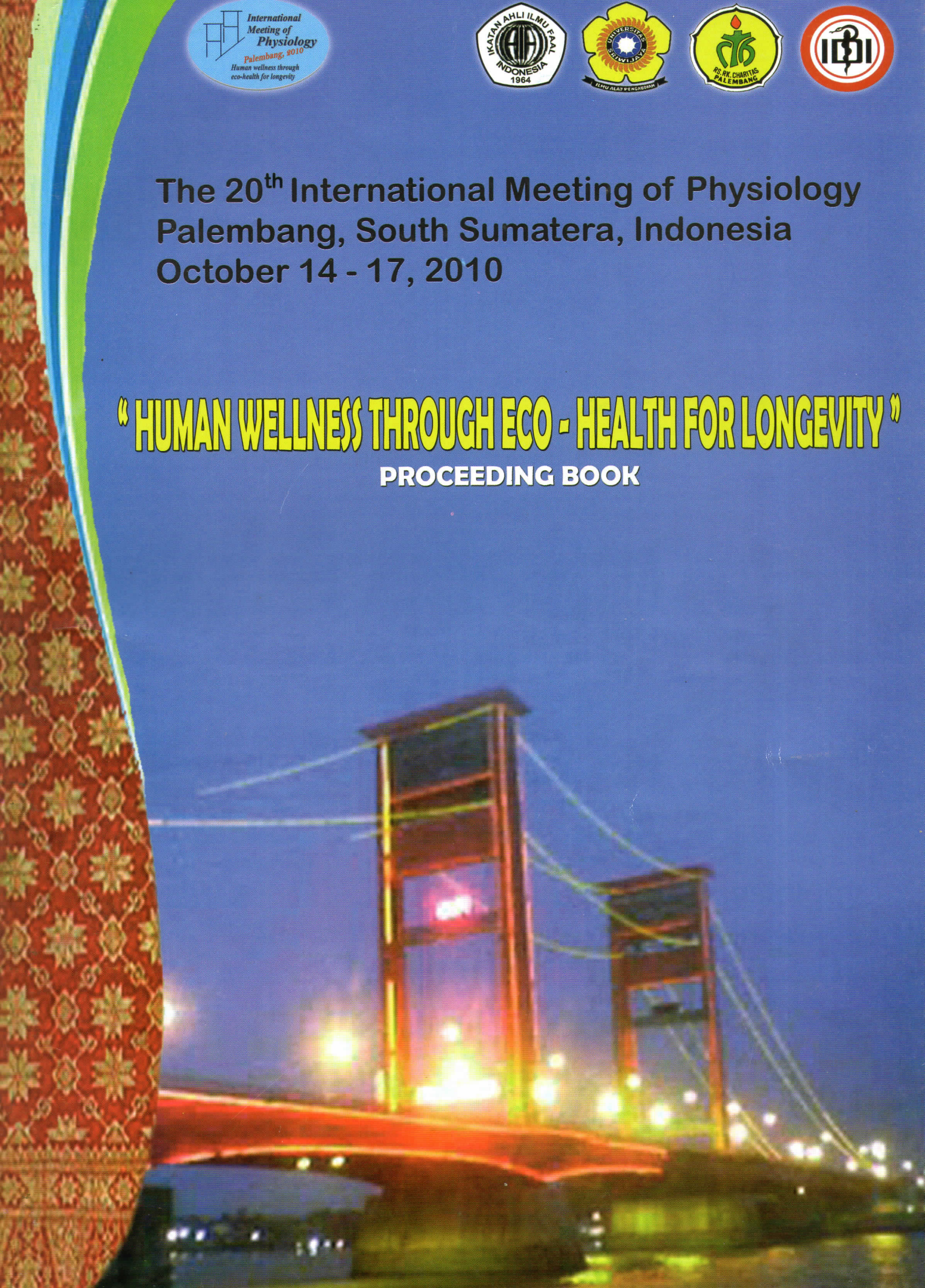


The 20<sup>th</sup> International Meeting of Physiology  
Palembang, South Sumatera, Indonesia  
October 14 - 17, 2010

**“ HUMAN WELLNESS THROUGH ECO - HEALTH FOR LONGEVITY ”**  
**PROCEEDING BOOK**





# 20<sup>TH</sup> INTERNATIONAL MEETING OF PHYSIOLOGY

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## 20<sup>TH</sup> INTERNATIONAL MEETING OF PHYSIOLOGY

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<b>POSTER</b>
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**Ergonomic Schoolyard At Primary Schools In Tabanan - Bali**I Gusti Made Oka Suprapta<sup>1</sup> , I Ketut Widana<sup>2</sup>1. Engineering Department of Bali State Polytechnic, E-mail: [widketut@yahoo.com](mailto:widketut@yahoo.com)

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The school yard is used as a place for activities such as to play, to rest or for other activities. Therefore, the purpose of this study was to assess whether the schoolyard already meets the rules of ergonomics or not.

The design of this study is cross-sectional. The samples are 10 elementary schools in Tabanan. Data on the schoolyard was collected by observation and interviews. Data collected includes physical factors, biological, ecological and ergonomic. Physical factors such as percentage of total area of the schoolyard to school, swimming, water, statues, garden lamps, walkways, concrete layers, paving, supporting and building cleanliness or freedom from garbage. Biological factors such as species richness and abundance of plants and animals, distribution of plants, the percentage of canopy closure, plant maintenance. Assessed the role of ecological factors on plant diversity of the schoolyard of essential ecological functions such as air circulation, animal habitats, conservation of water and absorption of pollutants. Ergonomic factors such as design, material, placement and maintenance of schoolyard.

From the observations and interviews found that 20% of school yard meets the criteria of physical factors, 40% of schoolyard meets the criteria of a biological factor, 30% of school yard to meet the ecological criteria and 40% of schoolyard meets ergonomic criteria. Necessary restructuring of the schoolyard in order to be ergonomic so that students, teachers and employees who perform activities in the school a comfortable, safe, healthy and effective.

**Keywords:** schoolyard, activities, ergonomics.

**Increased Response To The Cold-Pressor Test In Individuals With Obesity And Genetically Predisposed To Hypertension**

Indah Permata Sari<sup>1</sup>, Nurfitri Bustamam<sup>2</sup>, Marlina Dewiastuti<sup>3</sup><sup>1</sup>Student of Faculty of Medicine University of UPN "Veteran" Jakarta<sup>2</sup>Physiology Departement, Faculty of Medicine University of UPN "Veteran" Jakarta<sup>3</sup>Nutrition Departement, Faculty of Medicine University of UPN "Veteran" Jakarta

**Background:** Essential hypertension is a complex multifactorial disease. Environmental factors thought to modify gene expression in increased blood pressure, including obesity. Genetic factors also play a role in determining blood pressure's level, as evidenced in a study comparing twins monozygotic and dizygotic and research on the distribution of hypertension in the family. This study aims to determine whether the risk factors of obesity and genetic factors of hypertension in a person can be a predictor of hypertension.

**Methods:** This is an experimental research. The total sample is 36 students aged between 18-23 years who were divided into 3 groups 12 people in each group, ie: with no genetic factors of hypertension (FH-) and normoweight, with parents suffering from essential hypertension (FH+) and obese, and with parents suffering essential hypertension (FH+) and normoweight. Changes in blood pressure was measured by the Cold-Pressor Test.

**Results:** 1) the results of Chi-square test showed FH+ subjects with hypertension showed increased blood pressure higher than the CPT with FH- subjects ( $p=0.000$ ). 2) FH+ subjects with obesity shows sympathetic nervous reactivity response in diastolic blood pressure higher than in the FH+ subjects with normal BMI ( $p=0.042$ ).

**Conclusions:** Subjects who had hypertensive parents have a tendency to suffer from hypertension. Obesity and genetic factors of hypertension can be an early warning of impending hypertension that can be measured with the Cold-Pressor Test. **Key Words:** hypertension, obesity, Cold-Pressor Test





## **INCREASED RESPONSE TO THE COLD-PRESSOR TEST IN INDIVIDUALS WITH OBESITY AND GENETICALLY PREDISPOSED TO HYPERTENSION**

Indah Permata Sari<sup>1</sup>, Nurfitri Bustamam<sup>2</sup>, Marlina Dewiastuti<sup>3</sup>

### **Background**

Essential hypertension is a complex multifactorial disease. Environmental factors thought to modify gene expression in increased blood pressure, including obesity. Genetic factors also play a role in determining blood pressure's level, as evidenced in a study comparing twins monozygotic and dizygotic and research on the distribution of hypertension in the family. This study aims to determine whether the risk factors of obesity and genetic factors of hypertension in a person can be a predictor of hypertension.

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- 1) the results of Chi-square test showed FH+ subjects with hypertension showed increased blood pressure higher than the CPT with FH- subjects ( $p=0.000$ ).
- 2) FH+ subjects with obesity shows sympathetic nervous reactivity response in diastolic blood pressure higher than in the FH+ subjects with normal BMI ( $p=0.042$ ).

### **Conclusions**

Subjects who had hypertensive parents have a tendency to suffer from hypertension. Obesity and genetic factors of hypertension can be an early warning of impending hypertension that can be measured with the Cold-Pressor Test.

### **Key Words**

hypertension, obesity, cold-pressor test

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