

社區牙醫學概論
Community dentistry

全國口腔衛生指標

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學習目標

- WHO – Health for all
- US – Oral health in America
 - Healthy people 2010
- Japan – 8020
 - Healthy Japan 21

Health for All---WHO

- “Health for All by the year 2000”
 - the Alma-Ata Declaration on “Primary Health Care”, USSR, 1978
 - Jointly organized by the WHO's and United Nations Children's Fund
 - In 1979, WHA unanimously ratified it as having over-riding priority for the WHO

Global goals of oral health for the year 2000

- May 1981, WHO General Assembly
 - Not more than 3 DMFT at the age of 12
- Sep. 1981, FDI General Assembly
 - A series of oral health goals
 - 1st part (3): impact of dental caries during childhood years
 - 2nd part (2): avoidance of edentulous state and maintain functional dentition
 - 3rd part (1): data base needed for monitoring

From: Barnes, Int Dent J 33(1):60-66, 1982;
Greene. Int Dent J 33(1):67-72, 1982

Global goals of oral health for the year 2000

- Further develop WHO database of oral health
- 50% of 5-6 Y/O be caries free
- No more than 3 DMFT OF 12 Y/O
- 85% of 18 Y/O have all their teeth
- 50% reduction in edentulous of 35-44 Y/O than the level in 1969
- 25% reduction in edentulous of 65 Y/O than the level in 1969

From: Per Axelsson, An introduction to risk prediction and preventive dentistry, p114,2000

Global goals of oral health for the year 2010

- Complete WHO database of oral health
- 90% of 5 Y/O be caries free
- No more than 2 DMFT OF 12 Y/O
- 75% of 20 Y/O will be caries inactive
- 75% of 20 Y/O will not develop destructive periodontal disease
- > 75% of all children and young adult have sufficient knowledge to motivate self-diagnosis and self-care

From: Per Axelsson, An introduction to risk prediction and preventive dentistry, p114,2000

Global goals of oral health for the year 2025

- Complete WHO database of oral health
- 90% of 5 Y/O be caries free
- No more than 1 DMFT OF 12 Y/O
- 90% of 20 Y/O will be caries inactive
- 90% of the whole population will not develop destructive periodontal disease
- > 75% of the total population have sufficient knowledge to motivate self-diagnosis and self-care

From: Per Axelsson, An introduction to risk prediction and preventive dentistry, p114,2000

Global oral health index-WHO

- 2000
 - 50% 5-6 Y-O: caries free
 - DMFT index for 12 Y-O: no less than 3
- 2025
 - 90% 5 Y-O: caries free
 - DMFT index for 12 Y-O: no less than 1

最新世界蛀牙指數

- 2001年，DMFT = 1.74 (N = 128)
 - 128個會員國，約佔85%世界人口
 - 有70%國家之DMFT < 3
- 註：2000年台灣DMFT = 3.31

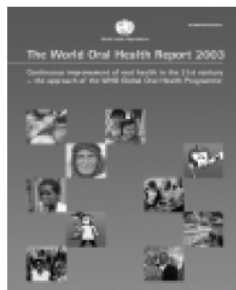
資料來源：WHO網站，
<http://www.whocollab.od.mah.se/expl/globalcar.html>,
 visited on 2004-5-15

最新世界蛀牙指數

- 2004年，DMFT = 1.61
 - 188個會員國，合計約61億3千3百萬人
 - 有74%國家之DMFT < 3
- (N = 139, 約佔86%世界人口)

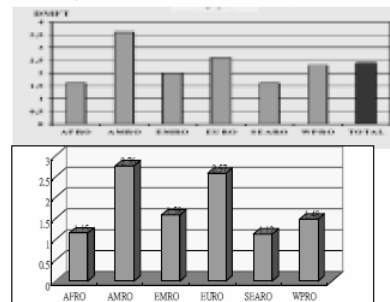
註：2006-2-26, 08:16 全球人口突破65億

資料來源：WHO網站
<http://www.whocollab.od.mah.se/expl/globalcar1.html>
 上網日期：2006-2-22

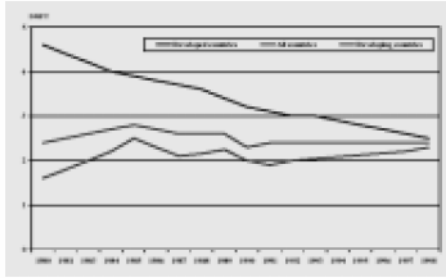


Poul Erik Petersen
 Oral Health Programme, Non-communicable Disease Prevention and Health Promotion, World Health Organization, Geneva, Switzerland

DMFT of 12 Y-O children (WHO, 2000 & 2004)



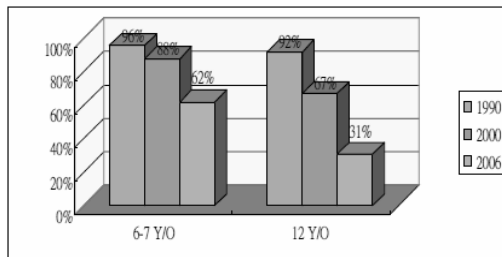
World Trend of Dental Caries (12 Y-O)



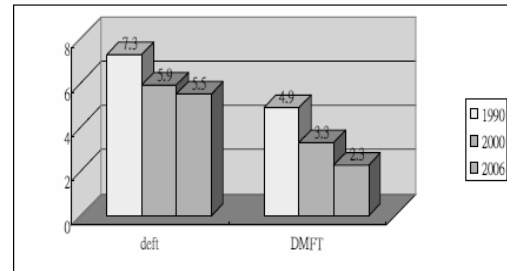
The oral health status of students-2006,DOH

age	Caries prevalence	deft/DMFT Index		
		dt	et	ft
6	61.5%	deft index: 5.31		
		2.66	0.57	2.47
12	31.2%	DMFT index: 2.28		
		DT	MT	FT
		0.73	0.09	1.46
15	56.0%	DMFT index: 4.44		
		DT	MT	FT
		2.07	0.23	2.13
18	50.8%	DMFT index: 5.06		
		DT	MT	FT
		1.66	0.20	3.19

Dental caries prevalence rates of students in Taiwan



deft / DMFT index of students in Taiwan



各國12歲學童DMFT之比較-1

坦尚尼亞	0.3	2004	中國	1.03	1995
索及利亞	0.5	2004	美國	1.1	2004
印度	0.5	2003	埃及	1.2	1991
英國	0.7	2005	伊拉克	1.3	1991
荷蘭	0.8	2002	伊索匹亞	1.5	2000
澳洲	0.8	2000	泰國	1.6	1994
香港	0.8	2001	伊拉克	1.7	2003
丹麥	0.8	2006	挪威	1.7	2004
瑞士	0.9	2004	德國	1.7	1997
新加坡	1	2002	南非	1.7	1989
瑞典	1	2005	肯亞	1.8	1986
			法國	1.9	1998
			丹麥	1.9	1997

資料來源：<http://www.whocollab.od.mah.se> 2008-5-17 圖表製作：黃耀慧 醫師

各國12歲學童DMFT之比較-2

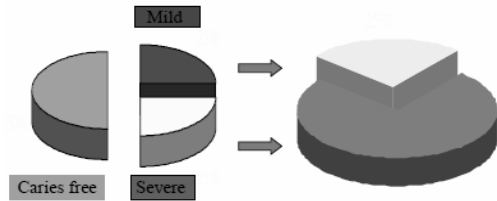
澳門	2	1994	北韓	3	1991
義大利	2.1	1996	巴西	3.1	1996
印尼	2.2	1995	南韓	3.1	1995
西班牙	2.3	1994	聖文森	3.2	1991
日本	2.4	1999	以色列	3.3	1989
墨西哥	2.5	1997	阿根廷	3.4	1987
科威特	2.6	1993	巴拿馬	3.6	1997
土耳其	2.7	1988	加拿大	3.7	1991
阿富汗	2.9	1991	匈牙利	3.8	1996

資料來源：<http://www.whocollab.od.mah.se> 2008-5-17 圖表製作：黃耀慧 醫師

各國12歲學童DMFT之比較-3

波蘭	4	1998
智利	4.1	1996
保加利亞	4.2	1998
菲律賓	4.6	1998
玻利維亞	4.7	1995
哥倫比亞	4.8	1984
多明尼加	4.9	1997
薩爾瓦多	5.1	1989
美三比克	5.5	1983
巴拉圭	5.9	1983
貝里斯	6	1989
秘魯	7	1990
羅馬尼亞	7.3	1998
瓜地馬拉	8.1	1987

Skew distribution of dental caries ~1-17 y/o, US, 1988-1991



資料來源：Kaste et.al. J Dent Res 1996;75(spec issue):631-41
圖表製作：黃耀慧 醫師

SiC 指數 (Significant Caries Index)

- 瑞典Malmo大學的Douglas Bratthall教授於2000年提出
- 加強對一個群體中具有高齲齒指數個人之重視程度
- 計算方法：先將整個群體的DMFT index值，由高至低依序排列，取其中數值最高的前三分之一，計算這些人DMFT的平均值

參考資料：黃耀慧，認識WHO最新齲齒指數-SiC index，
中華牙醫學會訊 No.193:35-37, 2005

SiC 指數與DMFT指數之比較

學名	DMFT	SiC
瑞典加	1.0	2.8
塞內加爾	1.2	2.8
英國	1.4	3.5
斯里蘭卡	1.4	3.6
美國	1.4	3.6
瑞典	1.7	4.1
蘇格蘭	1.8	4.3
法國	2.0	4.7
墨西哥	2.5	5.0
厄瓜多爾	2.8	5.7
索馬里	4.0	7.5
波利維亞	4.7	8.8
哥倫比亞	8.5	13.7

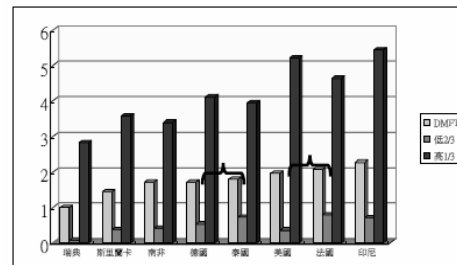
資料來源：Nishi M. Caries experience of some countries and areas expressed by the Significant Caries Index. Community Dent Oral Epidemiol. 30:296-301, 2002

SiC 指數與DMFT指數之比較~瑞士

year	DMFT	SiC	Caries Free(%)
1964	7.94	13.1	0.8
1968	5.64	9.31	5.9
1972	4.96	8.3	8.7
1976	3.64	6.36	16.8
1980	2.99	5.79	29.4
1984	2.23	5.06	39.7
1988	1.58	3.93	53.1
1992	1.13	3.2	63.4
1996	0.82	2.45	72.3
2000	0.87	2.58	68.9

資料來源：Community Dent Oral Epidemiol, 2005; 33:159-166
圖表製作：黃耀慧 醫師

12歲學童DMFT index輕重比較圖



資料來源：Douglas Bratthall. Introducing the Significant Caries Index together with a proposal for a new global oral health goal for 12-year-olds. Int Dent J. 50:378-384, 2000

最新全球口腔健康指標

- 1979年WHO宣布：2000年→ $DMFT \leq 3$, for age=12
- 2000年WHO提出：2015年→
 $SiC \leq 3$, for age=12

參考資料：黃耀慧，認識WHO最新齦齒指數-SiC index，
中華牙醫學會訊 No.193:35-37, 2005

Oral Health in America: *A Report of the Surgeon General*

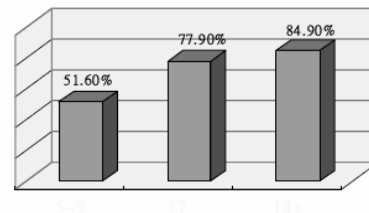
David Satcher, M.D., Ph.D
Washington, DC
May 25, 2000

The first-ever Surgeon General's report on oral health

- The 51st Surgeon General's report issued since 1964
- identifies a **"silent epidemic"** of dental and oral diseases that burdens **some population groups**
- calls for a national effort to improve oral health among all Americans

資料來源：http://www.surgeongeneral.gov/news/pressreleases/pr_oral_52000.htm
visited on 2005/8/31

Caries prevalence rate increased with age in US



資料來源：Oral Health in America: A Report of the Surgeon General, p63, 2000
圖表製作：黃耀慧醫師

The key points of this report

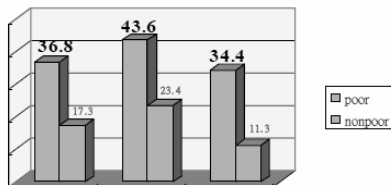
- Oral health means much more than healthy teeth
- Oral health is integral to general health
- Safe and effective disease prevention measures exist that everyone can adopt to improve oral health and prevent disease
- **There are profound disparities in the oral health of Americans**
- General health risk factors, such as tobacco use and poor dietary practices, also effect oral and craniofacial health

資料來源：<http://www.surgeongeneral.gov/library/oralhealth/spchoral.htm>
Visited on 2005-8-31

Profound disparities in the oral health of Americans

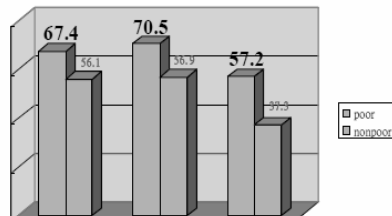
- Those without the knowledge or resources to achieve good oral care
- Those who suffer the worst oral health include poor Americans, especially children and the elderly
- Those with disabilities and complex health conditions
- Members of racial and ethnic groups

Percentage of poor and nonpoor have at least one untreated caries



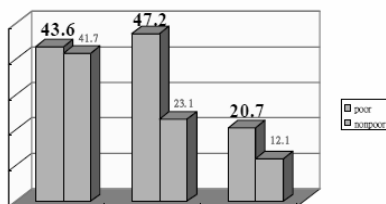
(Primary teeth only)(Primary + permanent teeth) (Permanent teeth only)
資料來源： Oral Health in America: A Report of the Surgeon General, p63, 2000
圖表製作：黃耀慈 醫師

Percentage of children (aged 2~9) by racial groups have at least one untreated caries



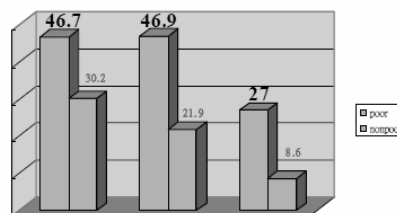
資料來源： Oral Health in America: A Report of the Surgeon General, p63, 2000
圖表製作：黃耀慈 醫師

Percentage of children (aged 12~17) by racial groups have at least one untreated caries



資料來源： Oral Health in America: A Report of the Surgeon General, p64, 2000
圖表製作：黃耀慈 醫師

Percentage of children (aged 18+) by racial groups have at least one untreated caries



資料來源： Oral Health in America: A Report of the Surgeon General, p64, 2000
圖表製作：黃耀慈 醫師

What Is Healthy People

- A set of strategic management tool that identifies the most significant preventable threats to health
- A simple but powerful idea
 - To provide the information and knowledge about how to improve health
- A road map to better health for all, can be used by
 - Many different people
 - States and communities
 - Professional organizations
 - Groups whose concern is a particular threat to health, or a particular population group
- Based on scientific knowledge and used for decision-making and for action

What Is Healthy People 2000

- **Healthy People 2000**
 - 1979, The Surgeon General's Report "*Healthy People*" laid the foundation for a national prevention agenda
 - 1980, The *Promoting Health/Preventing Disease: Objectives for the Nation*
 - 1990, Healthy People 2000: National Health Promotion and Disease Prevention Objectives
 - established national health objectives and developed State and community plans

What Is Healthy People 2010

- *Healthy People 2010*
 - builds on initiatives pursued over the past two decades
 - the United States' contribution to the World Health Organization's (WHO) "Health for All" strategy
 - Objectives developed from Nov. 1996 to fall of 1998

Goals of Healthy People 2010

- ✓ Goal 1: Increase Quality and Years of Healthy Life
- ✓ Goal 2: Eliminate Health Disparities

Healthy People 2010– Oral health

- **Goal--**
 - **Prevent and control oral and craniofacial diseases, conditions, and injuries and improve access to related services**

Healthy People 2010– *Objectives on Oral health*

1. Dental caries experience
2. Untreated dental decay
3. No permanent tooth loss
4. Complete tooth loss
5. Periodontal diseases
6. Early detection of oral and pharyngeal cancers
7. Annual examinations for oral and pharyngeal cancers
8. Dental sealants
9. Community water fluoridation

Healthy People 2010– *Objectives on Oral health*

10. Use of oral health care system
11. Use of oral health care system by residents in long-term care facilities
12. Dental services for low-income children
13. School-based health centers with oral health component
14. Health centers with oral health service components
15. Referral for cleft lip or palate
16. Oral and craniofacial State-based surveillance system
17. Tribal, State, and local dental programs

Healthy People 2010 口腔健康指標

目標	1990-95	2010目標
1. 降低兒童及青少年的齲齒經驗		
a. 幼童乳牙 (2-4歲)	18%	11%
b. 兒童乳牙及恆牙 (6-8歲)	52%	42%
c. 青少年恆牙 (15歲)	61%	51%
2. 降低各年齡層的未治療齲齒		
a. 幼童乳牙 (2-4歲)	16%	9%
b. 兒童乳牙及恆牙 (6-8歲)	29%	21%
c. 青少年恆牙 (15歲)	20%	15%
d. 成人未 (35-44歲)	27%	15%
3. 降低成人因齲齒拔牙用病拔牙	65%	58%
4. 降低老年人(65-74歲)全口無牙	26%	20%
5. 減少牙周病(35-44歲)	48%	41%
a. 牙周炎	22%	14%
b. 慢性牙周病		
6. 增加早期診斷口腔咽喉癌	35%(1990-95)	50%
7. 增加成人一年內檢查口腔咽喉癌	13%(1998)	20%

全文登載於「台灣牙醫界」2005年24卷11期

Healthy People 2010 口腔健康指標

目標	2000年	2010年
8. 增加兒童恆牙白齒溝隙封填 a. 9歲 b. 14歲	23% 15%	50% 50%
9. 增加民眾享有社區飲水加氟比率	62%(1992)	75%
10. 增加口腔健康照護系統利用率	44%(1996)	56%
11. 增加長期照護住戶口腔健康照護系統利用率	19%(1997)	25%
12. 增加低收入戶兒童預防牙醫服務	20%(1996)	57%
13. 增加學校健康中心設置口腔健康部門	未詳列	未詳列
14. 增加社區健康中心設置口腔健康部門	34%	75%
15. 增加嬰幼兒顯面畸形登錄與轉診	23州(1997)	全國
16. 建構口腔及顯面健康監測系統	無(1999)	全國
17. 增加具有公衛背景之牙科專業人員有效推廣牙科公共衛生計畫	未詳列	未詳列

History of 82-20 Movement

- 1989, proposal of the 80-20 Movement
- 1992, launching of programs to promote the 80-20 Movement
- 1993, projects to support promotion of the movement
- 1999, national oral health survey
- 2000, special programs to further the 80-20 Movement

Percentage of Persons with ≥ 20 of Their Own Teeth

Age	Average number of teeth per person		% of persons with ≥20 of their own teeth	
	1993	1999	1993	1999
75-79	6.72	9.01	10.00	17.50
80-84	5.14	7.41	11.70	13.00
80 (est.)	5.93	8.21	10.85	15.25

資料來源：8020推進財團網站，
<http://www.8020zaidan.or.jp/newtest3/english/dhj.html>, visited on 2009/5/10
表格製作：黃耀慧 醫師

Healthy Japan 21

- Started from April 2000
- aimed at promoting national health in the 21st century
- 100 indicators for 70 items covering 9 medical disciplines

Healthy Japan 21

- to achieve 3 objectives:
 - Lowering the ratio of early death
 - Achieving health in period during which people can live independently without suffering from dementia or being bedridden
 - Raising the quality of life by preventing lifestyle diseases

Dental Health Goals of Healthy Japan 21

Goal	Current	2010
1. Preventing teeth from decay during childhood		
(1) Three-year-olds without decayed teeth	59.5%	80% or more
(2) Three-year-olds who have received fluoride painting	39.6%	50% or more
(3) 18-month-olds habitually taking sweetened food and drink between meals	29.9%	Reduced as much as possible

Dental Health Goals of Healthy Japan 21

Goal	Current	2010
2. Preventing teeth from decay during school age		
(1) Average number of decayed teeth per twelve-year-old	2.9	One tooth or less
(2) Schoolchildren who use fluoride-modified toothpaste	45.6%	90% or more
(3) Schoolchildren who have received individual guidance in oral and dental hygiene in the past year	12.8%	30% or more

Dental Health Goals of Healthy Japan 21

Goal	Current	2010
3. Preventing periodontal disease during adulthood		
(1) Adults aged 40 & 50 who have progressive periodontitis	32.0%	22% or less
(2) Adults aged 35 -44 & 45-54 who use interdental cleaning tools	46.9%	33% or less
(3) Diffusing knowledge of the effects of smoking on health	19.3%	50% or more
(4) Spreading programs for support in trying to stop smoking	17.8%	50% or more

Dental Health Goals of Healthy Japan 21

Goal	Current	2010
4. Preventing loss of teeth		
(1) Persons who have 20 or more of their own teeth at age 80	11.5%	20% or more
Persons who have 24 or more of their own teeth at age 80	44.1%	50% or more
(2) Persons aged 60 who received regular scaling and dental cleaning in the past year	15.9%	30% or more
(3) Persons aged 60 who received regular dental checkups in the past year	16.4%	30% or more

Summary

- Global goals of oral health of the year 2000
- Global oral health index – WHO
- Dental caries prevalence rates of students in Taiwan
- Healthy Japan 21
- Dental Health Goals of Healthy Japan 21

資料來源

- Barmes, Int Dent J 33(1) : 60-66, 1982; Greene, Int Dent J 33(1) : 67-72, 1982
- Per Axésson, An introduction to risk prediction and preventive dentistry, p114, 2000
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- Kaste et.al. J Dent Res 1996; 75(spec issue) : 631-41
- 認識WHO最新齲齒指數-SIC index, 中華牙醫學會訊No.193 : 35-37, 2005
- Nishi M., Caries experience of some countries and areas expressed by the Significant Caries Index. Community Dent Oral Epidemiol. 30 : 296-301,2002
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- Douglas Bratthall, Introducing the Significant Caries Index together with a proposal for a new global oral health goal for 12-year-olds. Int Dent J, 50 : 378-384, 2000
- <http://www.surgeongeneral.gov/news/pressreleases/proral52000.htm>, visited on 2005/8/31