

# Education & Lifestyle Changes to Prevent Non-Communicable Diseases



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I know for sure that the amount of money I have in my pocket right now would be much more if not for non-communicable diseases (NCD). This group of illnesses includes a long list of chronic diseases such as obesity, high cholesterol, diabetes, cancers, and hypertension, among others. Most of them, as you already know, are preventable. Just a simple example is adult onset diabetes (type 2 DM). Adult onset diabetes is a common illness these days and has the health services worldwide concerned. It is on the rise everywhere, and affects not only the glucose levels in blood, but kidney, brain, eye, immune and cardiovascular functions as well. And it does this very quickly. After it begins, most people have 15-20 years before body systems start to fail, and the quality of life to becomes really bad! Americans call it the silent killer. Yet, sugar as we know it was not available before 1700 AD. Nothing was “sweet” before this time, and only after we discovered sugar-cane in the Caribbean did we add sugar to...almost everything. Neither was wheat so common; people basically has local bread as a source for carbs, not bread + macaroni+ rice + cupcakes+ pizzas+ falafel + baked rolls + French fries... ALL on one table! All of them are carbohydrates.

Now add to this pollution, cigarettes and nargileh smoke, extra salt and preservatives in processed foods, lack of physical movement, daily fast foods and finally, our somewhat evolving genetics, and we end up with many NCD's. This is logical.

To decrease the number of NCD's in our society, we must

start with education. Schools in the USA that provide meals for elementary and sometimes intermediate levels and these meals never include any soft drinks, processed cheese or meat, or large sandwiches. Some governments have even imposed added taxes on such food items on the general population to discourage people from buying them in shops.

As doctors, we can further this education by providing patients with the reality of events: Statistics! Here is a quick look:

- Smoking is the largest preventable cause of death in the world. It can cause 15 types of cancer and kills 7 million people annually. Smokers die 10 years earlier on average than non-smokers. (CDC). Furthermore, addiction to smoking cigarettes is serious; addicts have as much trouble quitting as alcoholics have leaving alcohol!
- Cardiac diseases kill around 600-700,000 people in the US per year alone. (CDC)
- DM2 diabetes is seen in 13% of adults aged 20 or more in the US. Only 15% are gene-linked, meaning most cases are preventable.
- Hypertension causes 1000 deaths per day in the US.
- Obesity and overweight population in the USA (2015 16) has reached 39%!! It elevated the risk all hypertension, diabetes, cardiac diseases and even cancer.

Laboratory testing for diabetes includes fasting glucose and HbA1c mainly; HbA1c can be repeated once every three months (lifetime of RBC's) for monitoring. It reflects how much glucose has been “stuck” on Hemoglobin (Hb) whose main type in normal population is Hb-A1. Cholesterol & lipid levels can be done on fasting blood (12 hrs.), with a note that Triglycerides here change a lot during the day. A small elevation of triglycerides is no reason for alarm, and a simple diet may solve it. Cholesterol meanwhile is produced ½ in our body and ½ from food. It takes 20 years maybe for bad cholesterol (LDL) to build up plaques in our blood vessels; it is not a day-day event. Its lowering takes a longer time (months) via diet alone, and a seriously high level may warrant immediate treatment. Hypertension has only a few tests like general urine/ microscopy (casts) and urinary

micro albumin levels. Cardiac function can be assessed by an ultrasound or ECG and its hypertrophy by pro-BNP blood testing. Recently, a new marker for cardiovascular calcification, called MGP (Matrix G-Protein) has also been introduced as an added test for risk assessment. Cancer dx depends a lot on lifestyle, history, but in most cases, diagnosed to finality by a pathology exam; radiologic methods have also advanced to help here. In the lab, tumor

markers cannot be used as a test to diagnose any cancer; they are mainly used for therapy follow-up.

In conclusion, proper education on lifestyle and the food we eat is important to escape the NCD trap many westerners are now in. Routine visits to your doctor can also help to ensure the laboratory numbers associated with your lifestyle are in check.

## Tip

**How walking affects the body**

- 3 minutes**  
Blood pressure decreases
- 5 minutes**  
outside  
Mood improves
- 5-10 minutes**  
Creative thinking improves
- 15 minutes**  
after meals  
Blood sugar level decreases
- 30 minutes**  
after meals  
Helps to lose weight (depending on walking speed)
- 40 minutes**  
Reduces the risk of developing coronary heart disease in the elderly
- 90 minutes**  
outside  
Reduces the number of depressive thoughts