157
% ADHD	33-71	10-35	**5-22**	17-21

Wilens, *Psych Clinics of N America* 2004; 27: 283-302

Prevalence of ADHD in methadone maintenance treatment (MMT) patients

	N	Assessment	Childhood ADHD	Current ADHD
Eyre & Rounsaville (USA, 1982)	157	retrospective diagnosis	**22**	
King & Brooner (USA, 1999)	125	DIS-4.0	**19**	**17**
Modestin (Switserland, 2001)	100	clinical questionnaire	**11**	
Davids & von Bunau (Germany, 2005)	109	WURS-k		**29**
Kolpe (USA, 2007)	687	ADDS (Att Def Dis Screen)		**19**
Arias (USA, 2008)	1761	SSADDA (semi-struct ass Drug dep & alc)	**5.2**	**4.2**

Characteristics of MMT patients with ADHD

few studies, limited data

Eyre, 1982: 157 patients, 22% with retrospective diagnosis of ADHD

- indications of more severe addiction
- more mood disorders
- more antisocial personality disorders

King, 1999 best documented study to date
125 patient, 16.7% with adult ADHD

- no difference in N life-time substance use disorders
- more DSM-IV Axis I psychopathology
- more DSM-IV Axis II pathology, especially antisocial personality disorders
- *no difference in treatment outcome*
- *(no specific treatment of ADHD)*

Characteristics of MMT patients with ADHD

Modestin, 2001: 100 patients, 11% childhood ADHD

47% Conduct Disorder

(7 patients childhood ADHD + CD, 4 patients childhood ADHD – CD)

- earlier start of drug use – drug abuse
- more personality psychopathology
- ADHD alone does not predispose to the development of opioid dependence

Davids, 2004: 109 patients 29% childhood ADHD

- no differences in substance use disorder characteristics
- more antisocial behaviour

Characteristics of MMT patients with ADHD

Kolpe, 2007: 687 patients, 19% with current ADHD symptoms (screening)

- less abstinence after 9 months of treatment

Arias, 2008: 1761 patients with life-time diagnosis of opiate and/or cocaine addiction

5.2% childhood ADHD, 4.2% current ADHD

CD prevalence 3.4% (in ADHD+ patients: 14.1%)

(lower prevalence than in other studies: not a treatment-seeking population)

- earlier age of first substance use *
- more substance use disorder diagnoses *
- more psychiatric diagnoses
- more hospitalisations, more attempted suicide

(positive association after controling for conduct disorder)

Not by methadone alone - study

Psychiatric comorbidity in chronic MMT patients

location: **Kanaaldijk**, Eindhoven, the Netherlands

study period: march 2005 – december 2005

193 study participants (M 161, F 32)

ADHD assessment

screening

DSM-IV ADHD Rating scale (Dupaul) patient version

assessment

semi-structured interview for ADHD (Kooij)

- all patients
- partners (19 patients)
- family members (50 patients)

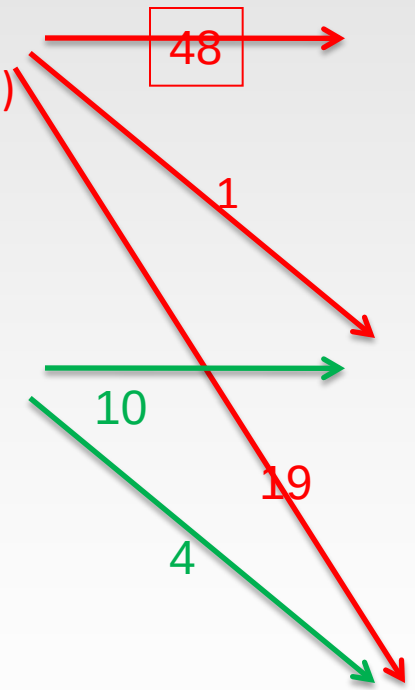
DIAGNOSIS: based on all available evidence:

Definite ADHD:	conclusive evidence
Possible ADHD:	clear indications for ADHD, but inconclusive evidence
No ADHD:	no indications for ADHD

not by methadone alone – study:

ADHD diagnosis in 193 chronic MMT patients

ADHD diagnosis	Childhood	Current
Definite	68	48
	(35.2%)	(24.9%)
Possible	14	11
	(7.2%)	(5.7)
No ADHD	111	134
	(57.6%)	(69.4%)



not by methadone alone – study:

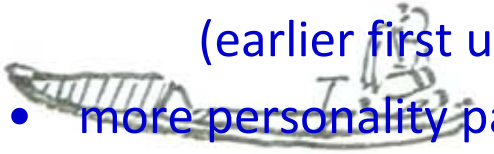
comparison of 48 ADHD+ patients with 111 ADHD- controls

		ADHD + N = 48	ADHD- N = 111	Sig.
Legal Status	Europ-ASI	4.5 (2.3)	3.4 (2.3)	< 0.01
Family/Social Relationships	Europ-ASI	4.6 (1.6)	3.4 (1.8)	< 0.001
Psychiatric Status	Europ-ASI	5.5 (1.5)	3.6 (2.2)	< 0.001
Quality of life	EQ-5D index	0.56 (0.34)	0.70 (0.29)	< 0.01
N substance use disorders	CIDI-SAM	2.0 (1.7)	1.2 (1.2)	< 0.01
Any psychiatric disorder - current	MINI	38 (79.2%)	54 (48.6%)	< 0.001
Any psychiatric disorder – lifetime	MINI	39 (81.3%)	58 (52.3%)	< 0.01
History of Conduct Disorder	DIS-O	37 (77.1%)	52 (46.8%)	< 0.001
Personality disorder screening	SCS	46 (95.8%)	54 (48.6%)	< 0.001
Antisocial Personality Disorder	SIPD-IV	27 (56.3%)	22 (19.8%)	< 0.001

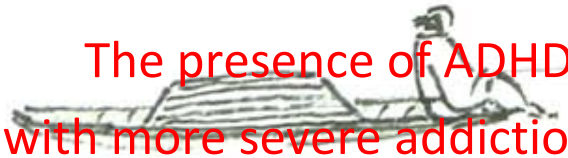
Characteristics of ADHD in MMT : conclusions

MMT patients with ADHD have/tend to have:

- a higher rate of comorbid psychiatric disorders
- more severe substance use disorder characteristics
  (earlier first use, more diagnoses)
- more personality pathology, more antisocial personality disorders
- more problems in general functioning
- lower quality of life



The presence of ADHD tends to be associated with more severe addiction and psychiatric problems



what is the relevance of an ADHD diagnosis in this population with severe psychiatric pathology?

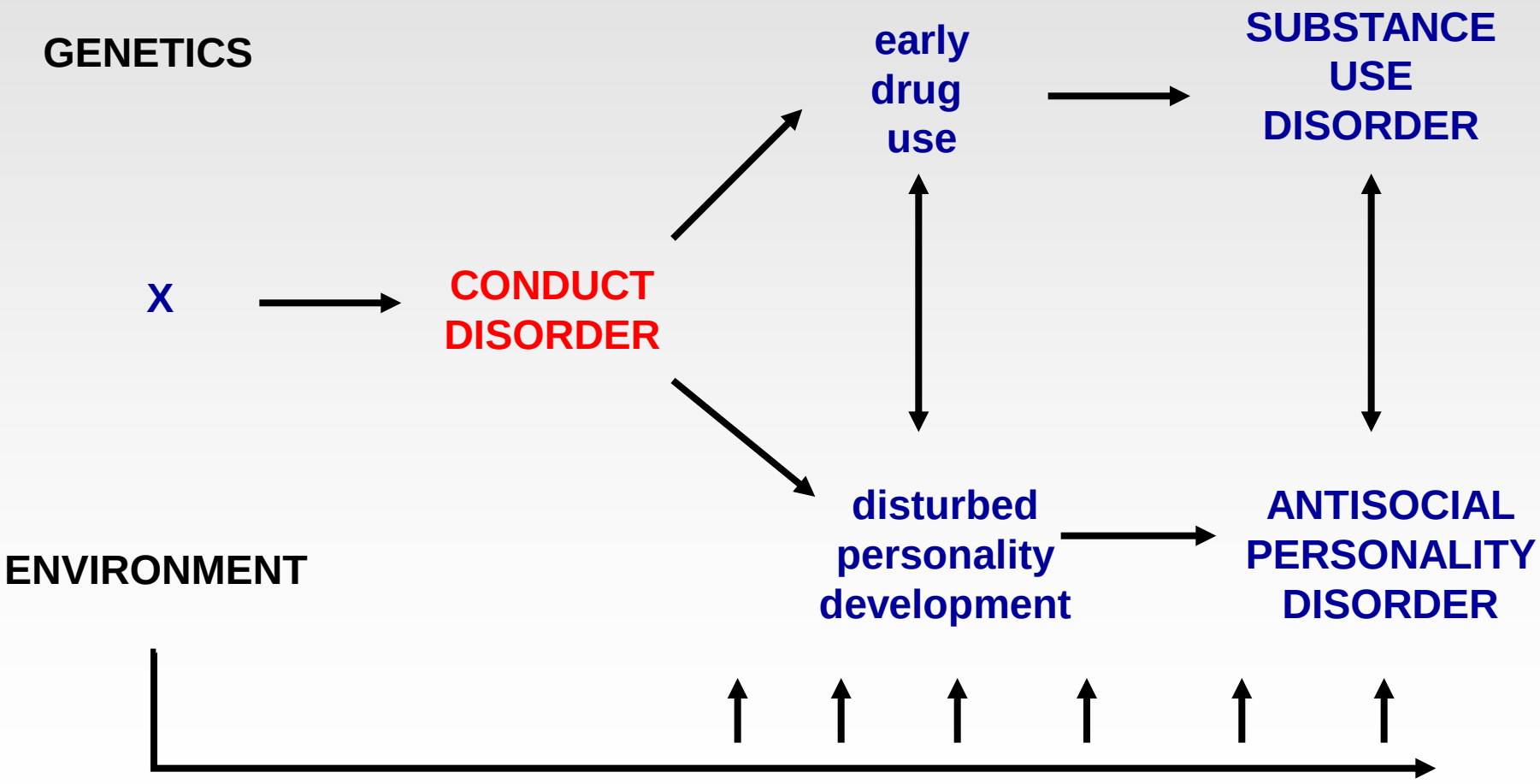
ADHD is definitely not:

- the only diagnosis
- the primary diagnosis

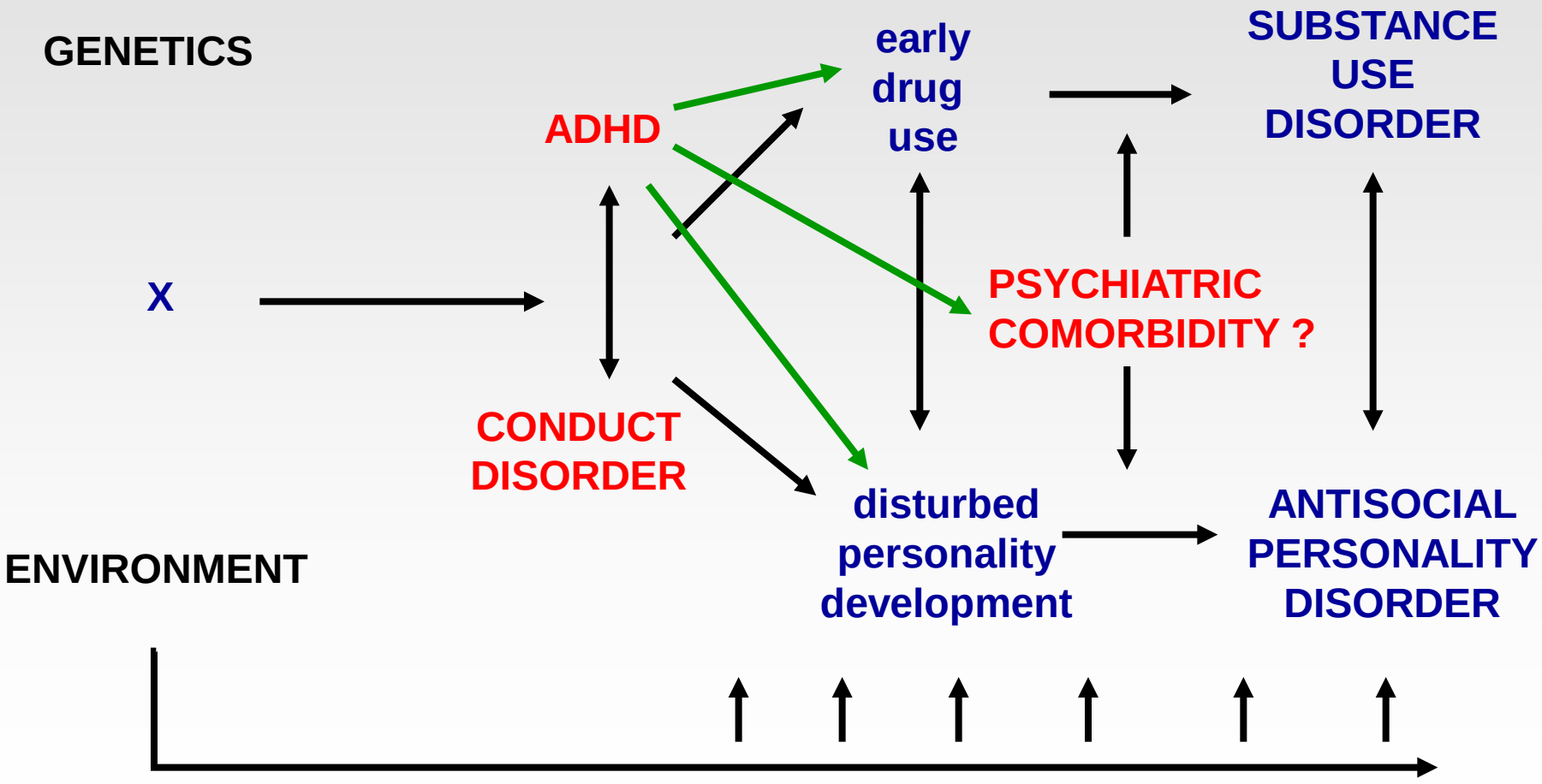
in each patiënt, ADHD can be an influential factor in:

- the origin and development of the substance use disorder (*probable*)
- persistent psychiatric pathology (*possible*)
- persistent drug use (*possible*)

Developmental pathway of a severe substance use disorder



Developmental pathway of a severe substance use disorder : the influence of ADHD



what is the relevance of an ADHD diagnosis in this severely disordered patient population ?

the answer to this question
is directly relevant for the next problem:

Why treat ADHD in MMT patients ?

In some patients, ADHD, although not the only or the primary diagnosis, can be a relevant problem:

- clearly invalidating ADHD symptoms
- disturbing influence of ADHD on psychiatric stability and therapeutic compliance (e.g. forgetting appointments)
- role of ADHD in persistent drug use (increased psychiatric comorbidity?)

Why treat a minor disorder in complex patients ?

successful ADHD treatment *can make a difference*

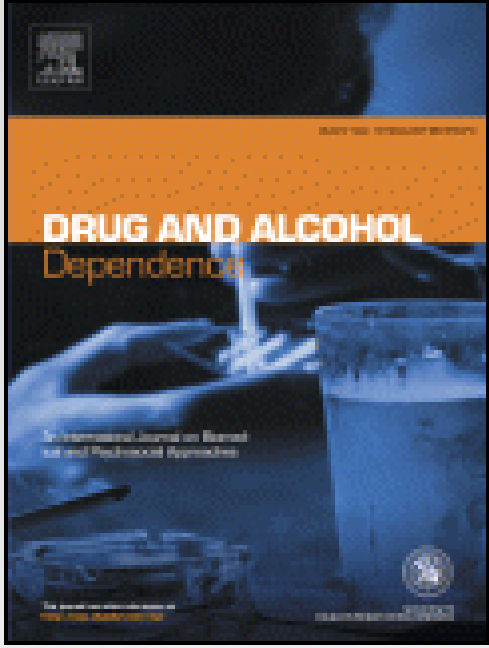
Behandling av hyperaktivitet og oppmerksomhetssvikt med amfetamin. Erfaringer med fem voksne sikringsdømte.

[Treatment of hyperactivity and attention deficit with amphetamine. Experience with five adult prisoners][Article in Norwegian]
Tidsskr Nor Laegeforen. 1996 Jun 30;116(17):2002-5.

Stovner AM, Wyller TB, Skulberg A, Os L, Korsmo G.
Geriatrisk avdeling Ullevål sykehus, Oslo.

Attention deficit hyperactivity disorder (ADHD) is a fairly common syndrome within child psychiatry. Stimulant medication is an important part of the treatment of the disorder. According to the literature, 30-50% of children with ADHD will still suffer from symptoms when they reach adulthood. The syndrome is a risk factor for various psychiatric disorders, drug and alcohol abuse, and criminality. There is some evidence that even adult patients may benefit from stimulant medication. ADHD was diagnosed and stimulant medication was started in five adult men who had been imprisoned for serious crimes of violence. The response to treatment was good in all of them. After 4-6 years two had been successfully rehabilitated.

1 randomised controlled trial of ADHD treatment in MMT patients Levin et al, 2006



N = 98 MMT patients with ADHD
53 % also cocaine dependent

double-blind, three-arm, 12 week trial:

- methylphenidate (2 dd 20-40mg SR),
- bupropion (2 dd 200-400 mg SR)
- placebo

+ cognitive behavioral therapy (CBT)

Results

- 70% of patients completed the study: no differences between group
  = rather good retention rates
- no difference in decrease of ADHD Sx
- no difference in drug use

Available online at www.sciencedirect.com
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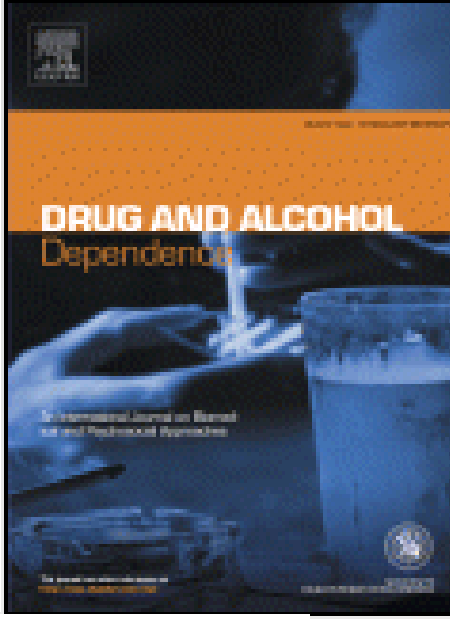

Treatment of methadone-maintained patients with adult ADHD: Double-blind comparison of methylphenidate, bupropion and placebo

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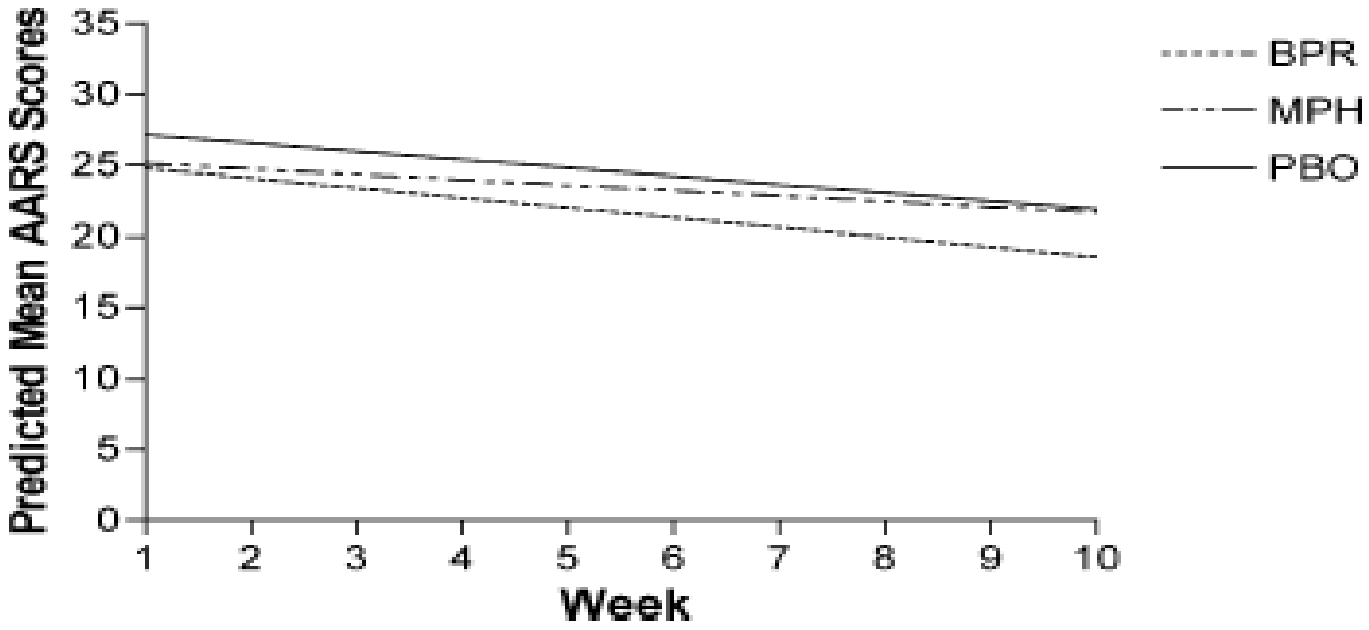


Fig. 2. Mean AARS scores over 10-week treatment phase.

Levin, 2006 :
ADHD treatment of 98 MMT patients

	Placebo (N = 33)	MPH (N = 32)	BPR (N = 33)
AARS	46%	34%	49%
CGI	39%	19%	30%
AARS + CGI	21%	9%	15%

Levin study: comments

impressive work but negative results

<u>multiple probable causes:</u>

- use of older sustained-release MPH formulation
- compliance ?
- high placebo rate
- all patients were accepted, regardless of:
    - current drug use
    - comorbidity
    - treatment engagement

how would you percieve an improvement in your concentration,
when you never have to focus your attention?

The Swedish experience

Olof Blix, Arne Dalteg, Peter Nilson
Addiction Medicine Unit, Ryhov County Hospital, Jönköping, Sweden
Heroin Addict Relat Clin Probl 2009; 11(1): 5-14

treatment of > 150 SUD patients with ADHD

report on 12 ADHD patients on opioid substitution:

12 patients: 11 men, 1 woman

mean age 38 years

opioid maintenance:

- methadone: mean daily dose 107 mg (range 60-130 mg)
- high dose buprenorphine: mean 20 mg (range 16-32 mg)

ADHD medication:

- 10 patients: Concerta: mean 72 mg
- 1 patients MPH capsules 30+30+20 mg
- 1 patient Modafinil 200 mg

The Swedish experience

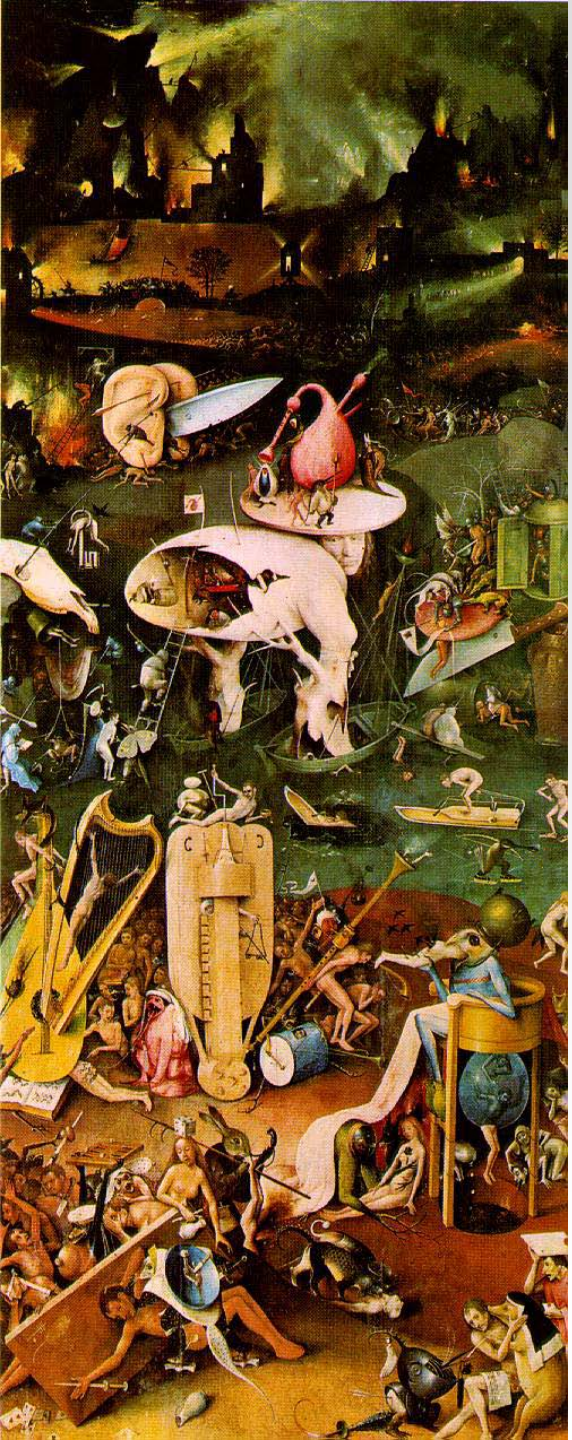
follow-up data:

- decrease of irritation/aggressiveness
- improvement of ability to organise daily living
- improvement of ability to relax
- improvement of ability to plan ahead
- improvement of sleep
- decrease of inner tensions
- no change in craving
- slight improvement of neuropsychological functioning
- increase of N of negative urine drug screens (66.2 to 79%)

Which MMT patients will profit most from ADHD treatment ?

- clear ADHD diagnosis
- clearly troublesome ADHD symptoms
- good therapeutic relationship, good working alliance
- strong motivation, good compliance to treatment
- stabilised substance use disorder: **control** over substance use
- stabilised psychiatric comorbidity
- stabilised personality pathology
- stable psychosocial situation

The better patients will do best



state of the art:
ADHD treatment in MMT

minimal data

no treatment with proven efficacy

insufficient information

for solid guidelines

→ a pragmatic approach

based on clinical experience

a pragmatic approach of ADHD treatment in MMT patients

0. screening:

in all published prevalence studies:

the great majority of identified ADHD patients had never been diagnosed before

So your first step needs to be:

a standardised screening procedure

for identifying ADHD in the MMT population

a pragmatic approach of ADHD treatment in MMT patients

1. comprehensive psychiatric assessment:

not only of ADHD

but of all concommitant psychiatric disorders:

- in childhood	Conduct Disorder
- lifetime	personality disorders
	Mood and anxiety Disorders
- substance use disorders	
- present state:	actual symptoms
	actual drug use

a pragmatic approach of ADHD treatment in MMT patients

2. comprehensive treatment planning:

* careful assessment of each psychiatric disorder and resulting invalidity

→ clear priorities in treatment plan

what is most important, must come first

* careful assessment of the severity of ADHD symptoms

→ clarity about the importance of ADHD and its role in persistence addiction problems

* careful assessment of previous treatment results

→ prognosis is clear
possibilities and limitations of treatment are known
treatment goals are realistic

practice of ADHD treatment in MMT patients

treatment goals:

1. stabilisation: control over drug intake

stable/minimal use of other substances or alcohol

stable psychosocial situation

2. treatment of:

* Axis I psychiatric comorbidities
* somatic problems
* ADHD: medication

3. aiming for long-term treatment goals: long-term stability

- improved/independent housing / paid work
- amelioration of psychological problems: psychotherapy
- ADHD treatment: appropriate coaching

Is safe use of short-acting psychostimulants possible in ADHD & SUD patients ?

short-acting psychostimulants are ill-suited for MMT patients

a highly irregular life is not compatible with
a regular and reliable medication intake

So please use modern long-acting medication !
(Yes, you need to do a lot of extra paper work,
but it is worth it)

Also: this is where atomoxetine (Strattera) could offer an advantage
(intake once daily, long-term effect)

Further treatment of ADHD in SUD

psycho-education

coaching

cognitive therapy

clear benefit for adult ADHD patients

also beneficial for addicted ADHD patients ***in stable conditions*:**

- stable abstinence
- stabilisation/remission of ADHD symptoms
- psychiatric stability

Effect of successful treatment of ADHD in MMT patients

The effect will not be spectacular, but can be worthwhile

The effect will probably be more *subjective*, and will not be immediately apparent in level of functioning:

- improvement of feeling of well-being
- improvement of quality of life
- improvement of control over drug use
- improvement in therapy compliance
- improvement of planning and organising skills
- improvement in functioning?
- improvement of long-term prognosis?

No direct effect on substance use disorder …

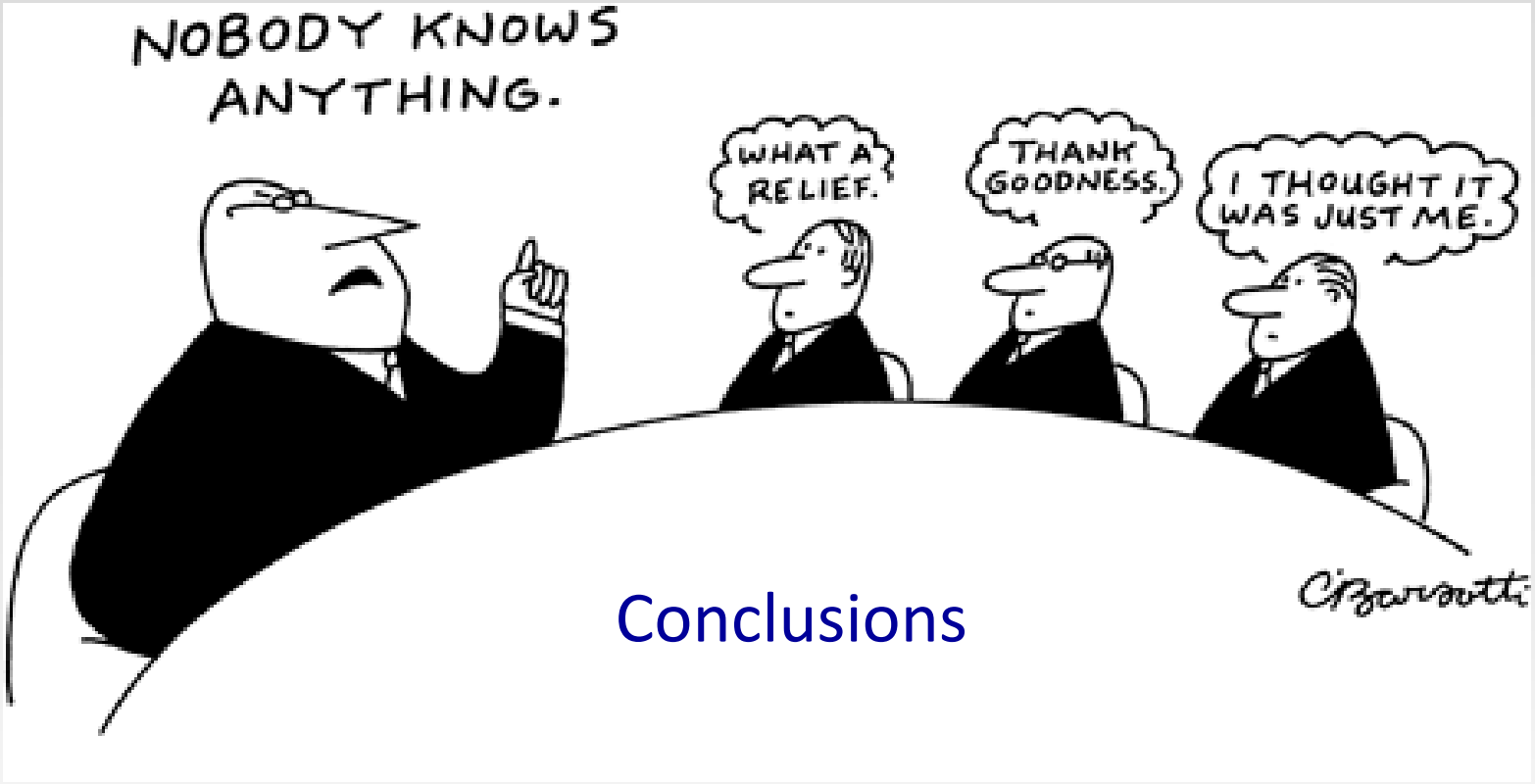
What is needed to build an good treatment programm for ADHD in MMT ?

Greatest challenge: building the expertise

Adequate treatment of ADHD in addicted patients
demands a **multimodular approach**
executed by **different team members**: psychiatrist
psychologist
psychiatric nurse
ergotherapist

high level of psychiatric expertise
high level of therapeutic expertise
not yet available in every addiction treatment facility

Treating ADHD in SUD patients
is a mark of quality psychiatric care !



Conclusions

1. opioid dependent patients are chronic psychiatric patients with severe comorbid psychopathology, including ADHD
2. treatment of ADHD is worthwhile in *selected* patients
3. treatment of ADHD in MMT is a mark of quality treatment

An ADHD treatment program is a stimulus for ***improving*** the level of psychiatric care for SUD patients