

FOOT & ANKLE

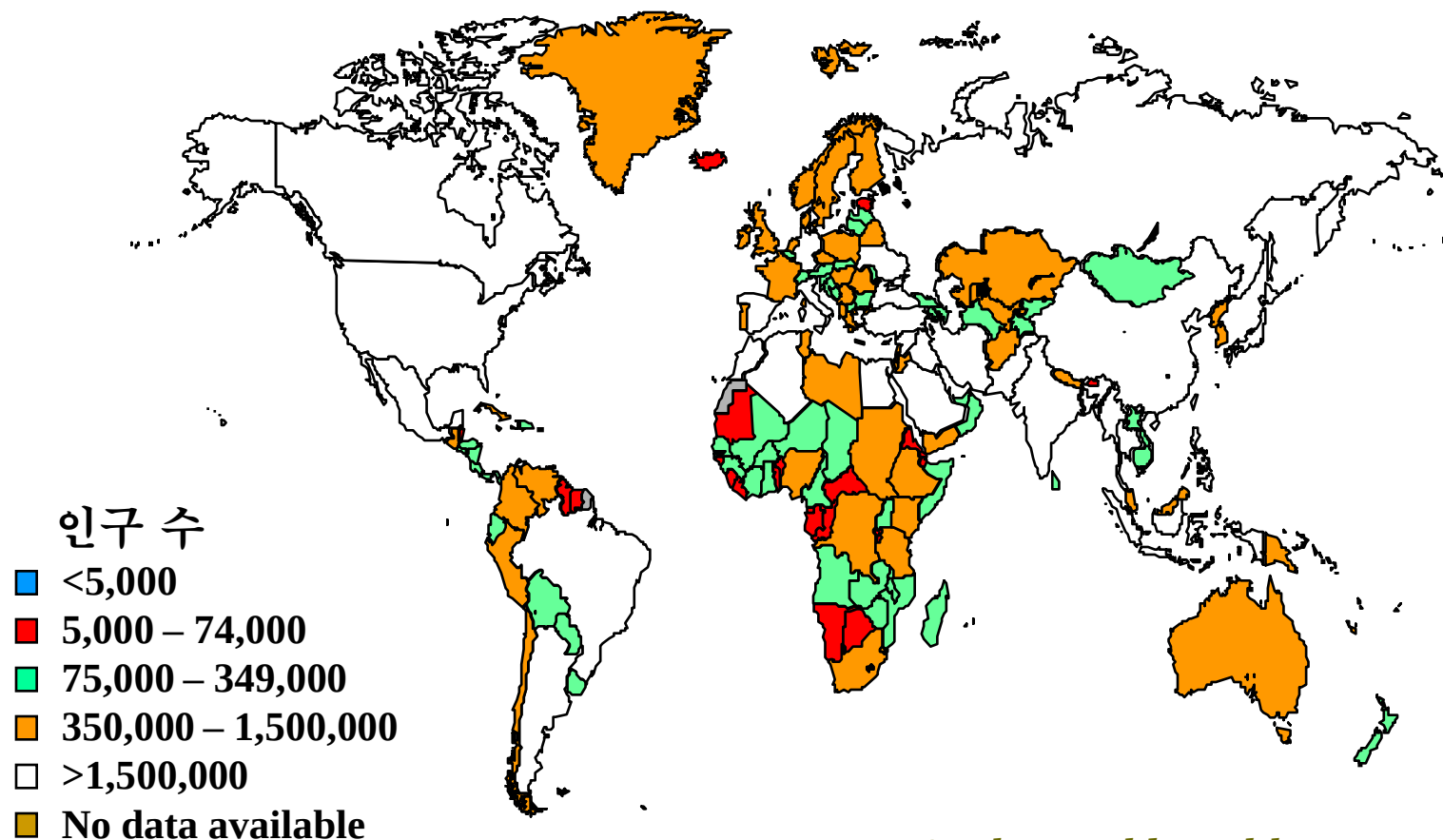
DM Foot : Epidemiology

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2025년 전세계적인 당뇨병 유병율의 예측

전세계적으로 3억명 예상



WHO. The World Health Report 1998; 91.

Epidemiology of Diabetic Foot Disease

- More than 50% of all people with diabetes have risk factors for foot complications and 15% to 20% of them will develop a foot ulcer during their lifetime
- A lower-extremity amputation (LEA) will be performed in up to 30% of DFU patients
- 50-70% of all non-traumatic amputations are performed in persons with diabetes
- 85% of diabetes related amputations are precipitated by a foot ulcer
- 4 out of 5 ulcers are preceded by trauma: potential for prevention

Incidence ; USA

- **15 % occurrence in total DM life**
(Palumbo PJ: Diabetes in America, 1985)
- **7.2 % DMF ulcer rate in DMNP**
(Abbott CA: Diabetes Care 21:1071, 1988)
- **DMF : 20% of DM Admission**
(Williams DRR: Foot in Diabetes, 1994)
- **Amputation : 3% of DM**

Incidence ; Europe England

- **< 70 years , 750,000 DM patients**

4% foot amputation

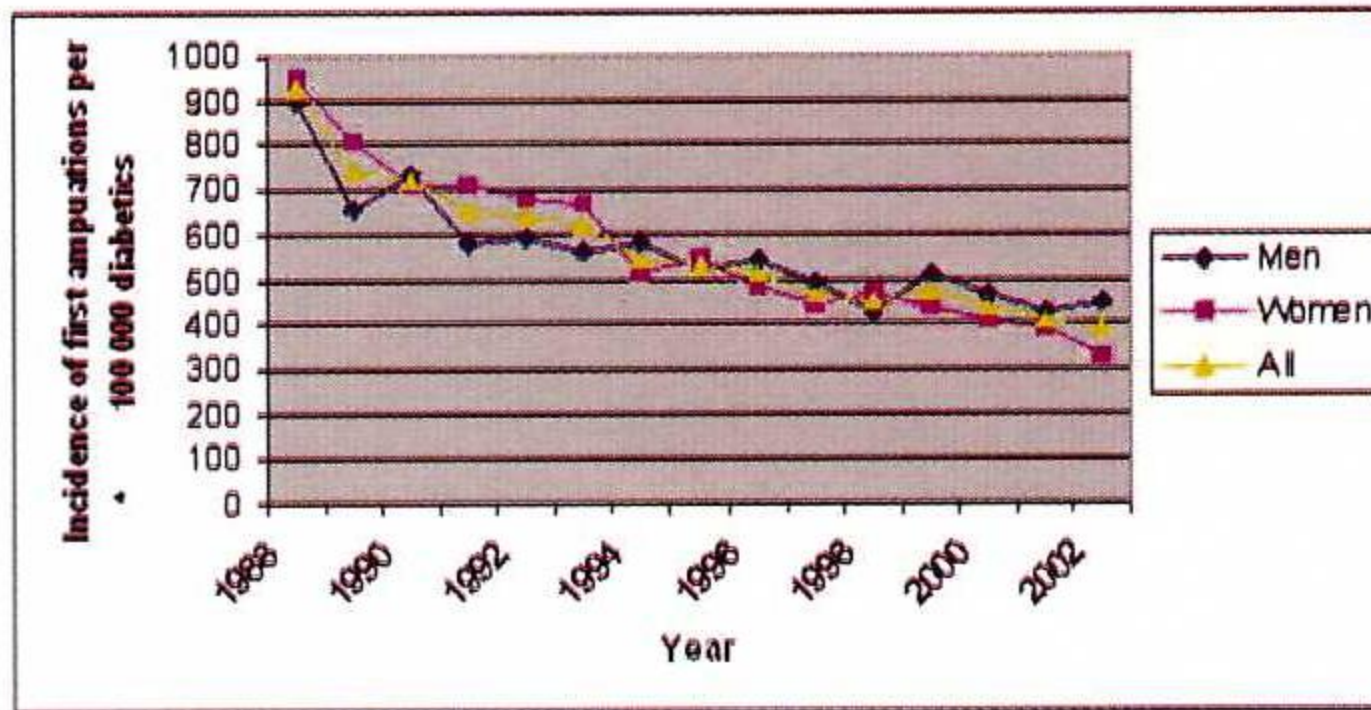
6% DMF ulcer

women 0.5% / men 3%

claudication

(Verhoeven S: Diabetic Med 8:435, 1991)

Finland



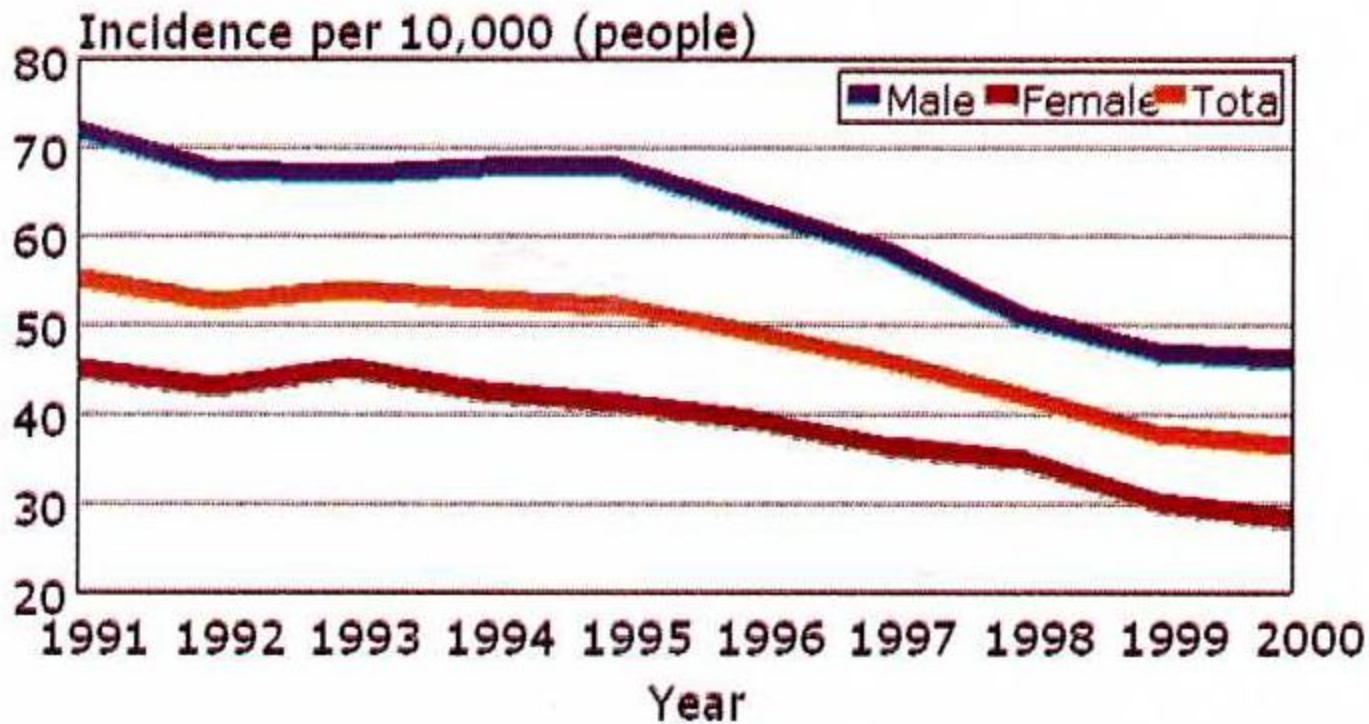
Winell et al., 2006

Finland

- Amputation Incidence (procedures)
 - Decrease from 92,4 to 38,7 per 10,000 diabetics
- Inverse correlation between number of vascular operations and number of first major amputations

Winell et al., 2006

The Netherlands



Van Houtum et al., 2004

The Netherlands

Incidence (people)

1991:	55.0 / 10,000 people with diabetes
↓	↓
2000:	36.3 / 10,000 people with diabetes

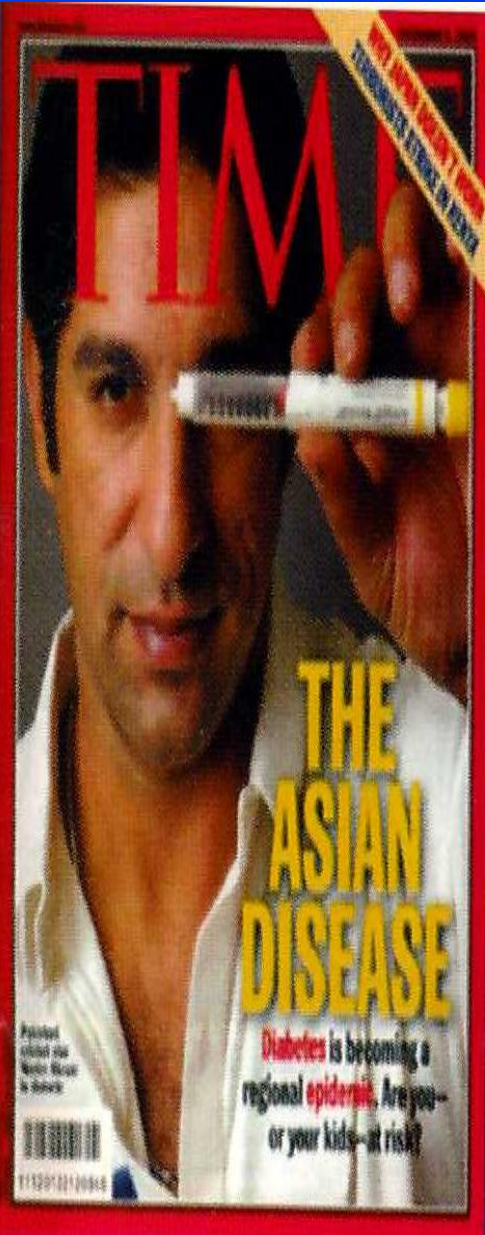
Van Houtum et al., 2004

Epidemiology showed that prevention
is possible

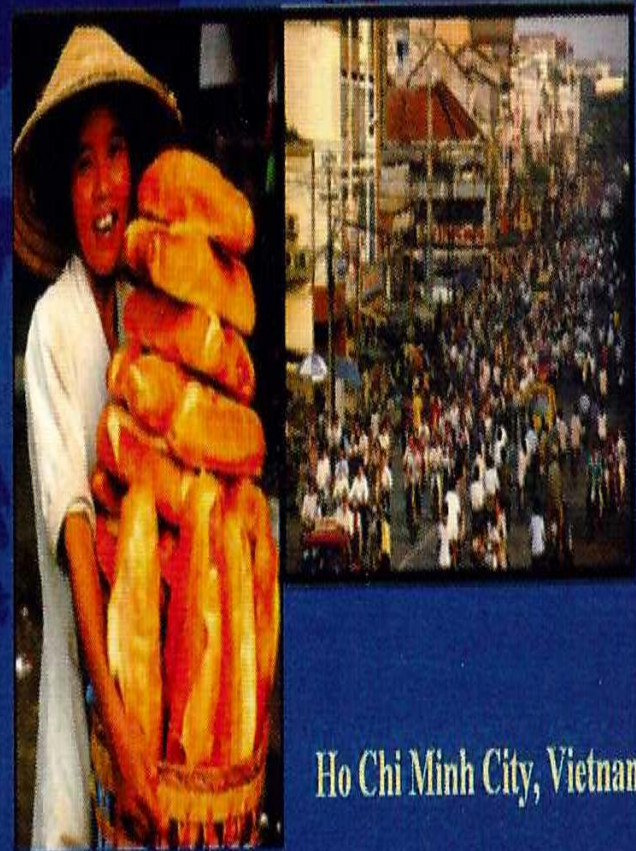
Multidisciplinary approach & protocolized
medicine:



45-85 % reduction in amputation



Lifestyle Changes in Asia



Ho Chi Minh City, Vietnam

ASIA

Prevalence of Diabetes in HK:

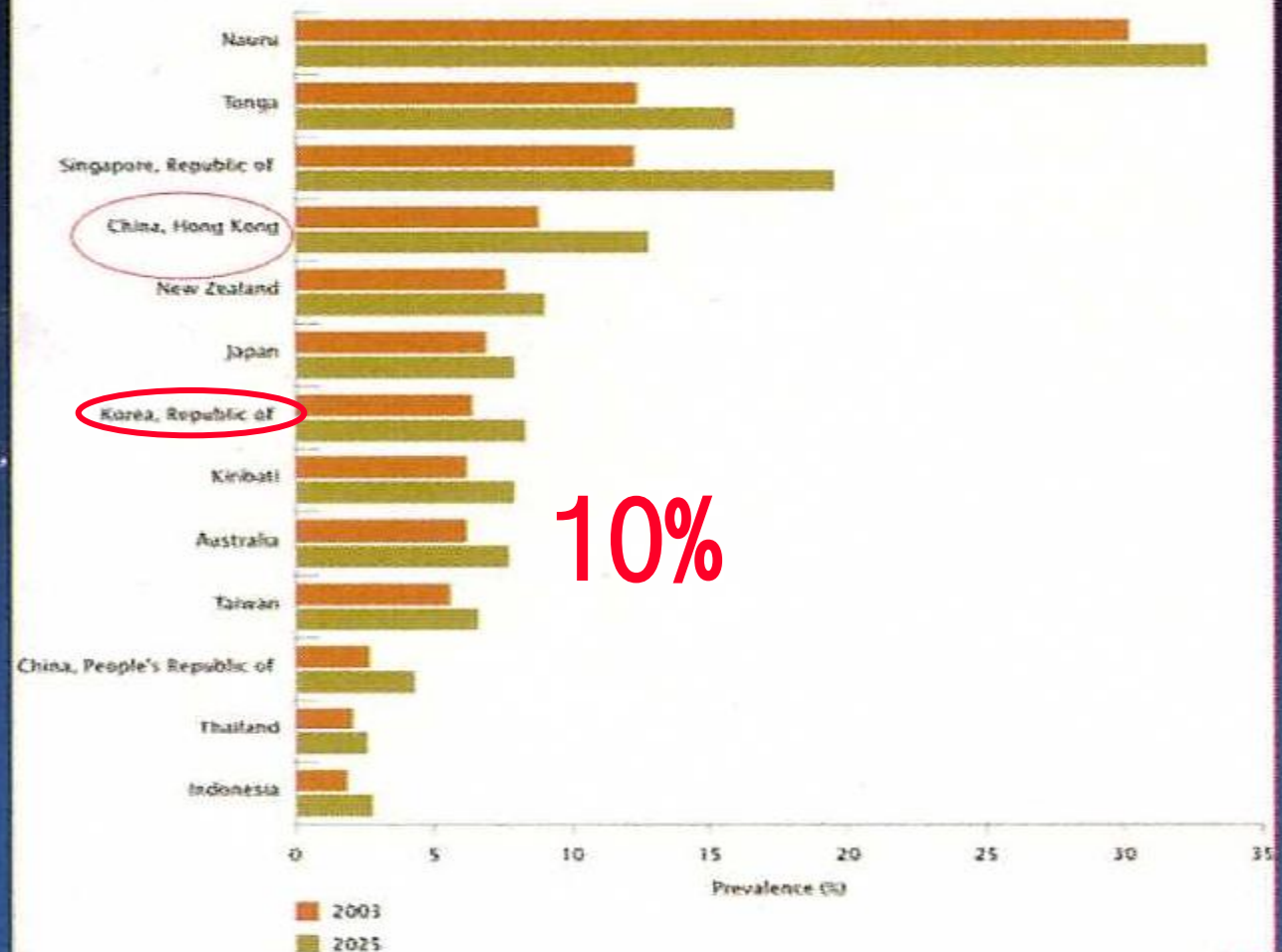
- 2003: 8.0 %

- 2025: 12.8 %

*Diabetes Atlas 2nd edition,
International Diabetes
Federation, 2003*

Figure 7.13

Prevalence estimates of diabetes in selected countries – Western Pacific Region



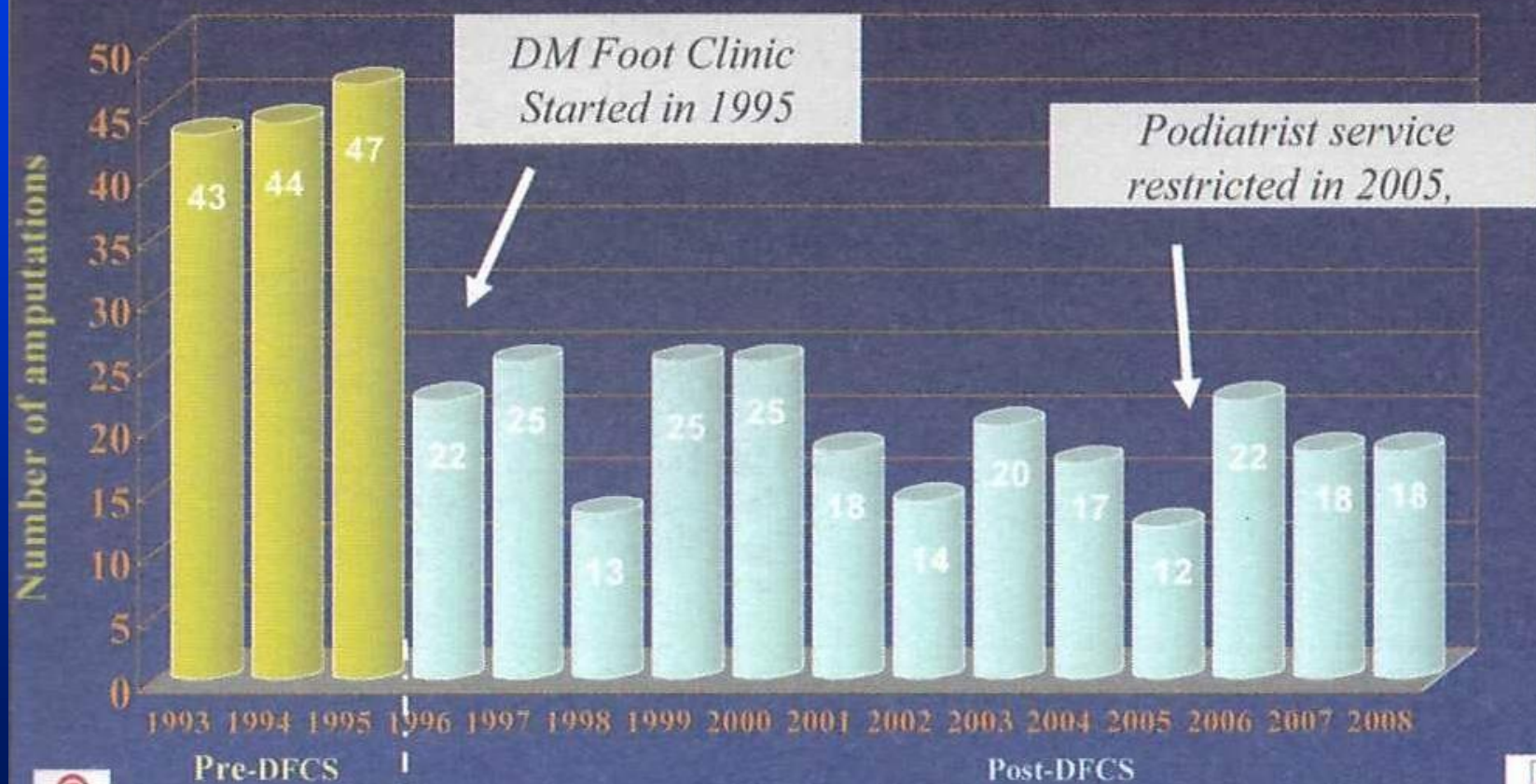
10%

Source: Diabetes Atlas second edition, ©International Diabetes Federation



Major lower limb amputations of diabetic foot problems in 16 years

(Above knee amputations & below knee amputations)
(from 1993 to 2008)



Kwong Wah Hospital
Dept. Of Orthopaedics & Traumatology



Japan

Diabetic Neuropathy and Foot Problems In Japan - The Japan Physicians Association Study 2000-

Multi-center Study
(1,232 Hospitals and Clinics)

12,821 Diabetic Patients
(Type 1: 6.5%, Type 2: 92.7%)

J Japan Phys Assoc 16 (2) (2001)

Diabetic Foot Ulcer in Japan - The Japan Physicians Association Study 2000-

- Foot Ulcer 119 cases
(Male 71 cases, Female 48 cases)
- Foot ulcer without neuropathy
30 cases / 8,112 cases (0.37%)
- Foot ulcer with neuropathy
89 cases / 4,709 cases (1.89%)

J Japan Phys Assoc 16 (2) 397 (2001)

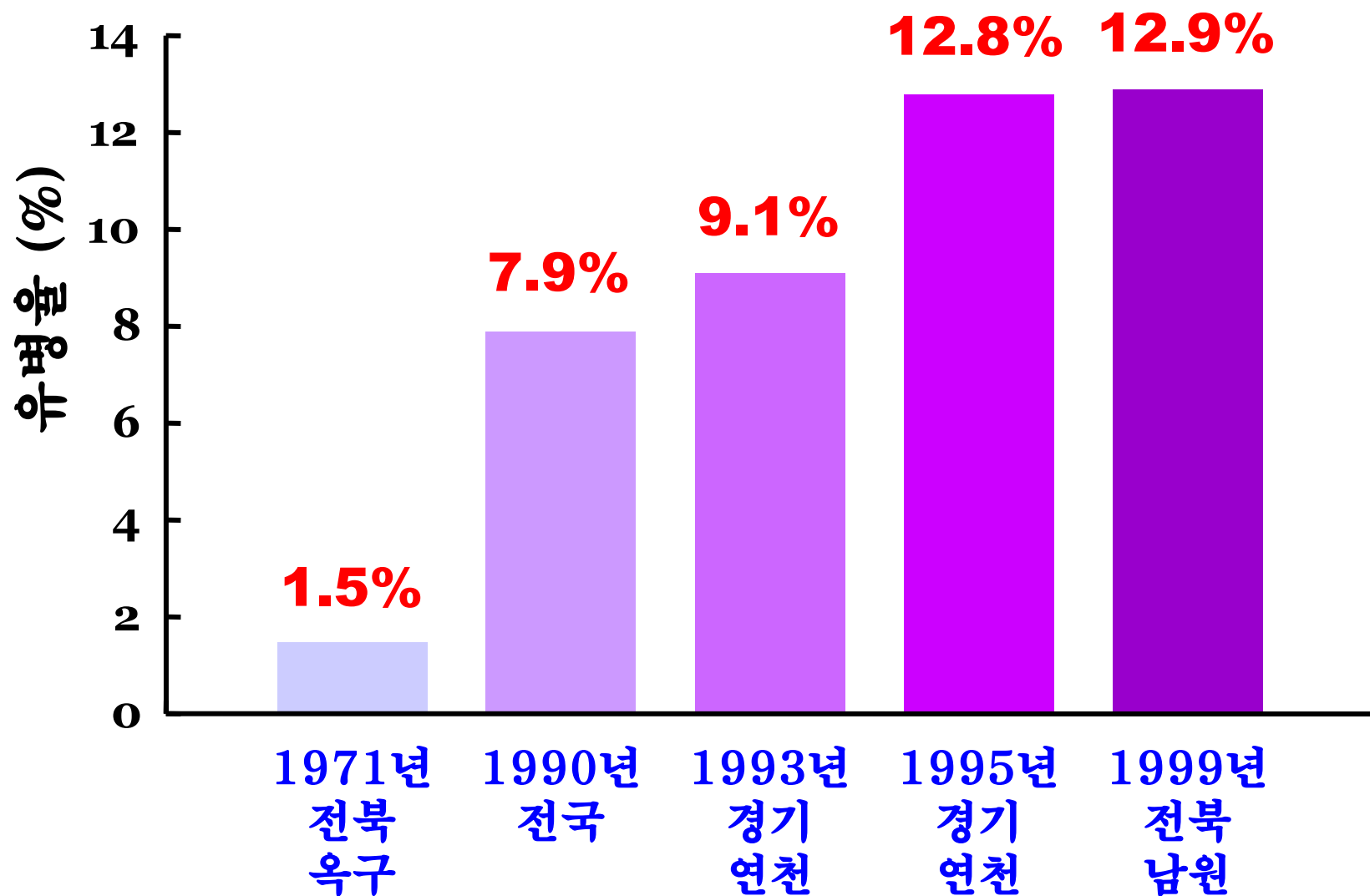
India

The Diabetic Foot in India

- 40.000 legs are amputated per year
- 90% of the amputations carried out in neuropathic feet with secondary infections (mostly preventable)
- Causative reasons and complicating factors:
 - Sociocultural habits (e.g. walking barefoot)
 - Cultural and religious beliefs
 - Socioeconomic factors
 - Lack of knowledge amongst patients and primary care physicians

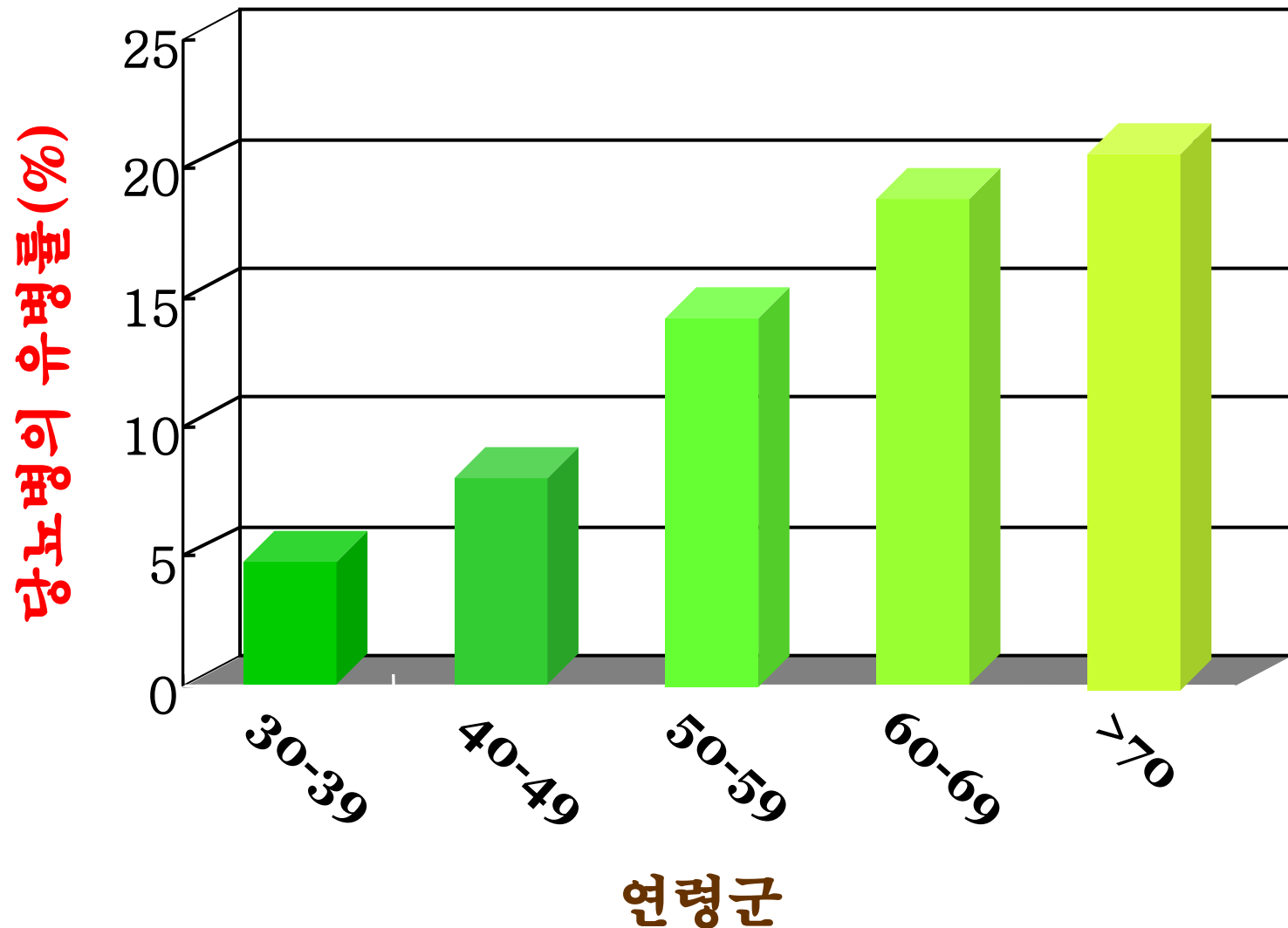
Ramachandran, 2004

한국에서 30세 이상 성인의 당뇨병 유병율의 변화



연령군에 따른 한국인 당뇨병 유병률

신찬수 등, 경기도 연천군, 1995





뉴스

라이프

검색

로그아웃

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"10년내 당뇨대란 우려"

식생활의 서구화와 고령화 등으로 당뇨병이 급증하고 있으며, 이로 인해 향후 10년 이내에 환자와 가족 등 우리나라 국민의 4분의 1 정도인 1천200만명 가량이 당뇨합병증으로 직간접적 피해를 입는 '당뇨대란'이 우려된다는 경고가 나왔다.

대한당뇨병학회는 10일 '한국인의 당뇨병 발생현황' 보고서를 통해 우리나라 성인의 당뇨병 유병률은 10%선으로 최소 300만명에서 최대 500만명 정도가 당뇨병환자로 추정되고 있으며, 동물성 식품과 지방질 섭취 증가와 신체활동량 감소, 노령인구증가, 생활양식의 서구화 등으로 증가추세에 있다고 주장했다.

다.

학회는 이런 당뇨대란 상황을 피하기 위해서는 예방이 최선의 대책이라며 '당뇨병 퇴치 10개년 계획'을 마련, 올해부터 대대적인 당뇨병 및 당뇨합병증 예방 캠페인을 추진키로 했다.

이를 위해 학회는 전국 규모의 당뇨병 역학조사를 실시하고 각 지역별로 당뇨병 전문의를 통한 정기 공개강좌를 개최하며, '당뇨버스'를 운행, 일반 국민을 대상으로 무료 당뇨병 검진 및 의료상담을 시행하는 등의 사업을 벌일 계획이다.

Incidence: Korea

- 1000 DM patients

NP 33%

Gangrene 1%

DMF 1%

loss of pedal pulse each 1%

- Diabetes care asia (Kim YS: Excerpta medica international congress series 1209:67, 2000)

Incidence: Korea

Table 1. Annual Incidence of Diabetic Foot

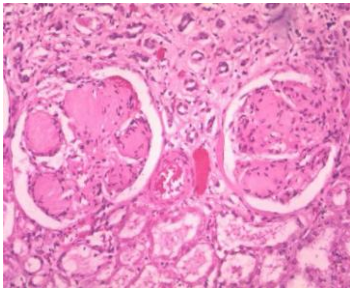
Year	No. of total DM patients	No. of DM foot patients	Annual incidence (%)
1982	307	5	1.63
1983	448	7	1.56
1984	576	9	1.56
1985	556	10	1.77
1986	434	14	3.23
1987	618	16	2.59
1988	804	18	2.24
1989	830	24	2.89
1990	854	23	2.69
1991	974	26	2.67
Total	6401	152	2.37

- Prevalence of foot ulcer in diabetes (Cha BY: 11th Korea-Japan Diabetes Symposium, 2001)

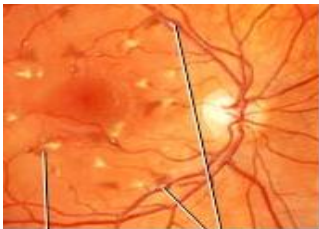
당뇨병 : 건강에 대한 영향 (미국 통계)

미세혈관계

신부전* (40%)



실명*



hemorrhage Aneurysms

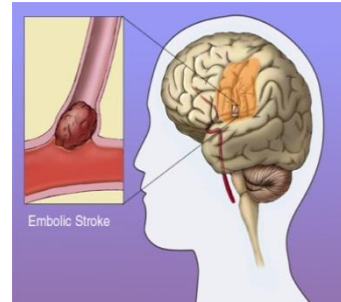
신경 손상 (60% - 70%)

사망원인 6 위

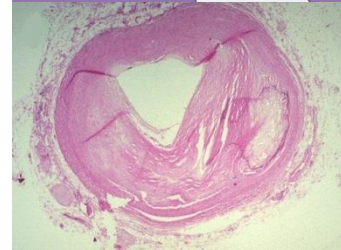
당뇨병

평균 수명
↓ 5 to 10 년

대혈관계



Embolic Stroke



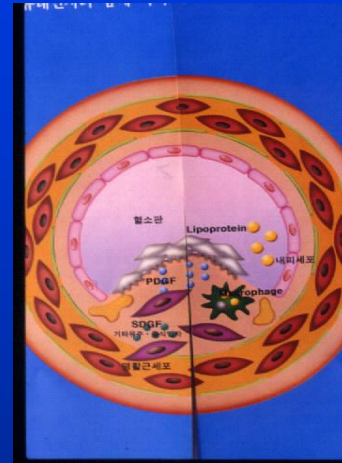
심혈관계 질환
(70%) 2-4 X

사지 절단* (15%)

*당뇨병은 신부전, 실명, 비외상성 사지절단의 가장 흔한 원인

DMF problem

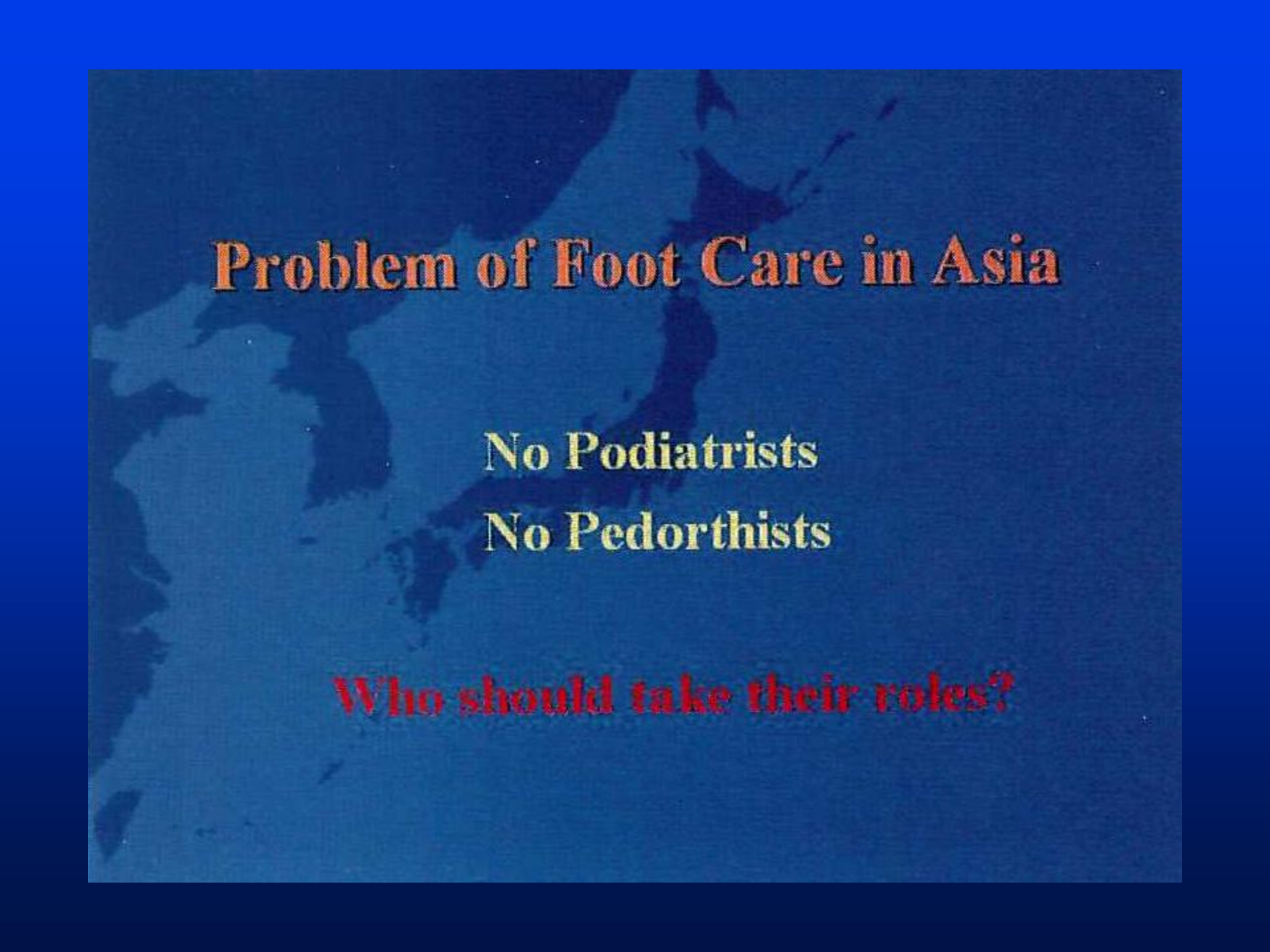
- Vasculopathy
- Neuropathy
- Dermatologic



Three Clinical Entity

- DMF ulcer
- DMF infection
- Charcot joint





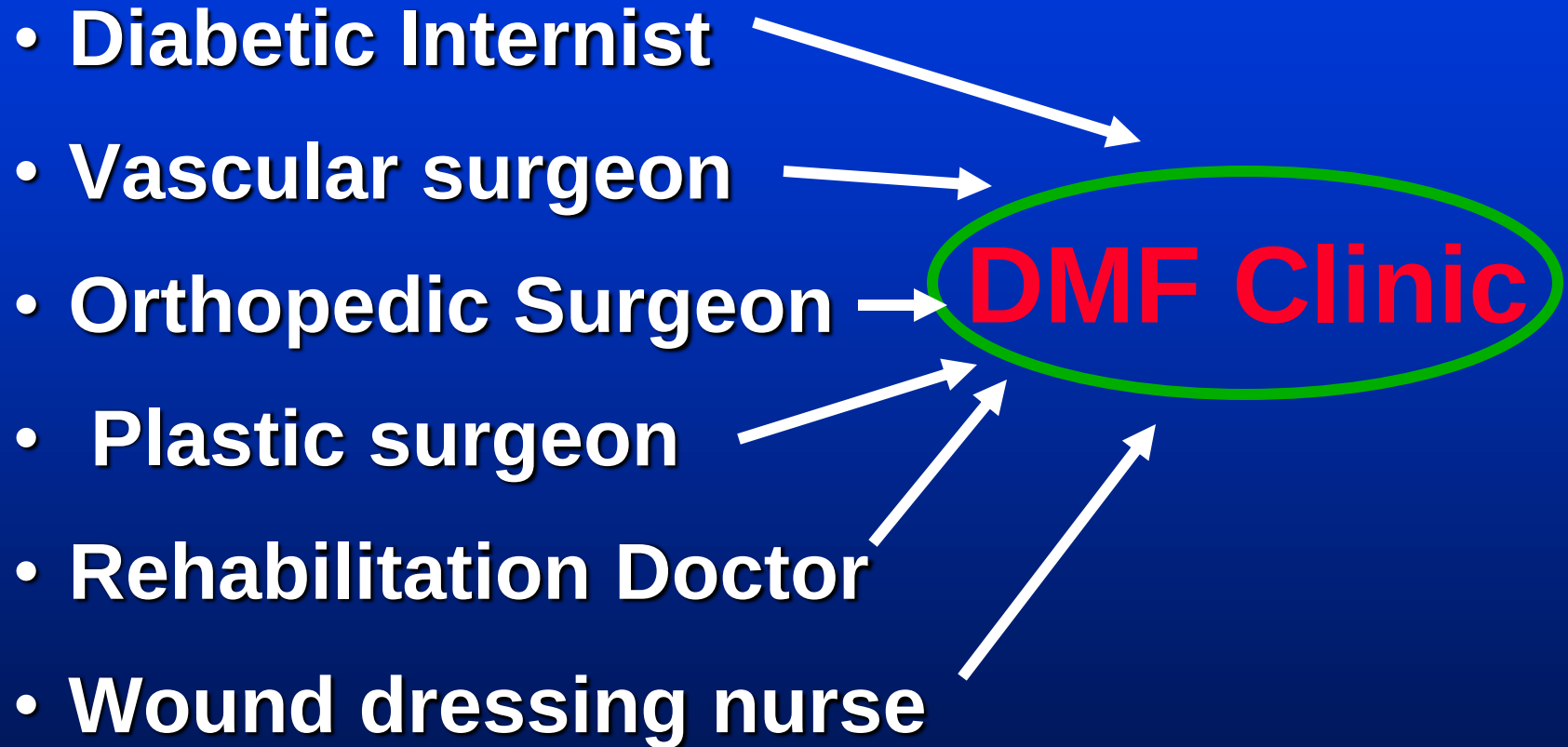
Problem of Foot Care in Asia

No Podiatrists

No Pedorthists

Who should take their roles?

Diabetic Foot Team



Diabetic Foot Education

- To whom
patient , doctor, nurse etc
- Where

DM education Room
Public Auditorium
Event Hall



The background is a deep space scene. In the center, there is a bright, dense cluster of stars, possibly a nebula or a young star cluster, with several prominent white and blue stars. The surrounding space is filled with smaller, distant stars and a few wispy clouds of gas. At the bottom, the words "Thank you" are written in a large, white, serif font. Scattered throughout the image are several curved, colorful strings of text that appear to be floating or falling. These strings contain a mix of lowercase letters and symbols, including 'u', 'o', 'y', 'k', 'n', 'a', 'h', 'T', and 'P'. The colors of the text range from red and orange to blue and purple. The overall effect is one of a vast, beautiful universe with a personal message at the bottom.

Thank you