

**Seraf**  
Senter for rus- og avhengighetsforskning

UNIVERSITETET  
I OSLO

# The epidemiology of (meth)amphetamine

Jørgen G. Bramness

Norwegian Centre for Addiction Research, University of Oslo, Norway  
Norwegian Institute of Public Health, Oslo, Norway

1

SERAF - Senter for rus- og avhengighetsforskning – www.seraf.uio.no

**Seraf**  
Senter for rus- og avhengighetsforskning

UNIVERSITETET  
I OSLO

## Conflicts of interest

- No conflicts of interest
- The presented research is sponsored by
  - The Norwegian Research Council, Program for Addiction Research
  - Norwegian Center for Addiction Research
  - Norwegian Directorate of Health
  - Lovisenberg Diaconal Hospital, Oslo, Norway

2

SERAF - Senter for rus- og avhengighetsforskning – www.seraf.uio.no

## The history of (meth)amphetaminene

- 1887: amphetamine synthesized by the Romanian chemist Lazăr Edeleanu in Berlin
  - Related to the newly isolated ephedrine (Nagai Nagayoshi)
- 1927: Gordon Alles synthesized it
  - tested it on himself
  - an artificial replacement for ephedrine
- Methamphetamine was first synthesized from ephedrine in Japan in 1920 by chemist Akira Ogata, via reduction of ephedrine using red phosphorus and iodine



3

SERAF - Senter for rus- og avhengighetsforskning – [www.seralf.uio.no](http://www.seralf.uio.no)

## Historical uses of central stimulants



4

SERAF - Senter for rus- og avhengighetsforskning – [www.seralf.uio.no](http://www.seralf.uio.no)

**"Bond cursed himself for an impulse that earlier in the day would have seemed unthinkable. Champagne and Benzedrine - never again."**

Ian Fleming, 'Moonraker', 1955

## DON'T BE FAT

My New Obesity Reducer Quickly Changes Your Weight to Normal  
Requires No Starvation Process and is Absolutely Safe

TRIAL PACKAGE MAILED FREE



The Above Illustration Shows the Remarkable Effect of My Wonderful Obesity Reducer - What a Help It Can Do for Others It Can Do for You

My new obesity reducer takes at maximum complete perfect assimilation of the food and drink you eat. It does this by attacking the fat storage areas or metabolic process. You can eat the same amount of food and drink as you like and still lose weight. It makes all the big difference in the world. It makes you look good and makes the best in act freely and the best in life. You will feel better in fact day you try this wonderful obesity reducer. Write today and we will send you a free trial package with and mail-in-day.

**FREE**  
This product is being offered in increments of 1000 units per month. Each unit contains 1000 units of the product. Each unit costs \$10.00. Each unit contains 1000 units of the product. Each unit costs \$10.00.  
P-A KELLOGG, INC. Kellogg Corp.  
Battle Creek, Mich.



5

SERAFF - Senter for rus- og avhengighetsforskning - [www.seraf.uio.no](http://www.seraf.uio.no)

## (Meth)amphetamine

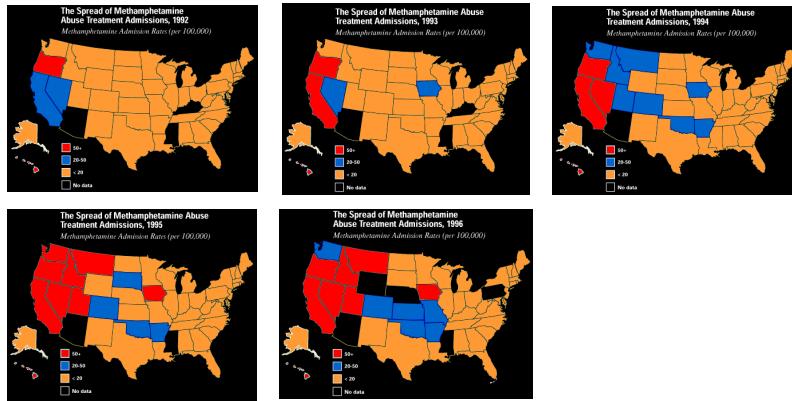
- Use of methamphetamine increased during WWII
- Both sides used central stimulants in combat
- Lieutenant Yukio Seki:
  - First kamikaze fighter of Japan, Oct 25<sup>th</sup> 1944



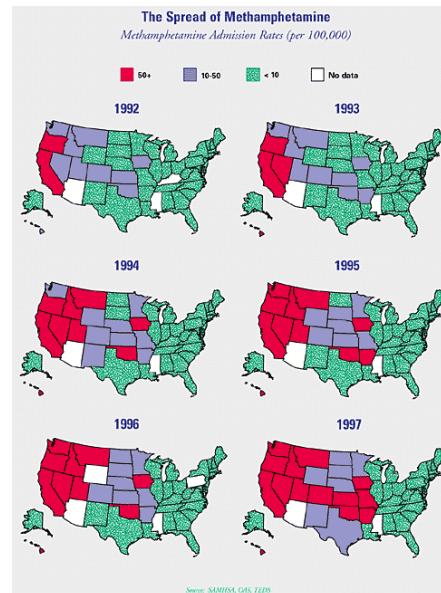
6

SERAFF - Senter for rus- og avhengighetsforskning - [www.seraf.uio.no](http://www.seraf.uio.no)

## Hvor ofte er metamfetamin hovedårsaken til en innleggelse i behandling i USA? (per 100 000)

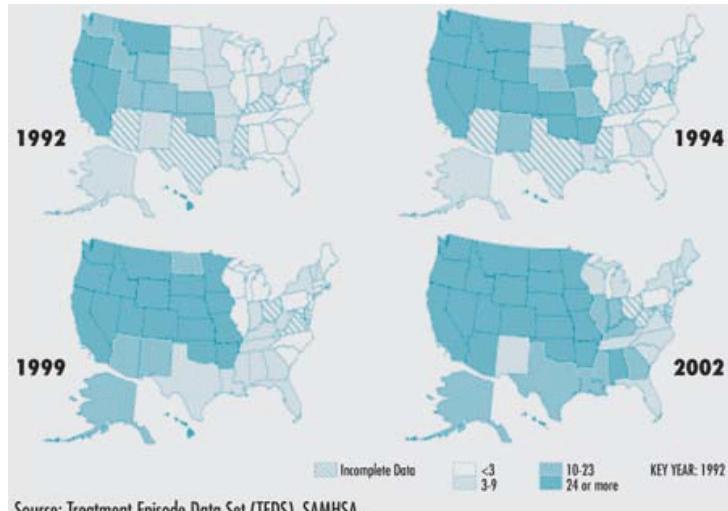


7

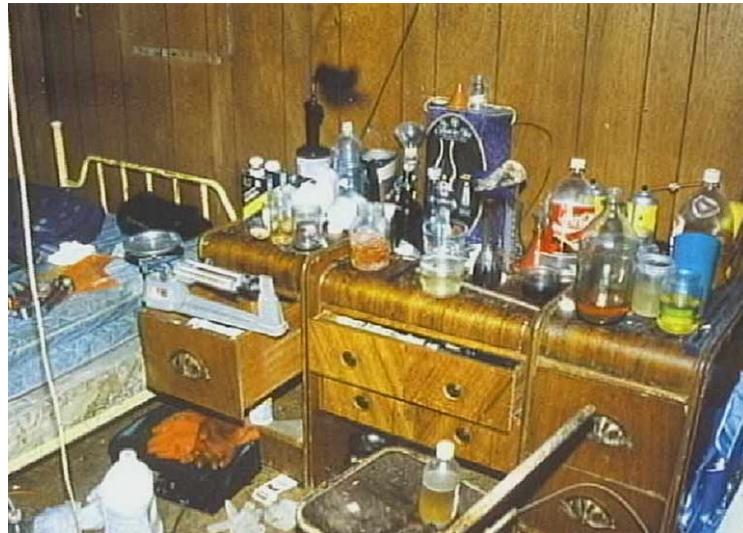
SERAFF - Senter for rus- og avhengighetsforskning - [www.seraf.uio.no](http://www.seraf.uio.no)

8

SERAFF - Senter for rus- og avhengighetsforskning - [www.seraf.uio.no](http://www.seraf.uio.no)

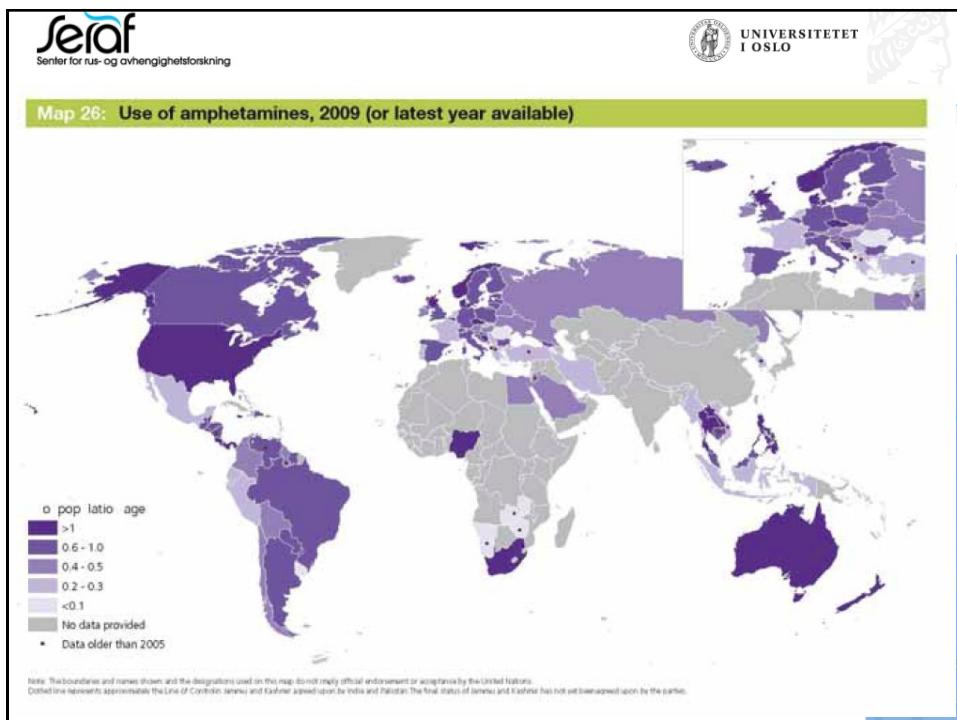
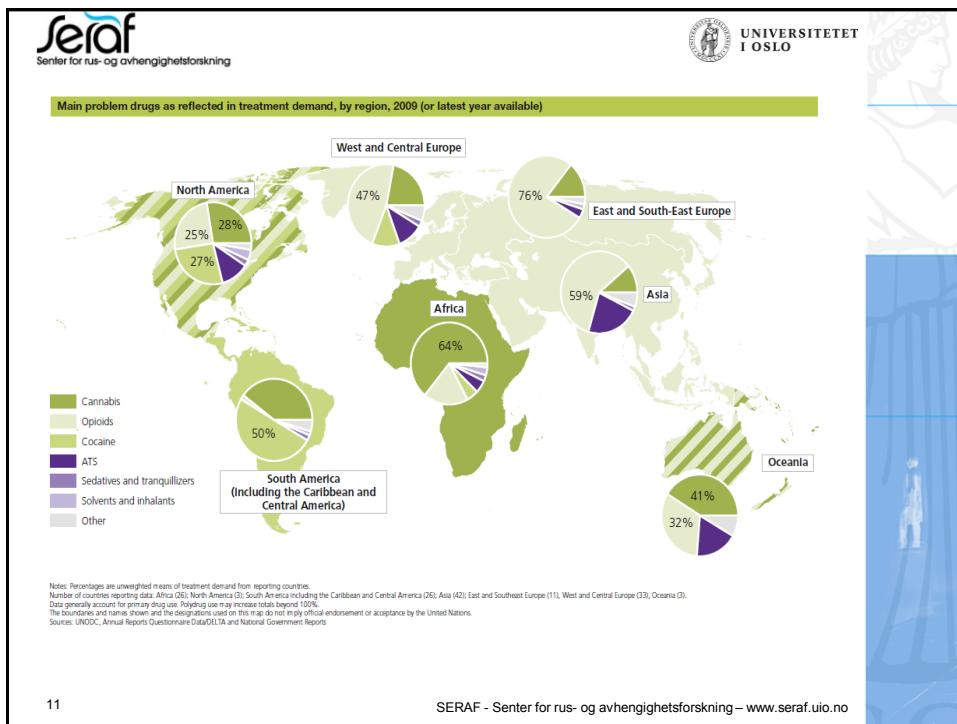


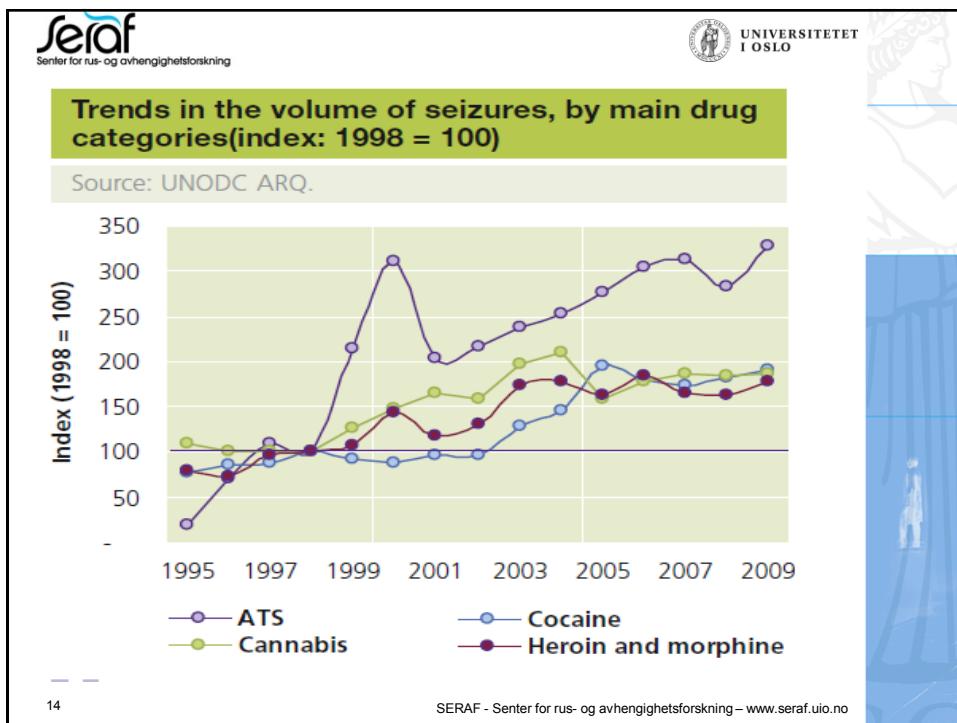
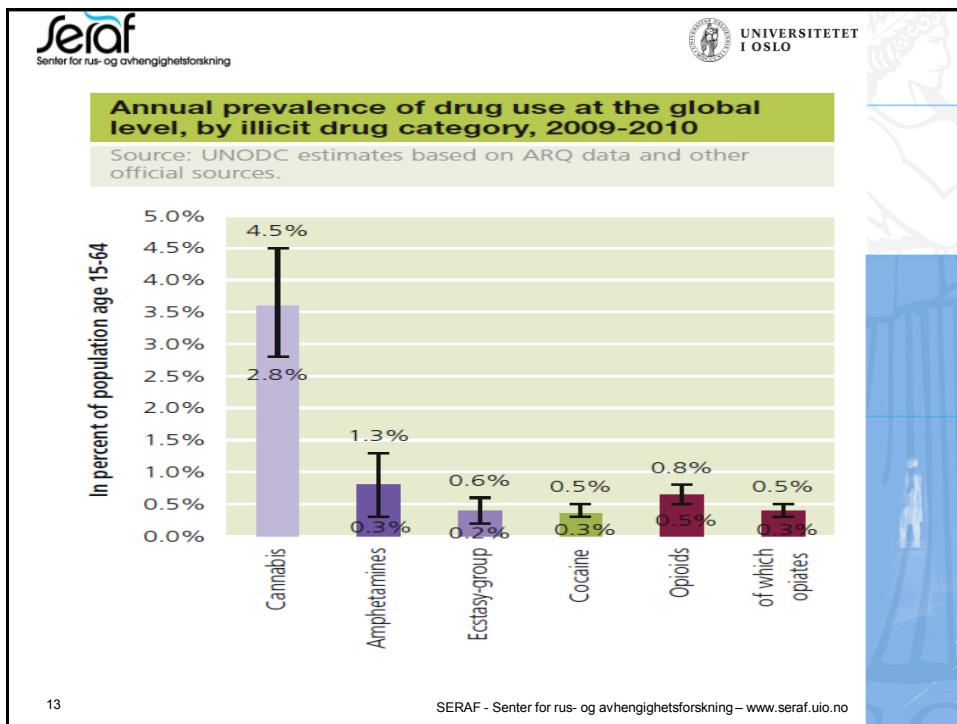
9

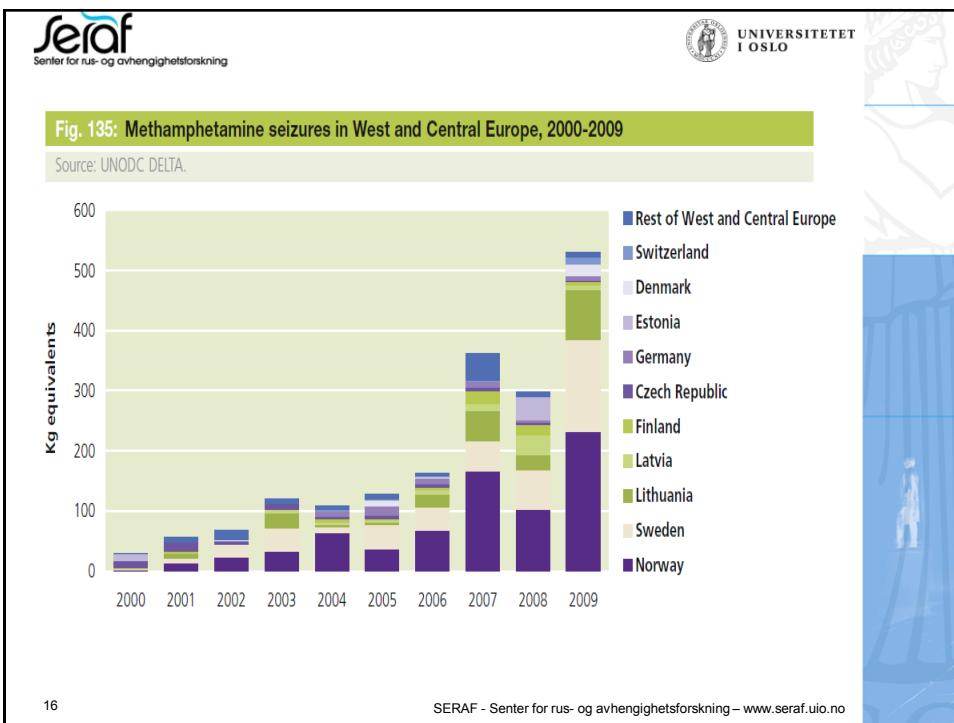
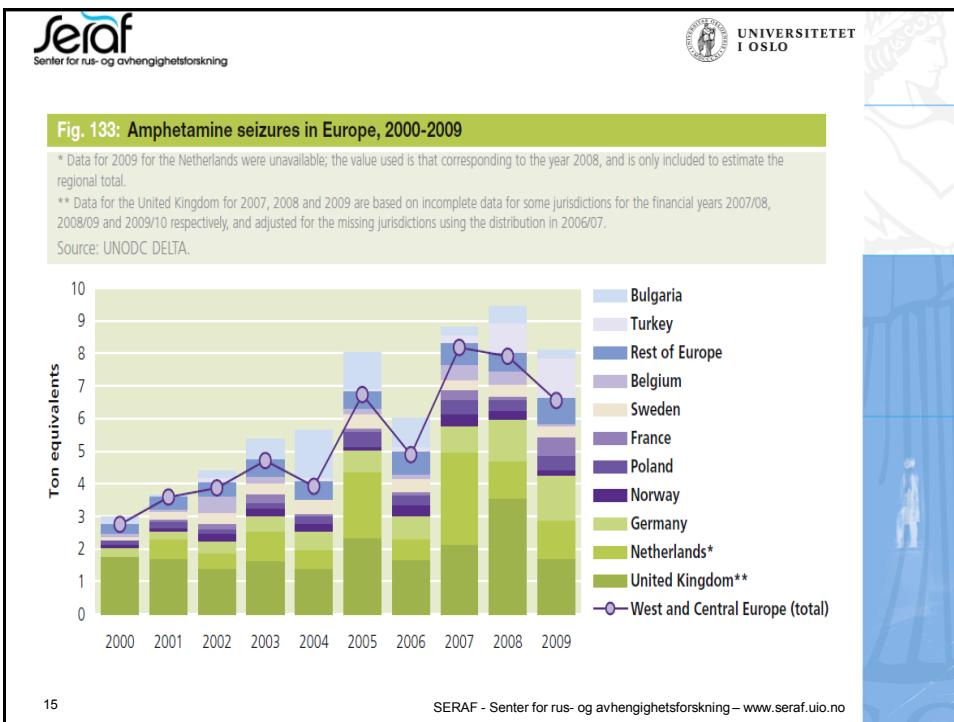
SERAF - Senter for rus- og avhengighetsforskning – [www.seralf.uio.no](http://www.seralf.uio.no)

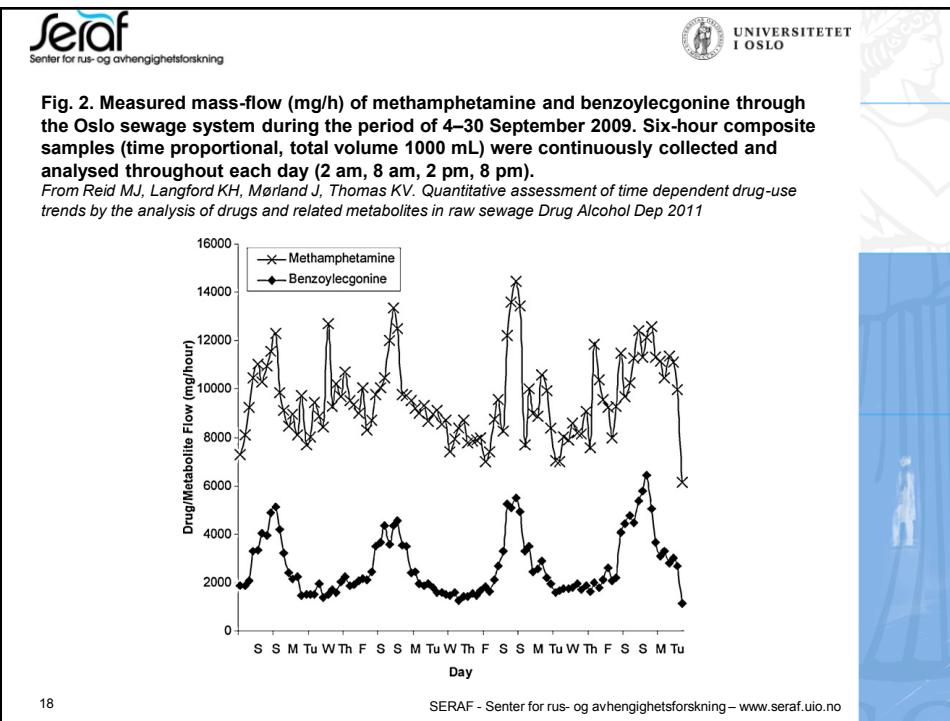
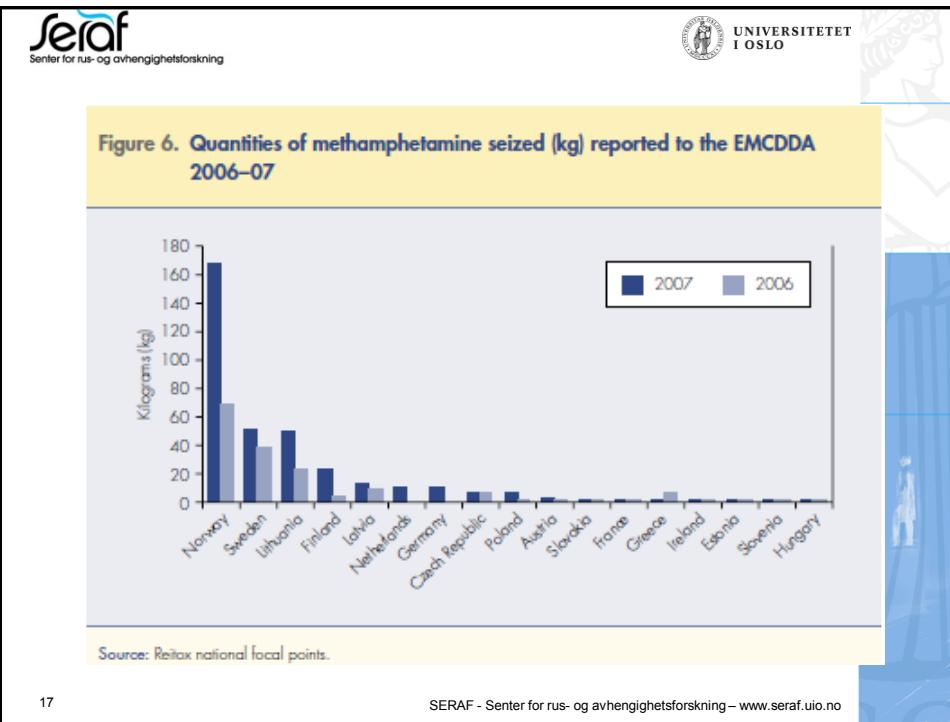
10

SERAF - Senter for rus- og avhengighetsforskning – [www.seralf.uio.no](http://www.seralf.uio.no)



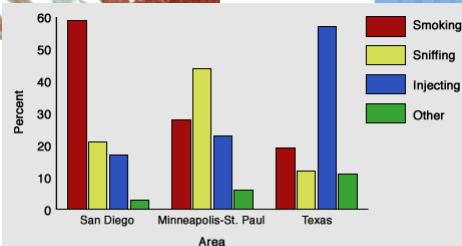
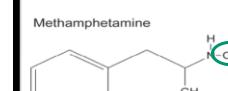
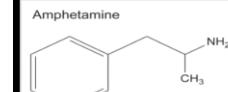






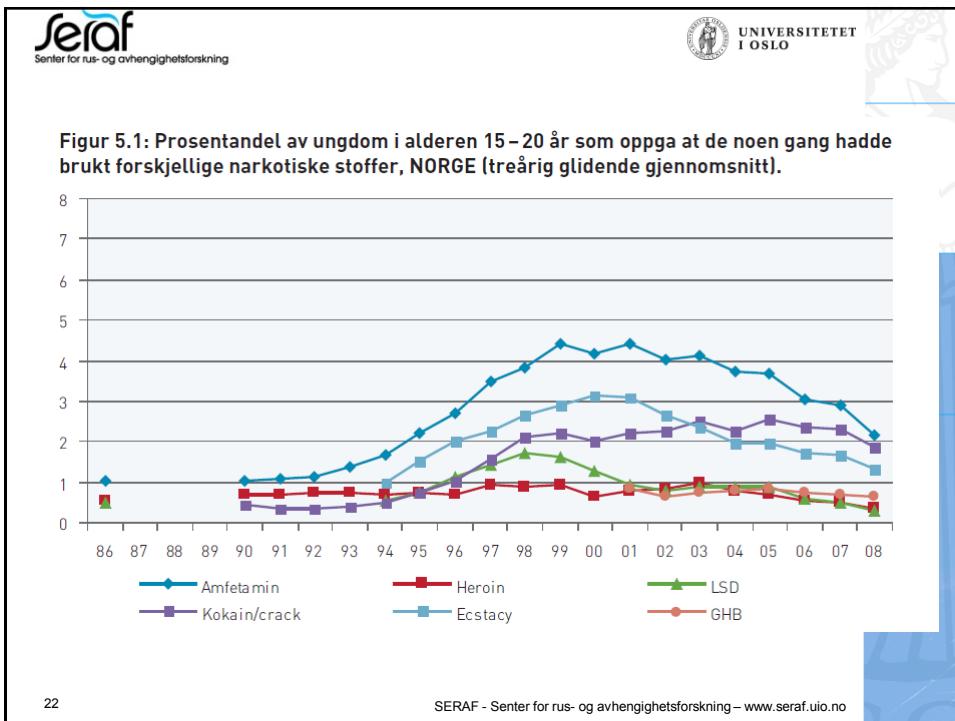
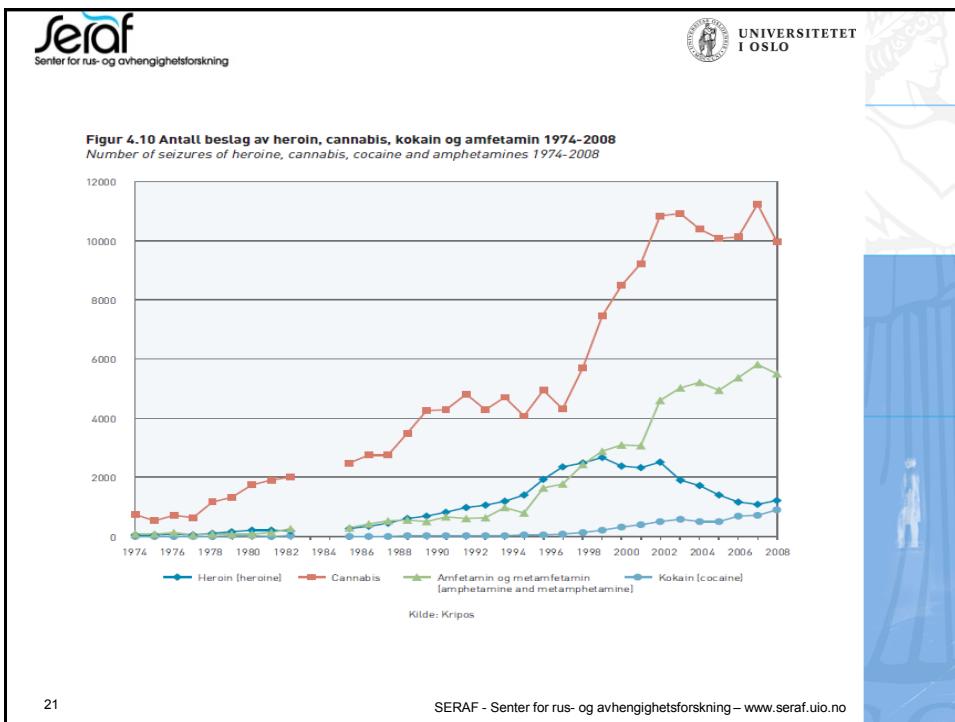
## Amphetamine vs. methamphetamine

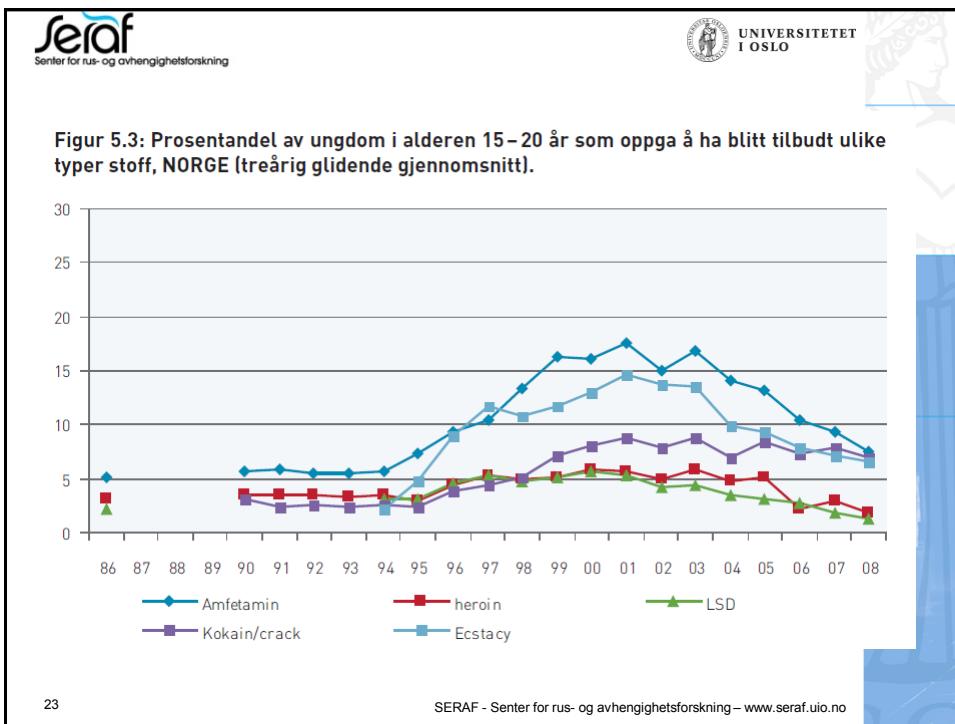
- Very similar
  - Abusers don't know what they buy!
    - Evidence in criminal courts
    - Interview with injecting drug users
- In US: methamphetamine = "ice"
  - Higher purity
  - Most often smoked
  - Can be injected
- In Scandinavia: methamphetamine – in powder form like amphetamine
  - Did this increase the accessibility to the market?
- Clinical knowledge: meth is more potent!
  - True?
  - Increased lipid solubility:
    - Quicker passing the blood brain barrier (quicker and higher high)
  - More difficult to metabolize
    - Longer duration of action?
- Methamphetamine is not less dangerous!
  - Why more potent
  - How much more potent
  - More potent in generating psychosis?



Note: Calendar year 2000 in Minneapolis/St. Paul; July-December 2000 in San Diego, and January-June 2001 in Texas.

Source: Community Epidemiology Work Group.





**Seraf**  
Senter for rus- og avhengighetsforskning

UNIVERSITETET  
I OSLO

NRK > Nyheter > Distrikt > Østfold

Østfold

NYHETER SPORT MAGASIN TV RADIO NRK NETT-TV NRK NETTRADIO SØK

Været akkurat nå

NRK ØSTFOLD

Valgø 9 NY!  
Sport  
RSS  
Nyhetsbrev  
Nettradio og -TV  
P1 Østfold live  
Radiosendinger  
TV-sendinger

VÆRET

I morgen kl. 13:  
Askim 18°  
Fredrik... 19°  
Halden 20°  
Moss 19°  
Rakkestad 19°  
Sarpsborg 19°  
Langtidsværsl for 500 steder i Norge og Hordaland

DISTRIKT

– Metamfetaminen florerer

Metamfetaminsmuglerne hadde skjult stoffet i rom under bilen.

Tollvesenet

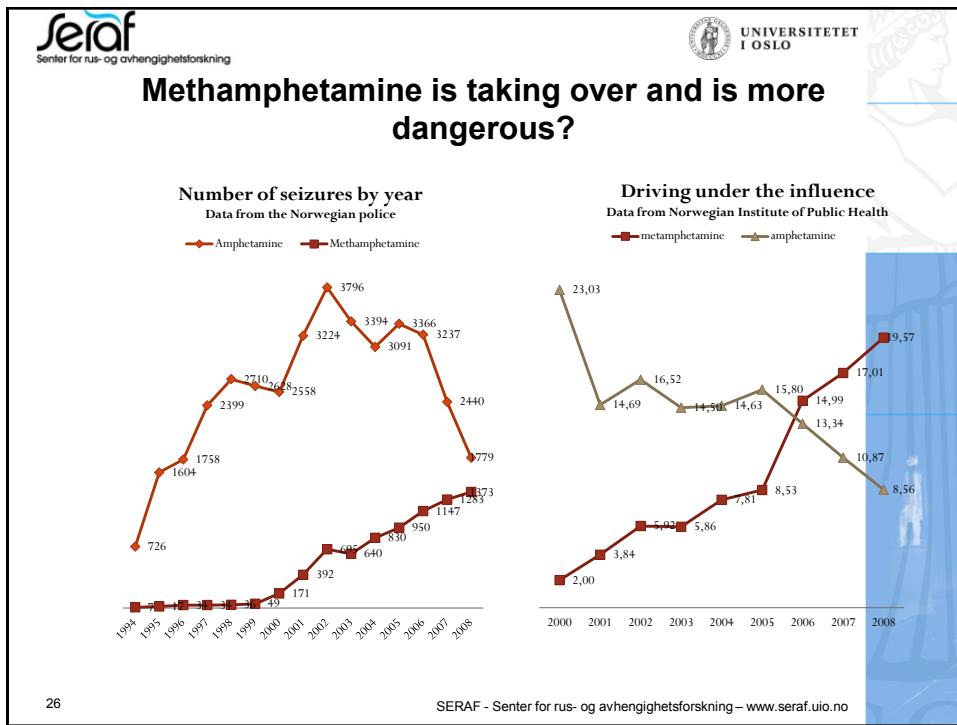
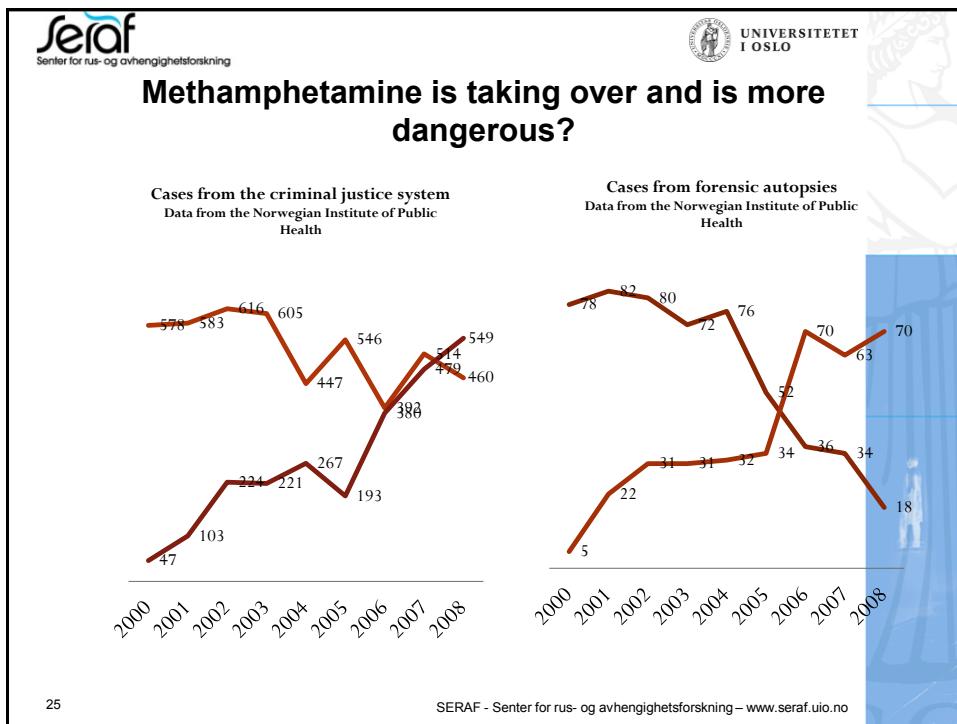
Se 1. divisjon i nett-TV  
SE 1. DIVISJON I NETT-TV ▲  
HOYDEPUNKTER FRA 1. DIVISJON 2009 ▲

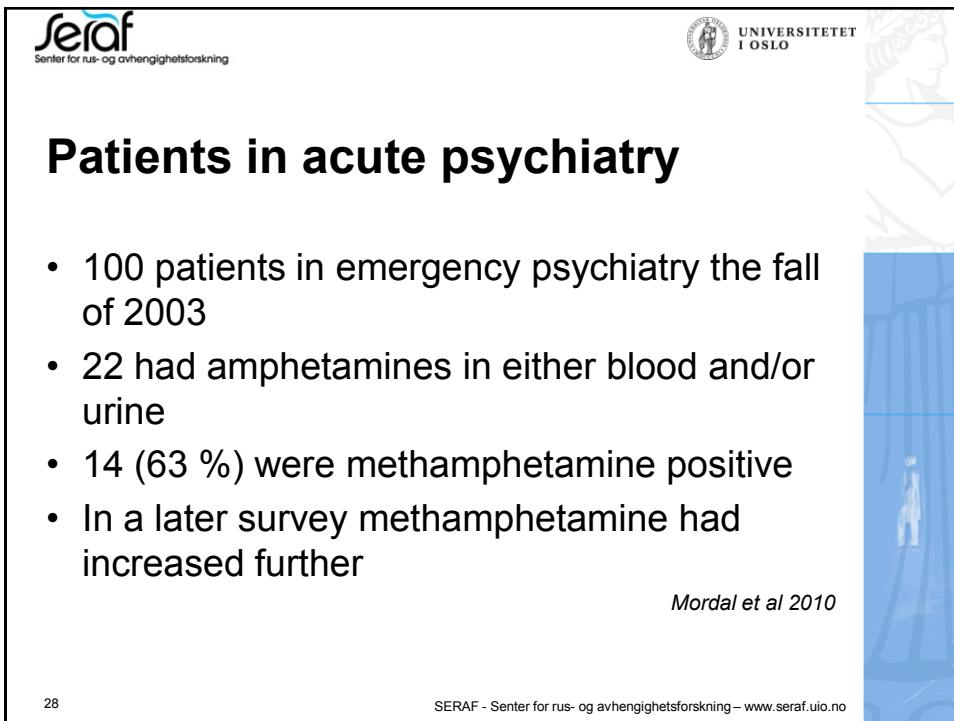
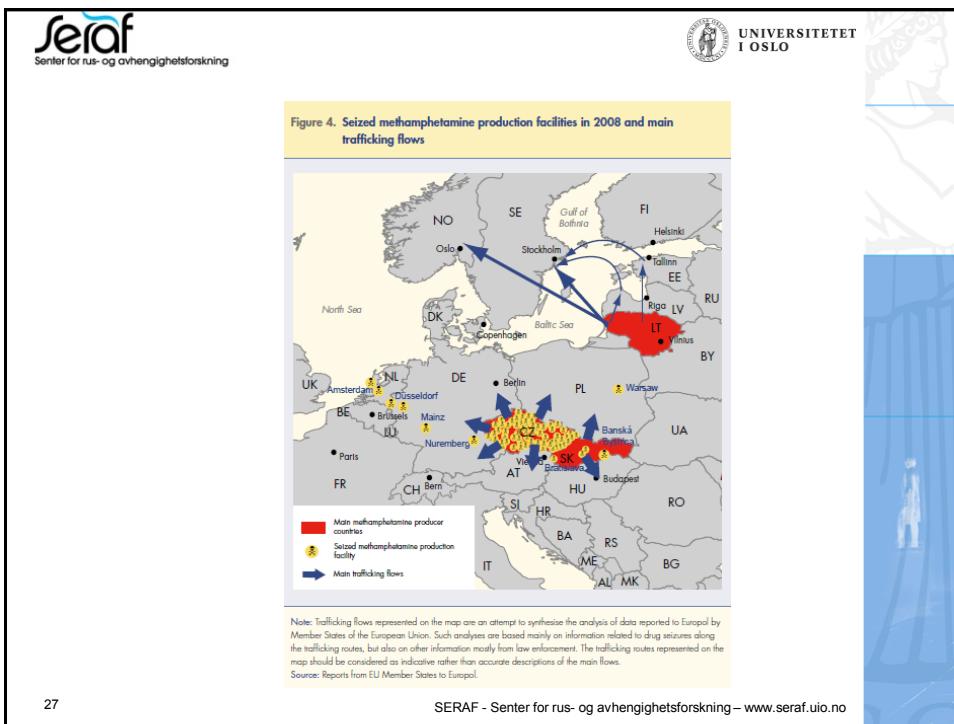
Bættfolk i byen  
Nyheter

TIPS OSS  
800 41 4111

ANNONSE

24 SERAF - Senter for rus- og avhengighetsforskning – www.seraf.uio.no







## Syringe exchange buss in Oslo

- Users don't discriminate between amphetamine and methamphetamine
- Many declare that they have used amphetamines during the last month
  - Average 14.5 days last month
- Increase in share who have used amphetamines over the years 1999-2008
- Increase in the number of days used
- Price has gone down

*Anne Line Bretteville-Jensen, SIRUS, pers.com.*