

## **Impact on Mexico's Economy by the Presence of Metabolic Diseases**

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### ***Introduction***

Mexico is a country of great contrasts where prevailing geographic, economic, social and cultural heterogeneity of the population, the nutritious aspects, they are closely related to the creative capacity of the society; whereas the epidemiological behavior of related diseases with the habits and customs that affect health and the onset of metabolic diseases that are closely related to each other, to do this we must be able to cope with the changes in the behaviour, Since currently the situation has become epidemic in our country itself which is related to overweight and obesity, at the same time to progress, and induction into the health care market by the influence of the media turned out in many cases, the adoption of habits and customs foreign to our culture food. Obesity and the series of illnesses related to it (atherosclerosis, diabetes, high blood pressure, certain cancers, among others), are in general associated with abundance of food, and to marketing in the formation of habits, these conditions are concentrated in certain strata of society (in general, medium to high classes).

The information provided collects and sorts technically bibliography Basic that it will be useful, both for medical staff and paramedics in training, as to other levels in terms of epidemiological methodology related to metabolic diseases and it provides concepts that probably have been obtained in different areas of your prep where diseases that are inherent in the behavior (habits and customs, induction of marketing and socio-economic and cultural conditions) as it is the case of the lifestyle which determines the appearance of metabolic syndromes or diseases related to malnutrition due to habits and customs food for a diet or special diets that added to sedentary lifestyle, rest and poor exercise habits, or by intrinsic factors as genetics, predisposing the diabetes in its different presentations, or Dyslipidemia by elevated levels of cholesterol and triglycerides, develop hypo or hyperthyroidism as a predisposing factor and in the same way, we can find the polycystic kidney, that it can affect kidney function.

Within the acquired induced diabetes, Dyslipidemia by habits and food habits, we find fatty liver causing liver damage due to the accumulation of fat, aggressive lifestyles (drugs, alcohol, tobacco, self-medication or iatrogenic, etc.) that it cause chronic renal failure, thyroid dysfunction. Which brings us to establish the importance of knowing the whole of foods that make up the usual power of an individual and consumed quantities, to assess whether it is covering your nutrient needs and qualify appropriate or inadequate diet of the individual. Especially taking into account that in the social stratum, habits and current customs of the inadequate food, predispose to the appearance of damage to health.

In order to determine the epidemiology of metabolic diseases, all the studies carried out, first of all need to know what is their frequency in any of its manifestations that may arise in simple arithmetic operations through management and the use of reason and proportions as well as the rates, the purpose and main objective is the relate the frequency of the event with the studied phenomenon, and the subject study population taking into consideration that the reason indicates the size, While the proportions expressed frequency with that this event occurs in relation to the population, While rates are the best epidemiological comparison tool that refers to the exposed risk and must be clearly identified in function to:

- a) Type of event
- b) Geographic area
- c) Period of time occurred
- d) Budget availability

So it is important that when carry out an epidemiological study measures of association or defect with which we can say that exposure to a certain factor is risk to the presence or absence of a disease that has a potential impact and that is statistically significant, mainly in contingencies or epidemiological outbreak that will allow us to analyze the different variables that made possible the appearance of the case, which leads us to define specific epidemiological study which will be based on the desired objectives, as it is the case of cross-sectional studies that indicates the current problems or in the historical moment in which ongoing research; or studies of case and control, where there is no frequency unless it has a population-based, since these are fixed and since the beginning of the study know who cases and those controls.

### **Magnitude**

That the parallel increase in the frequency of obesity and the metabolic syndrome is considered a worldwide phenomenon and Mexico is no exception, these pathologies are complex and heterogeneous, clinical entities as affected by environmental, social, cultural and economic factors of the Mexican population due to the globalization of food. In addition, are important risk factors for the development of diabetes type 2, coronary artery disease and stroke by arteriosclerosis, which they are the leading causes of death in our country.

In studies of morbidity and mortality that affect Mexico, has been genuine interest identify and link the metabolic diseases with the attitudes, habits and customs of the population, however, at present public policies focused on effective prevention, diagnosis and treatment for the majority of cases, is considered that not given tracking proper, in addition to that, there is no sufficient qualified staff to run the programs. For these reasons, obesity and metabolic syndrome have become a serious public health problem at the national level. As this we have statistical data affecting the fourteen municipalities of health jurisdiction N ° VIII de Veracruz health services that, just as in this jurisdiction is happening in mexico affect the budgets and priorities for intervention.

**Table I. State of Veracruz**

Basic information for the diagnosis of municipal health, major causes of mortality at the level jurisdictional

No.	OVERALL MORTALITY 2012 Causes	DEF.	TASA <sup>(1)</sup>
1	Diabetes mellitus	982	95.04
2	Malignant neoplasms tumors	921	89.14
3	Ischemic heart diseases	878	84.98
4	Diseases of the liver	465	45.00
5	Brain vascular diseases	346	33.49
6	Hypertensive diseases	343	33.20
7	Attacks	288	27.87
8	Renal failure	274	26.52
9	Chronic lower respiratory diseases	265	25.65
10	Human immunodeficiency virus disease	173	16.74
	Other causes	1725	
	Total	6660	644.58

Tasa x 100,000 hab.

As you can see in the picture before written diabetes mellitus occupies the first place as a cause of death alarming condition that is in this area of research, very similar to the national behaviour where epidemiological studies indicate that around the 10.7% of the population suffer from it and are at risk and more alarming that 35% of the rest of the population ignore if suffer it what this means 5.5 million of inhabitants won't have been diagnosed mainly found the 20-year age group and are studying with this ailment and a million productive age and not acquire awareness of the risk that represents this disease and therefore not come to control, what makes that the rate mortality rises and nationwide occupy the top spots as it happens in this area of study.

What is serious is that it is a problem of health that will increase and its social cost of health is very high in addition to consider that it is an incurable condition and should be receiving attention medical life, finding us all at risk by lifestyle and eating habits of our culture do not own induction.

One of the factors that favor the appearance of metabolic diseases is without a doubt:

- The longevity of the population
- Increase in obesity and the envelope weight
- Sedentary lifestyle
- Changes in eating habits
- Lifestyle
- Ethnic origin
- work
- Alcohol consumption
- Digestive disorders
- Liver damage to the metabolism among others

In the world there are more than 600 million hypertensive these 420 million correspond to developing countries, it is calculated that the 1.5% die for this cause or that represent 17 million people who die as a result of this problem pointing out that every 4 seconds an acute coronary syndrome occurs and every 5 a cerebral vascular accident in such a way that cardiovascular diseases occupy the top spots statistical data which gives us the INEGI and reviewing epidemiological studies to see the significance of the metabolic diseases can say that they are occurring with greater frequency at an early age and occupy the top of mortality taking increased risk male gender with 34% and female 26.3% before age 50 affects most States of the North with a prevalence largest 33% to the southern States which has to do with the lifestyle and habits and food habits (source Velázquez MO. Rose M, Roberto Tapia Conyer)

The following table published by the Ministry of health and the SINAIS, shows us the 20 leading causes of death tabulated for the period 2010-2011 as well as by the INEGI. It corroborates above and reflects somewhat the problem in health in which are immersed this nationwide

**Table II**

Order	Description	Deaths	
		2011	2010
	Total	590,693	592,018
1	Diabetes mellitus	80,788	82,964
2	Ischemic heart disease	71,072	70,888
3	Cerebrovascular disease	31,235	32,306
4	Cirrhosis and chronic liver diseases	28,392	28,369
5	Assault (homicide)	27,213	25,757
6	Chronic obstructive pulmonary disease	22,595	23,797
7	Hypertensive diseases	18,942	17,695
8	Transport accidents	17,225	17,098
9	Acute lower respiratory infections	16,401	17,131
10	Conditions originating in the perinatal period	14,825	14,376
11	Nephritis and nephrosis	13,858	13,483
12	Malnutrition calorie protein	7,952	8,672
13	Malignant tumor of trachea, bronchus and lung	6,748	6,795
14	Self-inflicted injuries	5,732	5,013
15	Malignant tumour of the prostate	5,666	5,508
16	Malignant tumor of the stomach	5,557	5,599
17	Malignant tumor of the liver	5,451	5,393
18	Malignant tumor of the breast	5,258	5,094
19	VIH/ AIDS	5,043	4,860
20	Malignant tumor of the uterus neck	3,927	3,959
	Ill-defined causes	11,927	12,789
	The others	184,886	184,473

Sources: INEGI Interactive query data, General deaths, detailed causes CIE and list Mexican of diseases.

Problems that are manifested in metabolic diseases have to do with the problem of obesity and overweight since this goes on increase very accelerated what has led to the intervention and formulation of laws, regulations and manuals of procedure such as the management of policies public priority, affecting all levels social, productive and groups of age, race, ethnicity and sex. That worries and occupies to health systems to global and especially to Mexico where points in its Development Plan the present Government a priority programme: Obesity and overweight. As one epidemic of the 21st century in the World Health Organization points out that obesity and being overweight is a frequent and common disease in the

world estimating 300 million who suffer from it and is located within the 10 first places as a factor of risk and trigger problems metabolic partners both in the urban and rural areas, occupying the women with the highest rate (higher BMI of 30) than men although in the overweight men have BMI greater of 25 and in the same manner with respect to the association between the socioeconomic status and obesity. The above concerns what the third national survey of health and nutrition (NHANES). Over the past two decades the information about obesity and metabolic syndrome has grown rapidly, which has led to some health systems in the world and numerous scientific societies to form groups of experts who analyze this information permanently.

In Mexico the efforts carried out by the national institutes of health, hospitals Federal reference and highly specialized hospitals for the development of basic and clinical research of obesity, are numerous; However, the dissemination of results and the communication between researchers is not even enough.

With respect to damage to health morbidity is also a priority address it since the problems with the metabolic system occupy the first places as it is the case reported by jurisdiction health number eight.

**Table III. Municipality: Jurisdictional**

No.	GENERAL MORBIDITY 2012 Causes	Nº CASES	RATE(1)
1	acute respiratory infections	180500	17469.46
2	br. int. by other organis. and the bad def.	37914	3669.46
3	urinary tract infections	36423	3525.15
4	ulcers, gastritis and duodenitis	7752	750.27
5	dengue fever	4793	463.88
6	gingivitis and periodontal diseases	4516	437.08
7	high blood pressure	4181	404.65
8	asthma and state asthmatic	3684	356.55
9	diabetes mellitus	3623	350.65
10	acute otitis media	3367	325.87
	rest of diagnostics	32174	
	Total	318927	30866.93

Rate x 100,000 hab

### **Transcendence**

The significance of the study of metabolic diseases is important for the Association of cardiovascular risk factors in a single individual, especially obesity, type II diabetes, hypertension and hyperlipidemia, currently known as metabolic syndrome (MS) the what in the national survey of chronic disease occupies 30% of the population in 20 years and more, and in some cases to 43%, which gives a growing epidemic of chronic diseases, especially those related to obesity and overweight. Prevention, according to WHO, has shown that simple lifestyle-related measures are effective to prevent type 2 diabetes or delay your appearance, and maintain a healthy body weight, is remember that staying active physically with 30 minutes of activity at least regular day, eating a healthy diet that contains between three and five daily servings of fruits and vegetables and a small amount of sugar and saturated fats, so How to avoid smoking, help the solution of systemic illnesses and cardiovascular level.

We're talking about 80,000 deaths of beings by year due to diabetes among some as part of the health problems arising from metabolic diseases. It should be as a possibility that now as active civil society; the media, State Governments, schools and universities, but above all the legislators, are you spending more time to promote solutions that help to solve, or at least contain, this serious problem. In fact with the reform finance, intends to tax to beverage with high percentage of sugar processing industry.

It is considered that the Federal Government through the Ministry of health and the IMSS, promoted by campaign weight control, however food ads sale & scrap proliferate everywhere. What current law already stipulates that regulation of these, you just need to fulfill it and to hire more specialists for programs at the operating levels. Also advertising in media, note that some products may be harmful to health and not only recommend "eat well as fruits and vegetables". The significance of the study of metabolic diseases has its importance by the Association of cardiovascular risk factors in a single individual, especially obesity, type II diabetes, hypertension and hyperlipidemia.

### **Vulnerability**

Metabolic diseases are complex because they converge to a range of factors that trigger the different pathologies problem which they are linked, and have much to do public policy exercised by them, as well as material resources and infrastructure that is count is one of the factors that influences the ideological, that by means of marketing have changed habits and customs. The style of life that we as citizens will be the road to a healthy lifestyle that represent habits, daily practices and activities of daily living that makes it a matter of individual responsibility and family since avoiding risk factors, leads to a State of health with help from professionals or with auto Babysitting.

There are some factors of vulnerability that have nothing to do with the style of life unless that are hereditary or genetic; transfer characteristics of the fathers to the children of generation in generation Not so for the extrinsic factors that relate to the environment since it has some degree of control by psychological, social and cultural as well as large transnationals who use the marketing for their own purposes. It turns out feasible intervention in the problems generated by the metabolic diseases if we promote timely notification in the first place and the compliance with existing regulations like that the case of the designated by the passive surveillance through the national health system (SNS) which has with medical 17 thousand units and more than 800 hospital units distributed in 234 health jurisdictions in the 32 Federative units in the country and through the health indicators of metabolic diseases that is the case that concerns us.

Years ago you installed a unique system of information for surveillance epidemiological called (SINAVE) national epidemiological surveillance system as well as the (SUIVE) which is the unique system of information for epidemiological monitoring, mandatory notification of new cases known as soft in the same way hospitals public and private, as well as those of the health system are involved in the notification of diseases non-communicable and metabolic (RHOVE) which is the network for epidemiological surveillance in hospital. In the case of deaths must be informed through the (SEED) statistical epidemiological system of deaths.

With all these epidemiological alert and notification mechanisms that could influence the health problems with opportunity to serve them in the early stages of their development Emphasizing the metabolic process in most are slow and appear so late, allowing influencing the multi-causal factors that are triggers for the metabolic diseases and to achieve this vacant the first places of mortality It is important to carry out active surveillance of mortality and morbidity that occur in our country in the search for cases or events. Complete the information generated by all the components with other special mechanisms designed to deepen and detect the problems that health exists or is about to come and use all force to contain them. The advantage that exists for the management of metabolic diseases is that, some factors affecting, the guidelines and rules governing the activities to follow, are known as it is the case of some of the norms that are designated in the system of epidemiological teaching as they are:

Official Mexican Standard nom-174-SSA1-1998, For the comprehensive management of obesity sets the health guidelines to regulate the management of obesity and its provisions are mandatory for professionals, technical and auxiliary disciplines for health, as well as in the public, social and private sectors establishments, you have and provide services for the care of obesity, control and weight reduction, in the terms laid down therein.

Official Mexican Standard Nom-030-SSA2-1999, for prevention, treatment and control of hypertension t is important that this is carried out under the notification of cases of high blood pressure diagnosed under this standard procedures they must be made in accordance with the provisions applicable in the field of information for epidemiological surveillance in accordance with the Norma Oficial Mexicana NOM-017-SSA2-1994, For epidemiological surveillance. The Mexican official standard NOM-037-SSA2-2002, for prevention, treatment and control of Dyslipidemia designates as primary prevention recommendation of a suitable diet and proper physical activity.

With the exception of the primary or genetic origin must consider both the individual and the community to exercise control this must have a focus sanitary point where healthy lifestyle through the promotion of health. Official Mexican Standard Nom-015-SSA2-1994, for the prevention, treatment and control of diabetes mellitus in primary care it aims to establish control measures comprising the identification, treatment, registration and follow-up of patients focused always to the education of health personnel through, while being very careful handling I dieto therapeutic to allow it to set up and improve the levels of blood glucose and blood lipid among other aspects.

### **Conclusion**

By the foregoing and pending the present investigation serves to introduce the reader to the importance that has to know the epidemiology of metabolic diseases and to intervene with the opportunity to establish control by them regulations decision appropriate measures in activities which and that they will be tools for a better understanding of other chapters that relate to the problems above designated and that incede in the budgets of the institutions responsible for their oversight.

This document constitutes an analysis of the economic factors and health that establishes the situation that prevails on the problem of metabolic diseases, as it is the example of overweight, obesity, chronic disease, Dyslipidemia, diabetes, hypertension, cardiovascular diseases among others, in which we pointed out national and regional panorama of 14 municipalities that make up the health jurisdiction number eight of the health services of Veracruz, can be seen the extent of the damage that they cause and how to address this problem through multisectoral strategies, cross-cutting or by the order of Government, whether local, State or national. Likewise through this small diagnosis, established and justified the interest that has awakened to the authorities responsible for health and budgeting to channel the necessary resources for the implementation of health programmes that have an impact on this problem. One of the most important challenges is to reduce the presence of metabolic diseases or when stop less, the way in which you are express

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