

# Oral Health—General Health Interrelationships: Health Policy Implications

Poul Erik Petersen, DDS, BA, Dr Odont Sci, MSc (Sociology)

## ABSTRACT

The World Health Organization (WHO) is an association of ministries of health. Scientific knowledge is used to build public health programs that are evidence-based. The WHO Oral Health Program has interest in oral health/general health relationships as WHO links the continuous improvement of oral health and the control of oral diseases with efforts to control the risk factors of noncommunicable chronic diseases. WHO has provided evidence of the growing burden of chronic diseases worldwide and those diseases are now the most prominent killer diseases in the world. This article emphasizes action programs, which would target modifiable risk factors (tobacco, diet, alcohol, hygiene, and stress); moreover, the establishment of databanks for health surveillance and health research is encouraged in order to translate the information from oral health population studies into action. Introduction of integrated chronic disease surveillance systems will play a major role in the improvement of public oral health programs and will help to understand the effectiveness of common risk factors approaches and the relationships between risk factors, chronic diseases, and several oral diseases. Oral health is not isolated but is linked to the health of the rest of the body and such an association should be used by public health administrators in building national and community health programs. WHO also emphasizes that research relating to studies on the impact of oral disease on general health needs to be strengthened.

*The World Health Organization (WHO) is an association of ministries of health, established to assist countries in providing public health programs that are evidence-based and match the needs of the populations. There are changing disease patterns worldwide and the growing burden of chronic noncommunicable diseases (NCDs) is a matter of interest for WHO because they now affect developing countries. The majority of developing*

*countries suffer from the burden of oral disease as well as a lack of oral health care programs. There is a high need to strengthen integrated prevention programs, which link oral disease prevention with various efforts on chronic disease prevention at national, regional, and global levels.*

*The changing patterns of diseases across the world relate to certain risk factors, including tobacco usage, unhealthy*

diet, and excessive consumption of alcohol. Many of these risk factors are also of interest from an oral health viewpoint because several oral diseases are chronic by nature. In 2002, WHO highlighted these chronic disease risk factors in the World Health Report,<sup>1</sup> which is issued yearly by WHO. In 2002, the report focused on reducing health risks and providing healthy lifestyles (Figures 1 and 2). WHO links the continuous improvement of oral health and control of oral diseases with efforts to control the risk factors of NCDs because the factors are common to most oral diseases and chronic diseases.<sup>2</sup> The role of common risk factors may possibly explain why it is that some population groups seem to carry the burden of disease. It happens that the people who carry the burden of disease are disadvantaged, lower educated, and poor, and this is the case across developing as well as developed countries.<sup>2,3</sup>

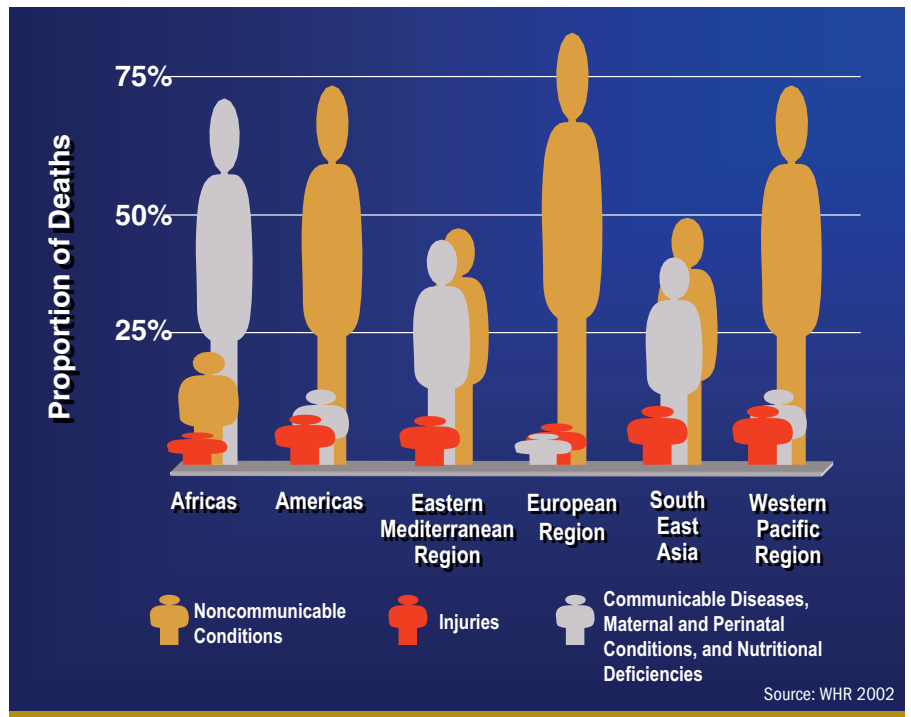


Figure 1 Proportion of deaths by broad cause group and WHO Region, 2001.<sup>1</sup>

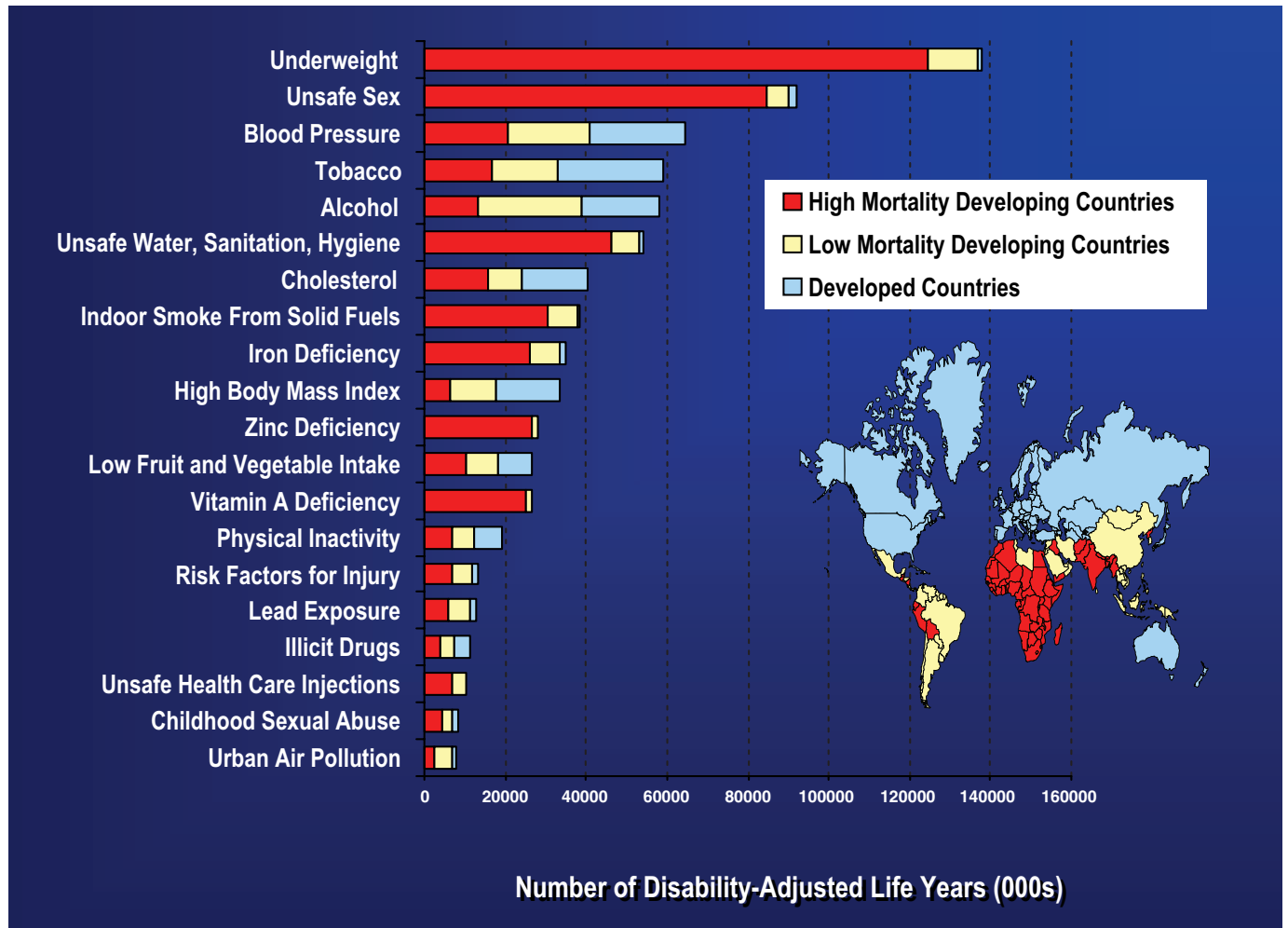


Figure 2 Disease burden (DALYs) attributable to selected leading risk factors (2000).<sup>1</sup>

## WHO INITIATIVES

WHO oral health initiatives over the past years have focused on modifiable, common risk factors to chronic diseases. Tobacco use, diet, alcohol, hygiene, and stress are of particular concern (Figure 3). The role of WHO is to help countries establish action programs that can target the modifiable risk factors and also stimulate effective use of settings for health.

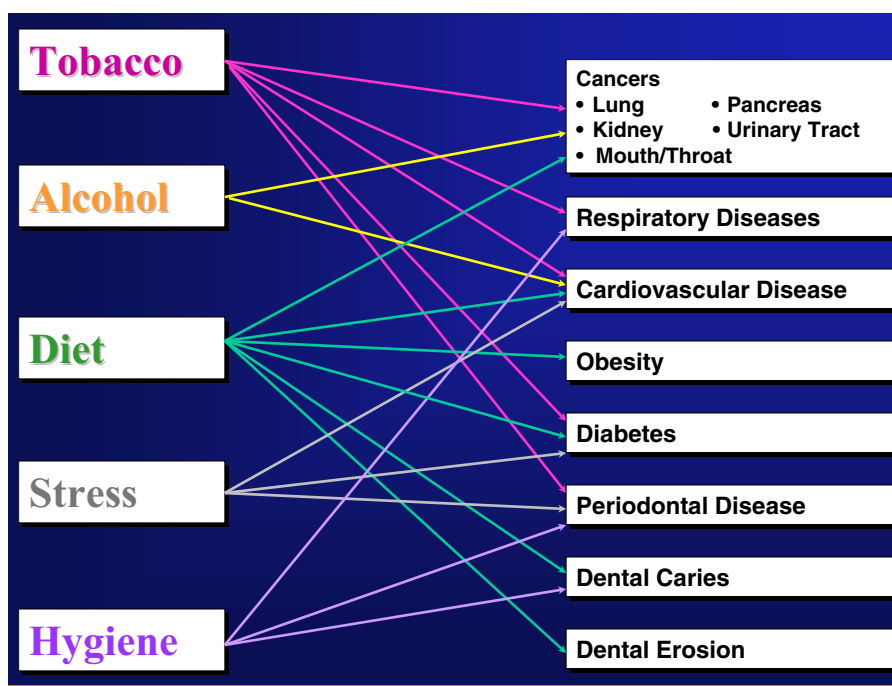
Figure 4 shows the risk factors model used by the WHO Oral Health Program as a platform for assisting countries to design a comprehensive action plan to promote health. It can be seen from this model that not only better oral health outcomes are considered but also systemic health and quality of life components. The goal of WHO is to help the member states work toward improving overall health through oral health. National health authorities and public health administrators should work from the assumption that oral health is not isolated, but is linked to the rest of the body. Oral health is an essential component of health and vital to quality of life.

It is important for countries that offer health programs for chronic diseases (ie, industrialized countries) to incorporate the direct and indirect impacts of oral health into medical care. In the meanwhile, the challenges are high for many developing countries where there are only limited health care programs for most chronic diseases.

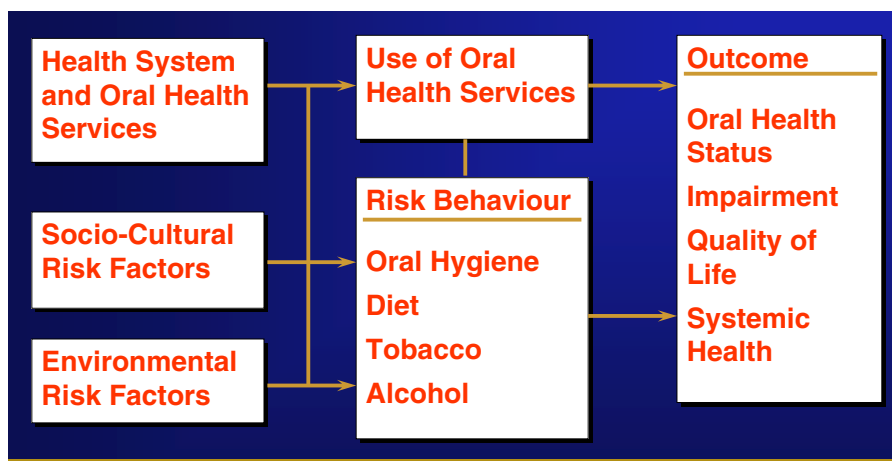
Recently in the city of Kobe, Japan, WHO analyzed the interrelationships between oral health and general health. At that meeting, it was discussed how the knowledge of the oral health/general health relationship can be turned into action programs. The approach of WHO is to gain experiences from demonstration programs in various countries and translate the information into global action programs.

## Databanks

In the 2003 WHO World Oral Health Report<sup>2</sup> it is stated that WHO would globally stimulate state-of-the-science analysis. WHO's mission is to assist countries to make use of the evidence on disease prevention and promotion of oral health and to translate that information into action. WHO has established



**Figure 3** Common risk factors for oral and chronic diseases.



**Figure 4** The risk factors approach in oral health promotion suggested by the WHO Global Oral Health Program.<sup>2</sup>

databanks that can help countries use oral health information, not only for planning but also for surveillance and outcome evaluation of public health programs.

## Public Health Programs

It is emphasized by the WHO Oral Health Program that integration of work for oral health promotion into general health is most important for national and community health programs. The link between oral health and general health is pronounced in older people, and this was most recently emphasized in a policy paper<sup>4</sup> on how the work for better oral health of older people in the world could

strengthen. Because of the ongoing demographic revolution, the focus is on older people. Within the next 30 years, 80% of older people worldwide will live in developing countries<sup>5</sup> where there is limited access to health care compared with developed countries. In these developing countries, the promotion of health and oral health must be considered in a much broader sense within the frame of national and community public health programs, without relying on dental professionals. For example, in the country of Burkina Faso in western Africa, there is 1 dentist per 225,000 people. In such a case, dentists cannot

be relied upon for promoting oral health. Community-oriented initiatives need to be established for such countries and health promotion through healthy environments and healthy lifestyles is an important strategy for the development of oral health systems.

Another effort of WHO is to control the factors that relate to diet and nutrition because of their impact on the prevention of chronic diseases. In 2003, WHO issued the technical report, "Diet, Nutrition and the Prevention of Chronic Diseases," and for the first time in recent history, dental disease prevention through diet was devoted a chapter.<sup>6</sup> This document is an important tool for WHO and for policymakers to consider when oral health issues are to be linked to chronic disease prevention as recommended by the WHO Global Strategy on Diet, Physical Activity, and Health.<sup>7</sup>

The concern for a healthy diet applies not only to the prevention of dental diseases but also to the prevention of oral cancer. In May 2005, the World Health Assembly called on countries to strengthen cancer control programs.<sup>8</sup> Oral cancer is included in that effort, and in the policy statement<sup>7</sup> it is recommended that the prevention of oral cancer be integrated more systematically.<sup>9</sup> This initiative is complementary to the risk factor initia-

tives flowing from the WHO Framework Convention for Tobacco Control.<sup>10,11</sup>

A growing number of countries show interest in knowing the impacts of strengthened public health programs. At the World Health Assembly 2000, the WHO emphasized the need for mapping the epidemics of chronic diseases in the world,<sup>12</sup> linking this information to the socio-behavioral determinants, and also making use of surveillance data for the adjustment of structure and the function of health systems in countries. The focus of this World Health Assembly resolution in the year 2000 was the assumption that if the level of exposure to the common risk factors for NCDs can be reduced, a difference can be made for better health of people worldwide and needs to be documented.

### WHO Oral Health Surveillance Systems

The SURF report<sup>13</sup> informs of a new health surveillance system designed by WHO. It is recommended that the member-states adopt this principle so that every country would have an information database. WHO bases this information on various means of collecting data, including questionnaires, physical measurements or clinical assessments, or more advanced medical measurements.

The WHO surveillance systems include core variables, expanded information, and optional information that depends on the situation in different countries.

WHO has oral health information from nearly all member-states. Such information may include:

- the number of teeth present in certain adult age groups,
- edentulousness,
- dental caries' experience (decayed, missing as a result of caries, and filled teeth),
- prevalence of dental caries,
- percentage of caries-free individuals,
- oral cancer incidence rates.

That information has been fed into the new WHO Global InfoBase.<sup>14</sup> Exact aggregate figures are entered into the databank, based on information from individual country surveys. Using the chronic disease databank, the oral health information can be linked at country level to the level of cardiovascular diseases, diabetes, and cancer (Table 1). At country level, information on oral diseases also can be cross-linked with risk factors that are common to these diseases. Additional indicators on oral disease, risk factors, quality of life, and oral health systems are being developed and member-states are involved in the validation process.<sup>14</sup>

**TABLE 1:**  
**Matrix of the WHO Global InfoBase of Chronic Disease Risk Factors and Conditions Contributing to Morbidity and Untimely Death.<sup>14</sup>**

RISK FACTOR	CONDITION				
	CVD	DIABETES	CANCER	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	ORAL/DENTAL DISEASE
Tobacco use	X		X	X	X
Alcohol use	X	X	X		X
Physical inactivity	X	X	X		
Nutrition	X	X	X		X
Obesity	X	X	X	X	
Raised blood pressure	X	X			
Dietary fat/blood lipids	X	X	X		
Blood glucose	X	X	X		

### CONCLUSION

The new WHO oral health databank will help answer research questions in public health. WHO very much emphasizes additional research investigating the impact of oral disease and illness on general health and quality of life.<sup>15</sup> In particular, research on modifiable risk factors that relate to oral health promotion and intervention programs needs to be strengthened. This type of research may help implementation of policies at country and community levels. Public health administrators play a major role in this translation of knowledge. It is their responsibility to serve the planning and evaluation of effective programs. Based on evidence from community health programs, WHO can assist in that process through its normative work and by ensuring the sharing of experience across countries.

Having oral health become integrated with general health is also a responsibility of nongovernmental organizations, such as the World Dental Federation, the World Medical Federation, and the International Association for Dental Research. The partnerships between nongovernmental organizations and WHO are vital in raising the awareness of oral health and general health issues.

For more information about WHO oral health activities, a number of documents produced by the Oral Health Program can be downloaded from the Internet ([www.who.int/oral\\_health](http://www.who.int/oral_health)).

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