

**THE CORRELATION BETWEEN THE IMPAIRMENT OF
MUSCULOSKELETAL, CARDIOVASCULAR,
PULMONARY SYSTEMS AND SIX-MINUTE
WALK DISTANCE IN FEMALES WITH
ADOLESCENT IDIOPATHIC
SCOLIOSIS**

SIWAPHORN CHANTHAPHUN

MASTER OF SCIENCE

IN MOVEMENT AND EXERCISE SCIENCES

ลิขสิทธิ์ของคณะวิทยาศาสตร์
Copyright© by Chiang Mai University
All rights reserved

THE GRADUATE SCHOOL

CHIANG MAI UNIVERSITY

SEPTEMBER 2009

**THE CORRELATION BETWEEN THE IMPAIRMENT OF
MUSCULOSKELETAL, CARDIOVASCULAR,
PULMONARY SYSTEMS AND SIX-MINUTE
WALK DISTANCE IN FEMALES WITH
ADOLESCENT IDIOPATHIC
SCOLIOSIS**

SIWAPHORN CHANTHAPHUN

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS**

**FOR THE DEGREE OF
MASTER OF SCIENCE**

IN MOVEMENT AND EXERCISE SCIENCES

**THE GRADUATE SCHOOL
CHIANG MAI UNIVERSITY**

SEPTEMBER 2009

**THE CORRELATION BETWEEN THE IMPAIRMENT OF
MUSCULOSKELETAL, CARDIOVASCULAR,
PULMONARY SYSTEMS AND SIX-MINUTE
WALK DISTANCE IN FEMALES WITH
ADOLESCENT IDIOPATHIC
SCOLIOSIS**

SIWAPHORN CHANTHAPHUN

THIS THESIS HAS BEEN APPROVED
TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF SCIENCE
IN MOVEMENT AND EXERCISE SCIENCES

EXAMINING COMMITTEE

Jatuporn WongsathikunCHAIRPERSON
Asst. Prof. Dr. Jatuporn Wongsathikun

Aatit PaungmaliMEMBER
Asst. Prof. Dr. Aatit Paungmali

Sukalya KritsnakriengkraiMEMBER
Dr. Sukalya Kritsnakriengkrai

4 September 2009

© Copyright by Chiang Mai University

ACKNOWLEDGEMENTS

I would like to acknowledge and extend my heartfelt gratitude to these following people who have made the completion of this thesis.

Firstly, I would like to thank my advisor Asst. Prof. Dr. Jatuporn Wongsathikun. Without her, this thesis could not have been completed. She showed me different ways to approach the research problems and the need to be patient to accomplish any goals. Also, I would like to express my sincere gratitude and appreciation to Asst. Prof. Somchai Pathumasutra, Asst. Prof. Dr. Aatit Paungmali, and Dr. Sukalya Kritsnakriengkrai for their valuable suggestions, comments, and helpful advices.

I am grateful to Assoc. Prof. Thanyalak Sriboonruang, the staffs of the Lung Health Centre, and the Prosthetic and Orthotics team for their assistances while recruiting subjects. Also, my thankfulness runs to all of my volunteers and their families who were willing to participate in this study.

The special thanks goes to Asst. Prof. Siriphan Kongsawasdi, Miss Nipaporn Thonglorm, and all my colleges and friends for their understanding, mental supporting, and encouraging me through my thesis work.

Finally, I would like to express my gratitude to my families who have always been supporting and encouraging me during the difficult time and have always been there for me.

Siwaphorn Chanthaphun