

Impact of Screening and Early Life Style Intervention on Pre-Obesity and to Prevent Future Risk of Adiposity Based Chronic Disease (ABCD)

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Introduction

AACE/ACE [1] defines obesity as a chronic disease characterized by pathophysiological processes that result in increased adipose tissue mass and which can result in increased morbidity and mortality. Environment that interacts with susceptibility genes to promote weight gain referred as obesogenic. The new obesity diagnostic algorithm incorporates two components: (i) an assessment of body mass including validated ethnicity-adjusted anthropometrics to identify individuals with increased adipose tissue at risk; and (ii) the presence and severity of obesity-related complications [1]. If the BMI is <25 kg/m² (and waist circumference is not increased), these patients have normal weight and are candidates more prone for preobesity. The old diagnosis primarily

relied on the anthropomorphic measure of BMI, with uncertainties regarding how an increase in BMI affects individual health [2]. In certain ethnic groups (e.g., South Asians), individuals with BMI 23-25 kg/m² can still be diagnosed as obese on the basis of increased waist circumference using population and ethnicity specific threshold values as delineated by the International Diabetes Federation [3].

Materials and Methods

Role of Waist Circumference (WC) measurement

WC was used as an essential criterion for the anthropometric component in all patients or in subgroups of patients, for risks of cardio metabolic conditions (e.g., prediabetic states, cardiovascular disease risk) (Table 1). Measurement of waist circumference is by using inch tape (Figure 1).

Recording of mean blood pressure and heart rate

Recording of mean blood pressure and heart rate by using NIBP (Non-Invasive Blood pressure Monitor); and ECG recording for calculation of RR Interval (Heart rate) (Figure 2).

Recording of short term 5 minute HRV (Heart Rate Variability)

Sympatho-vagal balance = LF/HF Ratio or Mean RR interval (Figure 3).

Prevention of Pre-obesity

Reaching and maintaining a healthy weight is important for overall health and prevention of lifestyle diseases like diabetes, obesity etc.

1. **Diet:** Healthy meal pattern and reduced calorie meal plan
2. **Be Physically Active:** Physical activity need for weight control, many can maintain their weight by doing 150 to 300 minutes (2½ to 5 hours) a week of moderate-intensity activity such as brisk walking.

Population	Male	Female
United States	≥ 102 cm or 40 in	≥ 88 cm or 35 in
Europids (Caucasians)	≥ 94 cm or 37 in	≥ 80 cm or 31 in
South Asians, Chinese, Japanese	≥ 90 cm or 35 in	≥ 80 cm or 31 in
South and Central Americans	Use South Asian criteria until more specific data are available	
Sub-Saharan Africans, Eastern Mediterranean and Middle East (Arab)	Use Europid criteria until more specific data are available	

Table 1: Ethnic specific values for waist circumference according to International Diabetes Federation consensus worldwide definition of metabolic syndrome (www.idf.org).

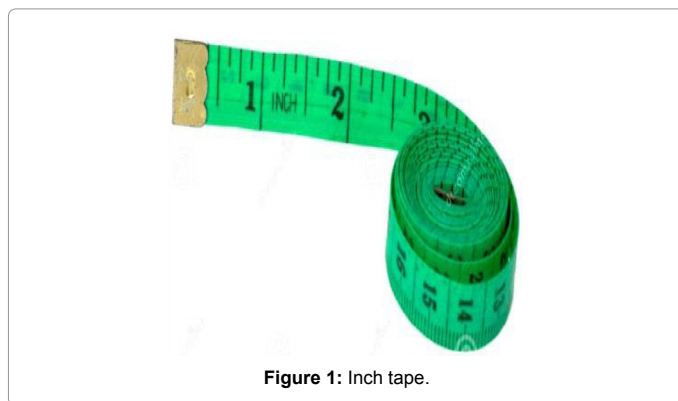


Figure 1: Inch tape.

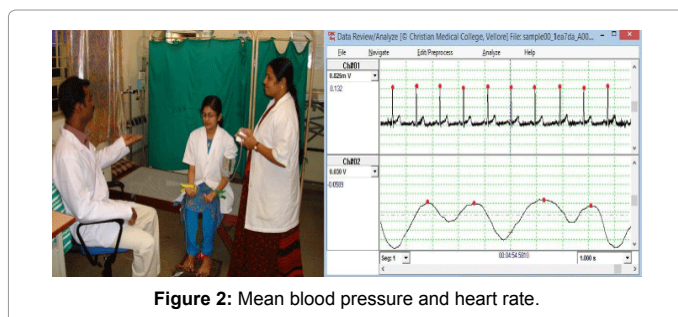


Figure 2: Mean blood pressure and heart rate.

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HRV Analysis Results

SARAL RR FOR 5 MIN.bf - x/x/x/x/x - x/x/x/x/x

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RR Interval Time Series

Results for a single sample

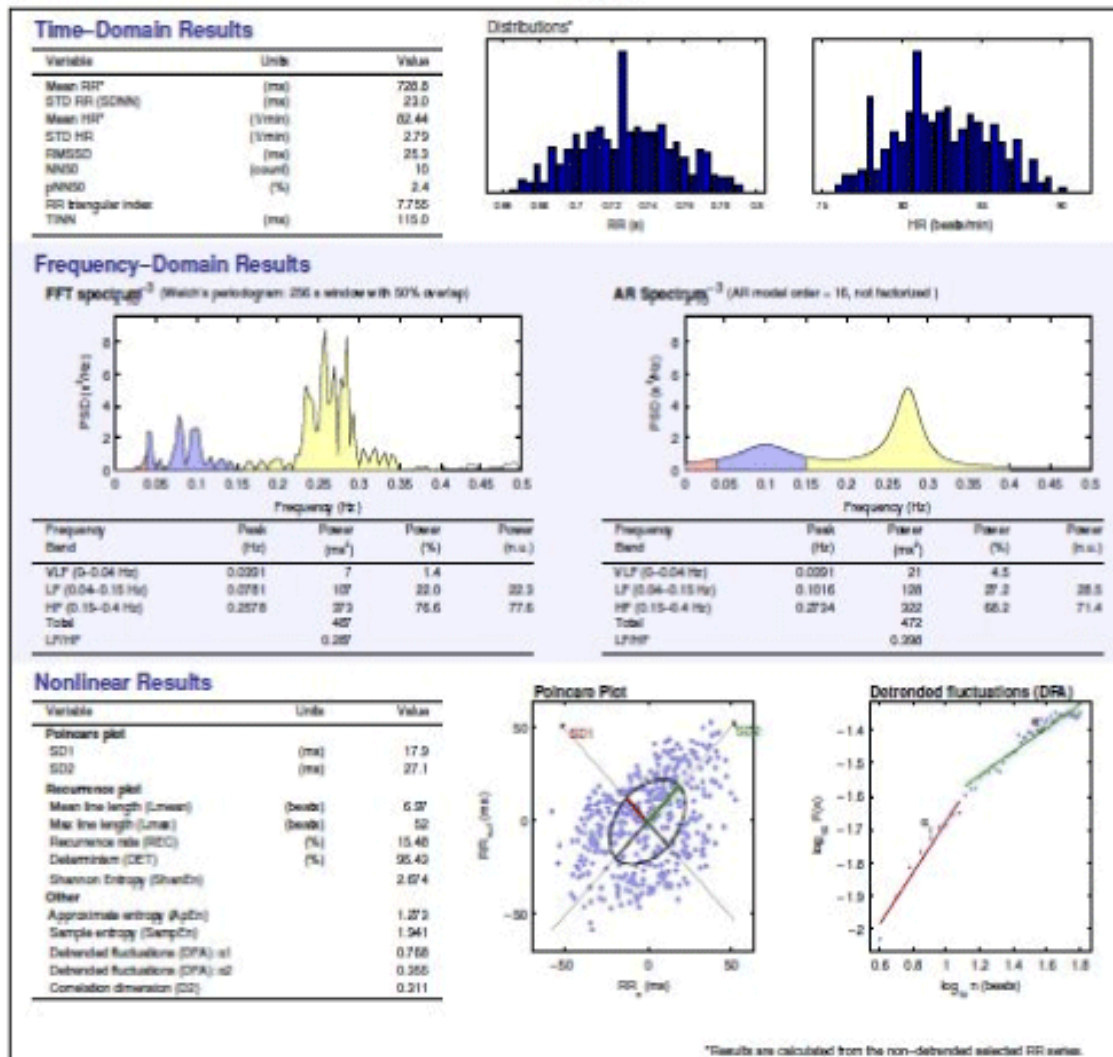
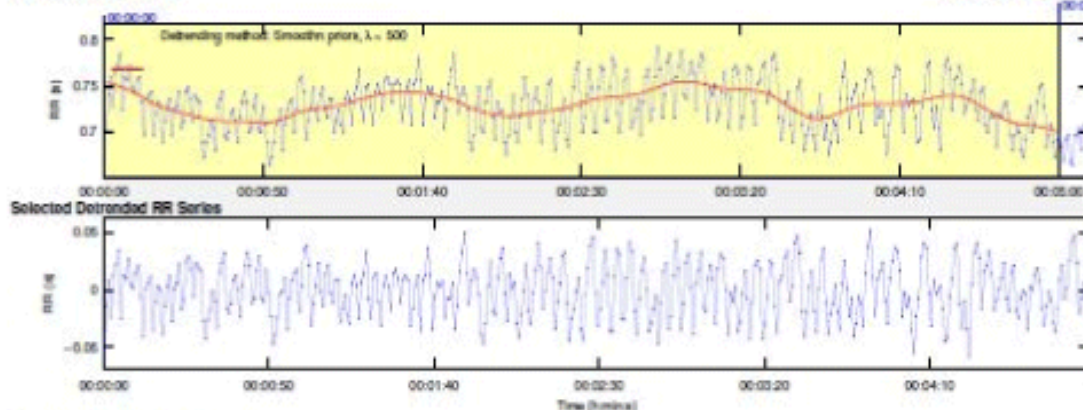


Figure 3: HRV analysis.



Figure 4: Yoga practice.

3. Reducing psychological distress and obesity through **Yoga Practice** (Figure 4).

Conclusion

A recent study evaluating the effects of yoga on anxiety and depression associated with obesity and its related symptoms. The effects

of yoga in reduction of inflammation and stress can be explained by the concept of psychoneuroimmunology, which is a relatively new field of science that investigates multidirectional interactions between behavior and immune system, mediated through nervous system [4].

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