



## Cardiovascular Disease

- The leading cause of death in the world
- 17.9 million deaths worldwide (31% of which are due to cardiovascular disease)
- 85% of these deaths are caused by heart attacks and stroke

## Stress, Air Pollution and Noise... Become Validated Culprits of Vascular Disease

Coronary Heart Disease continues to imperil global health with an unacceptable number of morbidity, consequential loss of life and the drain of world economies. It is justifiably prudent to address and target common and traditional risk factors and lifestyle practices as the root of causation and an effective way of attenuation of disease burdens.

However, there remain untapped, emerging relevant factors which come with urbanization and industrialization; among these factors are stress, air pollution, and noise levels which have become validated culprits of vascular disease.

Historic and geographic evidence convincingly demonstrate the association of atherosclerosis and cardiovascular deaths with stress, pollution, and noise levels; these newly recognized elements have been all linked to the severity of atherosclerosis in modern societies as well as in mummies in ancient Egypt and tribes. Conversely, serene environments, low-level pollution, and greenery landscapes are associated with reduced levels of disease activity.

Recent studies have established a putative mechanism where the nexus is microparticles of pollution which elicit oxygen radicals which in trigger inflammation and generalized vascular injury. New fascinating evidence has also revealed a link between environmental

stress such as noise or tension with brain triggering of inflammatory pathways and vascular injury.

In Lebanon, we witness an unchecked level of pollution and are exposed to a high degree of psycho-social stresses and economic uncertainties. Observations derived from national studies and more relevant from data generated from YADUNA reveal a high burden of subclinical disease among Lebanese women as reflected by elevated Coronary Calcifications, a robust marker of disease.

In light of these findings, it becomes imperative that our government and society take serious measures and assume proactive roles in introducing policies aimed at reducing noise resolve the problem of pollution and achieve a stable political and economic balance.

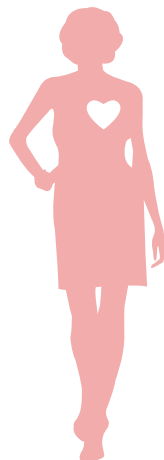
At YADUNA, we exert so much effort aimed at early detection of Coronary disease, advocating for healthy lifestyles, and in the treatment of traditional risk factors such as smoking diabetes and hypertension. We pledge to advocate for and collectively work on no less important, emerging factors such as pollution and noise which are inflicted by poor policies, bad politics, and suboptimal governance.

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## Heart Disease is the #1 KILLER OF WOMEN

Don't Miss a Beat.  
Know the Signs.  
Take Action.



### Heart Attack Symptoms

Heart attack symptoms in women are likely to be different from those experienced by men. Women may have common symptoms of pain or pressure in the chest, but also have these less obvious symptoms:



**Discomfort in the back, shoulders, arms, stomach, jaw, neck or throat**



**Lightheadedness or dizziness**



**Inability to sleep**



**Nausea or vomiting**



**Shortness of breath**



**Breaking out in a cold sweat**

## Air Pollution in Lebanon and Cardiovascular Diseases

One of the modifiable environmental risk factors for heart diseases is air pollution. Lebanon is a developing country in the Middle East region that is severely affected by air pollution. A recent study held in Lebanon dating less than a year highlighted the relation between indoor and outdoor pollution exposures among 100 Lebanese citizens aged 40 years and above, and their risk of developing cardiac diseases. It is interesting to cite several findings from this study to sensitize the Lebanese population about the negative effects of pollution on cardiovascular diseases and to bring efforts to reduce pollution and its burden on the population's heart health.

### Indoor pollution exposures:

- Heating home with wood is significantly related to cardiac problems.
- Cooking with wood is associated with cardiovascular diseases.
- Participants who heated their homes with electricity or with air conditioning or a heating unit had less cardiovascular events.

### Outdoor pollution exposures:

- Among participants suffering from heart diseases, there were significantly more people living close to a busy road than people who don't.
- Living close to a generator and living/working next to a power plant also increases cardiovascular diseases risk.

In fact, air pollution can increase people's cardiovascular risk by activating inflammatory pathways in the body, producing reactive oxygen species, causing an imbalance in the autonomic nervous system, decreasing heart rate variability, and altering the vascular tone.

This study can encourage additional research to confirm its findings and to urge professionals to find ways to reduce air pollution.

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Ref: Salameh P, et al. Cardiovascular Diseases and Long-term Self-Reported Exposure to Pollution. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 2019;39(1):43-49.



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Sources: 1 National Heart, Lung, and Blood Institute. (2005). Your guide to a healthy heart, 2 Diabetes Prevention Program Research Group (2002). Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*, (346)6, 393-403.

## Activities and Achievements

On the occasion of the cardiovascular disease awareness month on February 26, and for the third year in a row, the national committee for the prevention of cardiovascular diseases launched, in collaboration with the Ministry of Health and Yaduna foundation, the National Campaign for the early detection of cardiovascular diseases, during a press conference entitled "So your Heart beats with life".

The campaign targeted Lebanese citizens aged 45 and above, to whom 50 primary health care centers offered the early screening package for the overall risk of developing cardiovascular diseases for free, including necessary medical examinations and tests. Yaduna foundation played an important role in receiving Lebanese women, to perform examinations and undergo required tests. In addition, as part of the campaign, a group of doctors raised awareness through educational seminars at the primary health care centers in various regions of Lebanon.

Yaduna continues its achievements and engagement in various social activities especially in awareness campaigns, with the aim of motivating women to take care of their health and fight cardiovascular diseases, the number 1 killer in Lebanon and the whole world.

### Diana el Helou

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