

# Kariesepidemiologi

*Karies - et  
samfunnshelseproblem?*

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Institutt for klinisk odontologi  
Universitetet i Oslo*

Hvilken betydning har  
karies i et  
samfunnshelseperspektiv?

Hvilken betydning har  
karies i et  
samfunnshelseperspektiv?

Norge ??!!

Hvilken betydning har  
karies i et  
samfunnshelseperspektiv?

■ WHO - World Health  
Organization



Home Page

## WHO Oral Health Country/Area Profile Programme

Department of Noncommunicable Diseases Surveillance/Oral Health

WHO Collaborating Centre, Faculty of Odontology, Malmö, Sweden

· The objective of CAPP - the WHO Oral Health Country/Area Profile Programme -  
is to present global information on dental diseases and oral health services ·

### About & Help

- [About CAPP and Supporting Partners](#)
- [Help and Practical Hints to Navigate CAPP](#)
- [Methods and Indices](#)

### Main CAPP pages

- [Oral Health Profiles for Countries Listed in Alphabetical Order](#)
- [Oral Health Profiles for Countries Listed According to WHO Regions](#)
- [Significant Caries Index](#) (selected countries)
- [Tobacco & Oral diseases](#)
- [Information on Oral Diseases](#)
- [Periodontal Conditions \(Japan Server\)](#)

### Links

- [WHO HQ Geneva](#)
- [WHO Oral Health Programme \(ORH\) Geneva](#)
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### Projects & Reports

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Hvilken betydning har  
karies i et  
samfunnshelseperspektiv?

- WHO - World Health Organization
- Verdensbanken

# Verdensbanken – global helse; fremtidsprosjeksjoner

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Bookmarks Location: <http://devdata.worldbank.org/hnpstats/> What's Related

**THE WORLD BANK GROUP** A World Free of Poverty **HOME**

## HNPStats

Human Development Network Development Data Group

**HNPStats includes the following tables:**

- [HNP At A Glance](#)
- [Data - comparative tables](#)
- [Demographic projections](#)
- [Lending data](#)
- [HNP-Poverty Data](#)
- [HNP Portfolio](#)

**Burden of disease**

- [DALYS](#)
- [Deaths](#)

**Time Series Data**

- [Data - query](#)

HNP Stats, short for Health, Nutrition, and Population Statistics, is a component of the Knowledge Management System of the World Bank's Human Development Network. HNP Stats offers country data sheets showing summary indicators for health status, health determinants, and health finance.

HEALTH, NUTRITION, AND POPULATION  
THE WORLD BANK

You need MS Excel 97 or Excel Viewer to view and/or save the Excel files. If you do not have MS Excel 97, you can click this to download Excel Viewer.

[HNP Home Page](#) [Education](#) [Social Protection](#) [Development Data Group](#)

JavaScript error: Type 'javascript:' into Location for details

# Verdensbanken – global helse; fremtidsprosjeksjoner

**DALYS** - the disability-adjusted life-year.

Makes it possible to estimate the burden of major diseases, injuries, and risk factors.



# Hvilken betydning har karies i et samfunnshelseperspektiv?

- WHO - World Health Organization
- Verdensbankens helse, kost og  
populasjonsstatistikk
- FDI - Federation Dentaire International

|  |   |   |  |  |
|--|---|---|--|--|
| <a href="#">The FDI Organisation</a>                   | <a href="#">FDI World Dental Press</a>                                  |  | <a href="#">Global Dental Aid &amp; Aid Organization</a> | <a href="#">The Dental Industry</a>    |
| <a href="#">FDI Members &amp; Association Partners</a> | <a href="#">FDI Congress and Education &amp; Dental Events Calendar</a> |   | <a href="#">Global Dental Information</a>                | <a href="#">Professional Resources</a> |

**FDI World Dental Federation**

Site search, professional resources



**Professional Resour**

**Guidelines database**

**Dental journals on WWW**

**Continuing education courses**

**Inquiries - Dental Science**

**Emerging technologies**

**epidemiology\_research**

| Year | Original title  | Type                 | Country             | Source   | Publish                            | Authors                  | http  | ISDN       | topic   |
|------|---|----------------------|---------------------|--|------------------------------------|--------------------------|---|------------|---|
| 2001 | Methodische Empfehlungen und Forschungsbedarf in der oralen Epidemiologi. [Recommended methodology and research needs in oral epidemiology] | Review/Guidelines    | Germany/Deutschland | DGZMK, Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde. Arbeitskreises Epidemiologie und Public Health in der DGZMK | Dtsch Zahnärztl Z 2001; 56: 403-14 |                          |   |            | epidemiology standards                                    |
| 2001 | Index system for caries epidemiology and treatment  | ongoing project      | International       | FDI Commission project 99-06   | Project in progress                | Reich E                  | <a href="#">Project details</a>   |            | caries-pub epidemiology                                   |
| 2000 | Oral Health in America: A Report of the Surgeon General   | Review               | USA                 | NIH, National Institutes of Health   | NIH Publication No 00-4713         | Satcher D                | <a href="#">Surgeon General</a>   |            | epidemiology fluoride caries-pub tobacco cancer perio-pub |
| 1999 | Definitionen wichtiger und häufig gebrauchter Begriffe [Definitions of important and commonly used terms]                                   | Guidelines           | Germany/Deutschland | DGZMK, Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde  |                                    | Peters S, Geurtsen W     | <a href="#">DGZMK, Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde</a> |            | evidence  |
| 1997 | Evidence-Based Dental Care  | Statement            | USA                 | American Public Health Association   |                                    |                          | <a href="#">American Public Health Association</a>                                |            | evidence  |
| 1997 | Ethnicity, aging, and oral health outcomes: findings from the ICS-II USA research locations   | Proceedings          | International       | IADR, International Association for Dental Research  | Adv Dent Res 1997; 11: 200-300     | Andersen RM, Davidson PL | <a href="#">IADR</a>  |            | gerodontics access epidemiology                           |
| 1997 | Oral Health Surveys: Basic methods. 4th edition (replace 3rd ed. 1987)  | Guidelines           | International       | WHO, World Health Organisation   | Geneva: WHO                        |                          | <a href="#">Contact: WHO</a>  | 9241544937 | epidemiology standards                                    |
| 1996 | Epidemiologische Studien [Epidemiological studies]  | Guidelines/Statement | Germany/Deutschland | DGZMK, Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde. Arbeitskreises Epidemiologie und Public Health in der DGZMK |                                    | Reich E                  | <a href="#">DGZMK, Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde</a> |            | epidemiology standards                                    |
| 1996 | Position paper: epidemiology of periodontal disease   | Review               | USA                 | American Academy of Periodontology, Research, science and therapy committee  | J Periodontol 1996; 67: 935-45     |                          |   |            | periodontics epidemiology                                 |

# Hvilke trender kan observeres internasjonalt?

- ✓ Flere fattige enn rike har karies
- ✓ Flere fattige enn rike har ubehandlet karies
- ✓ Barn med ubehandlet karies er relatert til familieøkonomi og til etnisk gruppe
- ✓ Karies er redusert i den vestlige verden og sterkt økende i de fleste andre land
- ✓ Sammenheng mellom kariesprevalens i befolkningen og hvordan tannpleiesystemet er organisert nasjonalt er usikker

Hvilken betydning har  
karies i et  
samfunnshelseperspektiv?

“Dental caries is one of the most  
common diseases among 5- to 17- year  
olds\*”

|                    |     |
|--------------------|-----|
| Caries             | 59% |
| Asthma             | 11% |
| Hay fever          | 8%  |
| Chronic bronchitis | 4%  |

\*The Surgeon General. *Oral Health in America*, 1999 p87.

# Hvilken betydning har karies i et samfunnshelseperspektiv?

- WHO - World Health Organization
- Verdensbankens helse, kost og populasjonsstatistikk
- FDI - Federation Dentaire International

USA:

- CDC - Center for Disease Control

# Center for Disease Control

Oral Health Resources - Microsoft Internet Explorer

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Address <http://www.cdc.gov/OralHealth/> Go Google Search Web

**CDC**  
SAFER • HEALTHIER • PEOPLE

CDC Home Search Health Topics A-Z

National Center for Chronic Disease Prevention and Health Promotion  
**Oral Health Resources**  
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## Oral Health RESOURCES

**ORAL HEALTH RESOURCES**

**Browse by Topic**

- [Adults](#)
- [Children](#)
- [Infection Control](#)
- [Water Fluoridation](#)
- [More ...](#)

**Resource Library**


- [Fact Sheets](#)
- [Journal Articles](#)
- [MMWRs](#)
- [Press Releases](#)
- [More ...](#)

**Guidelines and Recommendations**  
For clinicians and public health professionals


**Data Systems**


- [MWF](#)
- [NOHSS](#)
- [Oral Health Maps](#)
- [Synopsis](#)
- [WFRS](#)  
Login Required


**State-by-State Reports**  
Cooperative agreements and initiatives by state

**Expanded State Information**  
[State-by-State Reports](#)  
including new information on [Oral Health Plans](#), [Cooperative Agreement Recipients](#), and other state-based initiatives. 


See [My Water's Fluoride](#) and [Oral Health Maps](#) for up-to-date information on the fluoride content of water in 19 participating states. More data available in [Data Systems](#).

**Infrastructure Development Tools**  
[Oral Health Infrastructure Development Tools](#) and [Appendices for Program Announcement 03022](#). 


**Device Evaluation Forms**  
See the new [Sample Screening and Device Evaluation Forms](#) for safer dental devices. 

**Brush Up on Healthy Teeth**  
A health education campaign including a [Brush Up Quiz for Parents](#), [Tip Sheet](#), and [Poster](#). 


**PRESS RELEASE**

**10/30/02**   
[CDC Web Site Now Provides Information on Community Water Fluoridation](#)  
Two new data systems go online.  
More [press releases](#).

**PRESS RELEASE**

**9/23/02**   
[Needlestick Prevention Resource Shares Lessons Learned](#)  
Information for protecting employees from the risk of job-related needlesticks.  
More [press releases](#).

**PRESS RELEASE**

**8/26/02**   
[Task Force Releases Recommendations](#)  
Dental sealant programs and water fluoridation are strongly recommended.

Internet

# Hvilken betydning har karies i et samfunnshelseperspektiv?

- WHO - World Health Organization
- Verdensbankens helse, kost og populasjonsstatistikk
- FDI - Federation Dentaire International

USA:

- CDC - Center for Disease Control
- NIDCR - National Institute of Dental & Craniofacial Research



## NIDCR National Institute of Dental and Craniofacial Research

Improving the Nation's Oral Health

NATIONAL INSTITUTES OF HEALTH

Health Information | Research | Funding | News & Reports | Clinical Trials | About NIDCR

### Health Information

- [Oral Health Information Index](#)
- [Order Publications](#)
- [Finding Dental Care](#)
- [NOHIC: Special Care Resources](#)
- [Kids and Teachers](#)
- [Statistics and Data](#)
- [Other Resources](#)

### Clinical Trials

- [Understanding Clinical Trials](#)
- [NIDCR Studies Seeking Patients](#)
- [Other NIH Studies](#)
- [Clinical Trials Education Tools](#)
- [Information for Investigators](#)

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- [Research Digest](#)
- [Calendar of Events](#)
- [Reports](#)

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- [Funding Mechanisms](#)
- [Research Supplements](#)
- [Grant Application and Review Process](#)
- [Clinical Trials](#)
- [Training](#)
- [Funding to U.S. Schools](#)

### Research

- [Long Range Research Opportunities](#)
- [Research Sponsored by NIDCR](#)
- [Research Conducted at NIDCR](#)
- [International Activities](#)
- [Technology Transfer](#)
- [Research Resources](#)

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- [Mission Statement](#)
- [Strategic Plan](#)
- [Council and Committees](#)
- [Organization](#)
- [Staff Directory](#)
- [Job Openings](#)

### Highlights

- [First National Conference on Dentistry's Role in Bioterrorism](#)
- [First Meeting of Salivary Diagnostics Group](#)
- [NIDCR/CDC Dental, Oral and Craniofacial Data Resource Center](#)
- [Long-Range Research Opportunities](#)
- [Oral Health in America: Report of the Surgeon General](#)
- [Health Disparities](#)

### Información en español

[ [NIDCR Home Page](#) | [Contact us](#) | [Accessibility](#) | [Privacy statement](#) | [Kids' privacy notice](#) | [Disclaimer](#) | [Search](#) ]

Image in banner: magnified fluoride crystal





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samfunnshelseperspektiv?

## Samfunnsøkonomisk gevinst

Forebyggelsen av tannhelsesykdom har resultert i en estimert akkumulert samfunnsgevinst på ca. 360 milliarder norske kroner i løpet av de siste 40 årene i USA.

National Institute of Dental & Craniofacial Research, Natl. Inst. Health. J Dent Res 2000; 79: 893-904.


# NIH: Consensus Development Conference on Diagnosis and Management of Dental Caries Throughout Life

UM Library: NIH: Consensus Development Conference on Diagnosis and Management of Dental Caries - Microsoft Internet Explorer

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Address <http://www.lib.umich.edu/dentlib/nihcdc/agenda.html> Go Alexa Site Info Ranking: 47,690 Related Links Search Links

 **NIH CDC on Caries**  
UNIVERSITY LIBRARY - Dentistry Library

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## NIH: Consensus Development Conference on Diagnosis and Management of Dental Caries Throughout Life: Agenda

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[Monday 3/26](#) | [Tuesday 3/27](#) | [Wednesday 3/28](#)

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### Monday, March 26, 2001

**8:30** *Welcome and Introduction*  
Dushanka V. Kleinman, D.D.S., M.Sc.D., Deputy Director, National Institute of Dental and Craniofacial Research, National Institutes of Health

*Welcome and Charge to Panel*  
Barry Kramer, M.D. Director, Office of Medical Applications of Research, Office of Director, National Institutes of Health

*Purpose of Conference/Issues*  
Michael C. Alfano, D.M.D., Ph.D., Panel Chair, Dean, New York University College of Dentistry

**9:00** *Dental Caries in the Second Millennium* [[Abstract](#) | [Slides](#) (PDF: 258K)]  
Amid I. Ismail, B.D.S., M.P.H., Dr.P.H., Professor, School of Dentistry, University of Michigan

### I. Methods for Reviewing the Evidence

**9:15** *Methods Employed for RTI/UNC Systematic Reviews* [[Abstract](#) | [Report Summary](#) (AHRQ) | [Full Report](#) (AHRQ)]  
James Bader, D.D.S., M.P.H., Research Professor, Sheps Center for Health Services and

Done Internet

# National Institutes of Health - Videosekvenser om kariologi

The screenshot shows a Microsoft Internet Explorer browser window displaying the NIH VideoCasting website. The address bar shows the URL <http://videocast.nih.gov/PastEvents.asp>. The page title is "NIH VideoCasting". The main content area shows search results for the query "dental dentistry". The search results are as follows:

- Search Results: "dental dentistry"**  
Returned 9 record(s)
- A FIBRONECTIN-FAK SIGNALING AXIS: HOW SPECIAL IS IT?**  
Wednesday, April 19, 2000  
Author/Sponsor: Caroline Damsky, Ph.D. Professor and Vice Chair, Department of Stomatology School of Dentistry, UCSF  
Total Running Time: 00:51:10  
Bandwidth: 146 Kbps  
This is a work of the United States Government. No copyright exists on this material. It may be disseminated freely.
- Craniofacial Research Open Session**  
Thursday, September 21, 2000  
Author/Sponsor: Larry Tabak, DDS, Ph.D. National Institute of Dental and Craniofacial Research National Institutes of Health  
Total Running Time: 05:17:02  
Bandwidth: 33 Kbps  
This is a work of the United States Government. No copyright exists on this material. It may be disseminated freely.
- FACING THE NEW MILLENNIUM**  
Monday, October 10, 1999  
Author/Sponsor: Sponsored by the National Institute of Dental & Craniofacial Research  
Total Running Time: 04:48:31

NIH Consensus  
Development Conference  
on Diagnosis and  
Management of Dental  
Caries Throughout Life

DAG 1

DAG 2

DAG 3

# Hvilken betydning har karies i et samfunnshelseperspektiv?

- WHO - World Health Organization
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Norge ???!

# Hensikter med kariesepidemiologi

1. Studere trender i oral helse og sykdom over tid
2. Reallokering av forebyggende tiltak
3. Evaluering av programmer
4. Kartlegging av behandlingsbehov
5. Oral helse på dagsorden

# Kariesepidemiologiske data i Norge gjennom 20 år

- Barn og ungdom
- Rekrutter
- Voksne
- Institusjon /eldre



1. Studere trender i oral helse og sykdom over tid
2. Reallokering av forebyggende tiltak
3. Evaluering av programmer
4. Kartlegging av behandlingsbehov
5. Oral helse på dagsorden

# Kariesepidemiologiske studier i Norge 1982-2002

## ■ Barn og ungdom

- Helsedirektoratet årsmeldinger 5, 12, 18år: 1984 - 2002
- Ole Haugejorden
- Fr Ramm von der Fehr
- Jan M Birkeland
- Nina Wang 1990-2000

1. Studere trender i oral helse og sykdom over tid
2. Reallokering av forebyggende tiltak
3. Evaluering av programmer
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# Kariesepidemiologiske studier i Norge 1982-2002

## ■ Rekrutter

- Birkeland/Asmyhr/Grytten 1994

## ■ Voksne

- Trøndelag. 1983 (Bærum ea. Helsetilsynet)
  - 1994 (Schuller/Holst 1998 – 2001)
- Oslo. Berset/Bjertness/Eriksen/Hansen 1977 – 1992

## ■ Eldre

- Heløe / Holst / Rise 1984 – 1988
- Axell 2001/2002

## ■ Institusjon

- Ambjørnsen/Jokstad 1986-1996



# Karies i Norge – vi vet at

- Karies er blitt kraftig redusert i de siste 30 årene
- Karies er fortsatt relatert til geografi og levekår – det eksisterer ulike risikogrupper
  - » Immigrantbakgrunn, utdanningsnivå, leskedrikk, sukkerinntak,
- Mest vanlig er fissurkaries;
  - glattflate- og fortannskaries er nesten borte;
  - sekundærkaries er en viktig faktor

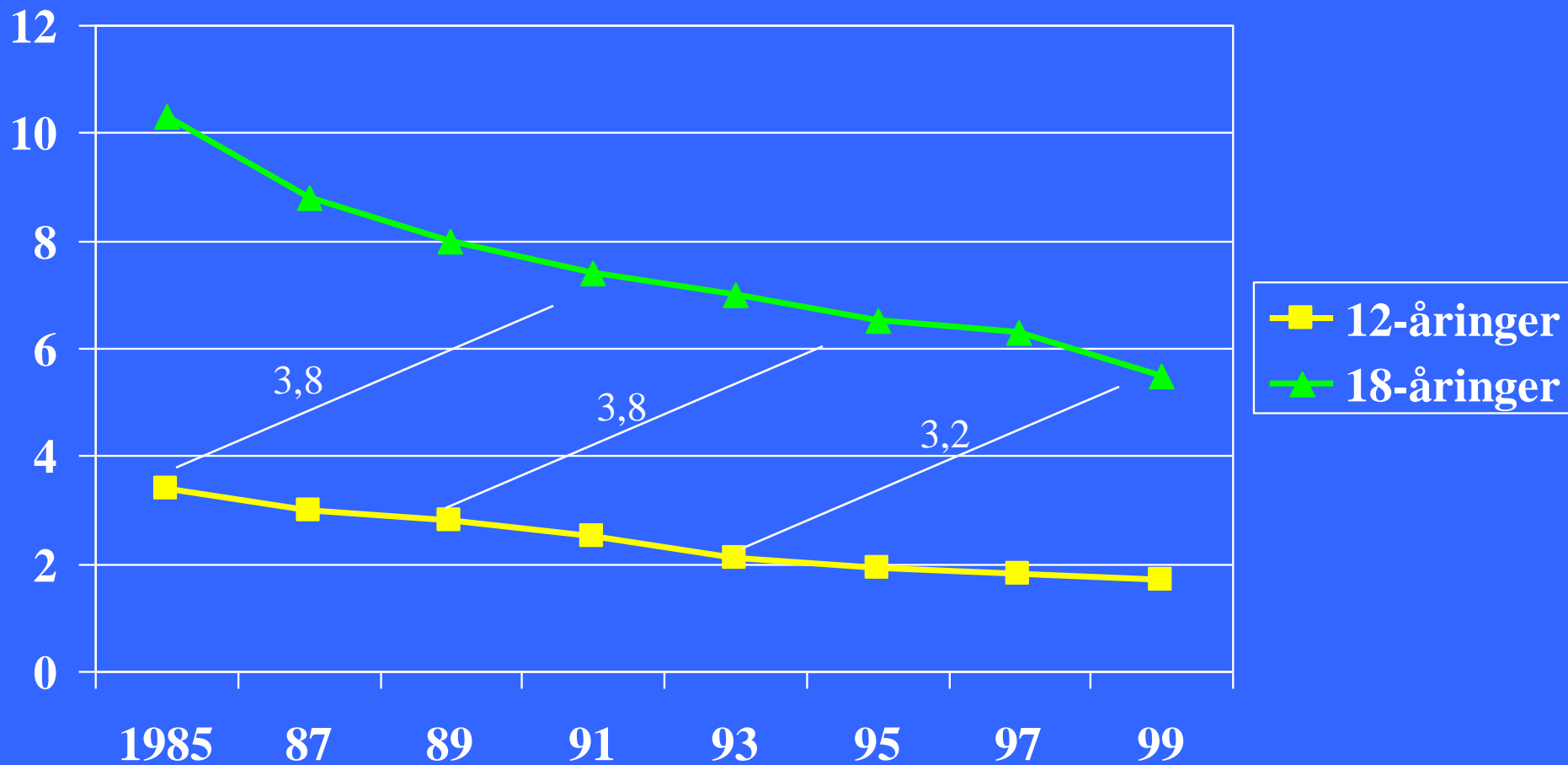
# Hvordan manipulere med tall?

- Antall tenner ekstrahert pga karies e.g. pr 100 barn
- DMFT .....sekundærkaries?
- Antall fyllte tannflater (FS)
- Flater fylt per individ per år
- Andel barn/individer uten kaviteter
- dmft
- Kalibrering og diagnostikk??!!



# Kariesutvikling i Norge

DMFT hos 12- og 18-åringer



Karieserfaring  
35- åringer i  
Oslo

1963

21.6 DMFT  
68.2 DMFS  
48.4 FS  
15.7 FT  
3.2 DT  
2.8 MT

1993

14.8 DMFT  
40.9 DMFS  
34.1 FS  
13.1 FT  
0.7 DT  
1 MT



# Eldre i institusjon

|                         | 1993  | 1980 | P*   |
|-------------------------|-------|------|------|
|                         | n=112 | n=38 |      |
| Dental treatment (DMFT) | 22.9  | 25.7 | .001 |
| Missing teeth (MT)      | 16.3  | 20.0 | .01  |
| Filled teeth (FT)       |       | 5.1  | 3.6  |
|                         | .16   |      |      |
| Decayed teeth (DT)      | 1.8   | 2.1  | .35  |
| Remaining roots (RR)    | 0.8   | 1.6  | .04  |

\* Mann-WhitneyU-test

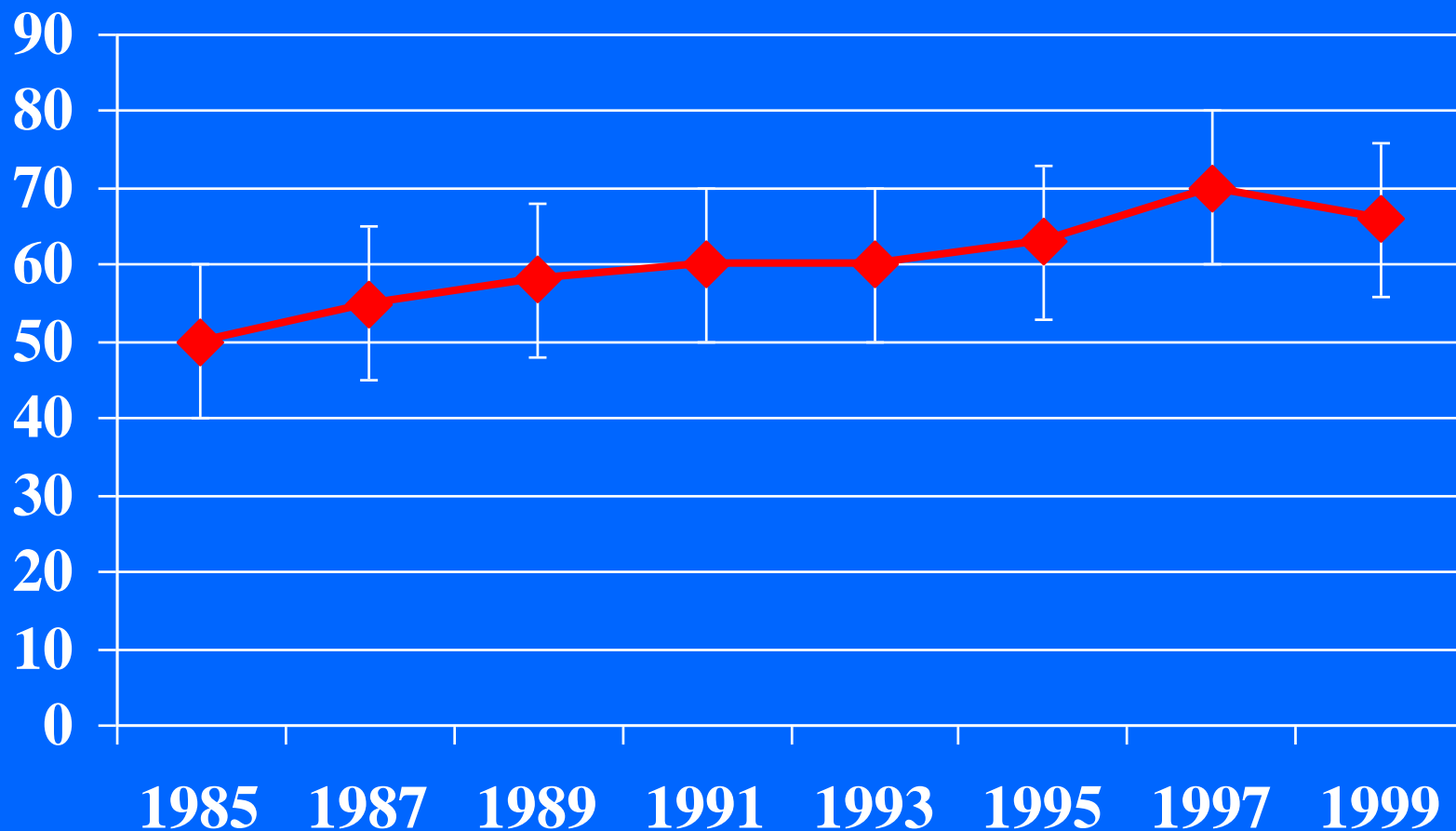
Jokstad A, Ambjørnsen E, Eide KE. Oral health in institutionalized elderly people in 1993 compared to in 1980. *Acta Odontologica Scandinavica*, 1996; 54: 303 - 308.

# Hva kan avdekkes - hos enkeltindivider?

- Karies opptrer symmetrisk
- Forekomst varierer i munnhulen:
  - ukj6 > okj6 > ukj7 > okj7 --- > ukjinc
- Utviklingsmønsteret avhenger av flate
- Fordelingsmønstre er typisk (nabotenner)

# Kariesutvikling i Norge

Prosentandel med dmft=0 hos 5-åringer





# Karies i Norge – vi vet ikke

- Hvilke tiltak som er mest hensiktsmessig som forebyggende tiltak på populasjonsnivå
  - Program - Fluor? Kosthold? Hygiene?
  - Personell
- Hvor stort behandlingsbehovet er blant prioritert klientell
- Om karies nå er økende blant barn og ungdom