

Philippine APEC Study Center Network  
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## *PhilSHIFT and its Filipino chronotype survey: Using science for inclusive growth and development*

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STUDYING THE FILIPINO CHRONOTYPE  
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### Project Overview

## PhilSHIFT Research

*Chronotype-specific adjustment to shift work of  
contact center agents in the Philippines*

*Project 1: Chronotype surveys of Filipinos*



<http://philshift.upm.edu.ph/>

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## What is the BODY CLOCK?

### Imagine that:

- your body has a collection of clocks
- each body organ has its own clock
- every organ has its own timing according to its clock
- all the clocks follow the pace set by a **Master Clock**  
→ **suprachiasmatic nucleus (SCN) or "circadian pacemaker"**

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## The body clock telling time

- the body clock guides all organs to keep track of the 24-hour external time period (time of day)
- **zeitgebers** (Ger. "time givers"): clues that tell us the time
  - wristwatch time, work schedule, culture and meals
  - environmental temperature and light-dark cycle\*

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## Body clock, Chronotype and Entrainment

- body clock adjusts to follow the 24-hour day period
- **Entrainment** refers to the continuous adjustment of the Circadian System to "match" external time
- relationship between body clock and external time vary among individuals, and different types are called **chronotypes**

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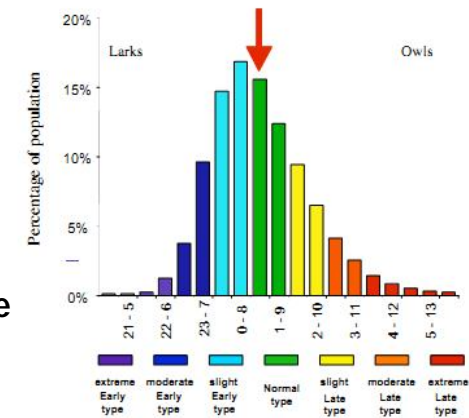
## Which chronotype are you?

- "larks" and "owls"; early or late persons
- based on middlemost time of sleep:
  - **Munich Chronotype Questionnaire (MCTQ)**
  - **Philippine Munich Chronotype Questionnaire (PhilMCTQ)**
  - Early type: extreme, moderate, slight
  - Normal type
  - Late type: slight, moderate, extreme



Illustration from Nature  
Vol 458, March 2009

## Chronotype based on Philippine Munich Chronotype Questionnaire (PhilMCTQ)



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## Chronotype and...

- Blood pressure
- Hormones (Melatonin and Cortisol)
- Body Temperature
- Physical activity, sleep and rest
- Scholastic and work performance
- Health

*"About half of the population in industrialized society may have circadian rhythms that are out of phase with the daily schedule they keep."*

- Of owls, larks and alarm clocks. Nature, Vol 458, March 2009

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## Internal Time, Well-being and Social Jetlag

### What is **social jetlag**?

**Social jetlag** refers to discrepancies between free days and workdays, between social time and biological time

*~ differences between what the social clock calls us to do and how the internal clock is set.*

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## Internal time and school performance

### Study period:

January-February 2009

**Intervention:** start of morning class moved from 0800 to 0830

**Participation:** 278 students at 9<sup>th</sup>-12<sup>th</sup> grades completed the surveys

*Surveys before & after time change*

- sleepiness
- morningness-eveningness
- objective data on missed appointments, tardiness, breakfast consumption

[www.medscape.com](http://www.medscape.com)

### Should Teens Be Able to Sleep Later?

William T. Basco, Jr., MD | Sep 13, 2010

Impact of Delaying School Start Time on Adolescent Sleep, Mood, and Behavior

Owens JA, Belon K, Moss P

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Arch Pediatr Adolesc Med. 2010;164:608-614.

## Internal time and school performance

### **After the time change, the students**

- were less likely to report not getting enough sleep or not being satisfied with their amount of sleep
- said their sleepiness was less
- that visited the health clinic lessened
- had less missed morning appointments
- requested fewer late passes

[www.medscape.com](http://www.medscape.com)

### Should Teens Be Able to Sleep Later?

William T. Basco, Jr., MD | Sep 13, 2010

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Arch Pediatr Adolesc Med. 2010;164:608-614.

The authors of the paper said:

*"A modest delay in school start time was associated with significant improvements in measures of adolescent alertness, mood, and health.*

***The results of this study support the potential benefits of adjusting school schedules to adolescents' sleep needs, circadian rhythm, and developmental stage."***

[www.medscape.com](http://www.medscape.com)

Should Teens Be Able to Sleep Later?

William T. Basco, Jr., MD | Sep 13, 2010

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*Arch Pediatr Adolesc Med.* 2010;164:608-614.

The body clock and shift workers

*Review of seven (7) published and 11 unpublished studies*

*> none of the local studies document the body clock*

***They were all about working in:***

Call center  
Hospitals  
Semi-conductor company  
Hotels and restaurants  
Educational & financial institutions  
Manufacturing (yarn)

REVIEW

**Shift work research in the Philippines: current state and future directions**

Jingky P. Lozano-Kühne<sup>1\*</sup>, Maria Eliza R. Aguilá<sup>1</sup>,  
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*Some potential outputs of PhilSHIFT Project 1*

- chronotype profile of key contact center cities (Metro Manila, Metro Cebu, Metro Clark and Metro Davao)
- data on age, sex, and outdoor light exposure
- PhilMCTQ-Shift: chronotype questionnaire for shift workers in the contact center industry
- revised English versions of the PhilMCTQ and PhilMCTQ-Shift launched through the Worldwide Experimental Platform (WeP)
- Filipino versions of the PhilMCTQ and PhilMCTQ-Shift

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*Other research projects of PhilSHIFT*

**Project 2 - Chronotype-specific adjustment to shift work of new contact center agents**

- Prospective cohort study


**Sleep and activity of Philippine contact center employees who work in a circadian light environment (project-in-development)**

- Light as an intervention for adjustment to shift work

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<http://philshift.upm.edu.ph/>


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**Know Your Chronotype**



For Filipinos with a regular daytime schedule, click on the flag or here to know your chronotype

Current PhilMCTQ Respondents: 2,070

For Filipino shift workers, click here for PhilMCTQ-Shift to know your chronotype.

**Welcome to the PhilSHIFT Homepage**

PhilSHIFT is an interdisciplinary group that brings together researchers from the University of the Philippines Manila (UPM) and the Ludwig Maximilians University Munich (LMU) in a collaborative effort that aims to study the Filipino circadian clock and shift work. PhilSHIFT is now engaged in a study to determine the Filipino chronotype.

PhilSHIFT now a program of UP-Center for Integrative and Development Studies

In 2012, PhilSHIFT became a program of the University of the Philippines Center for Integrative and Development Studies (UP-CIDS) in the area of employment. The UP-CIDS is mandated to "develop, organize and manage research issues of national significance, which, because of their importance and inherent complexity require an integrative and collaborative approach and research methodologies and skills of greater sophistication" (UP President's Executive Order, 24 September 1995). Considered the "think-tank" of the University, UP-CIDS encourages and supports University units and individual scholars who pursue these research initiatives until results are openly published and disseminated.

PhilSHIFT's first project with UP-CIDS is on the chronotype of Filipino population.

**Chronotyping the Philippines through PhilSHIFT**

Chronotype (chronos = time) reflects how your individual biological clock ticks and how it fits into the 24-hour day. Characteristics of the daily clock are genetically inherited and, together with your individual daily light exposure (e.g., working indoors or outdoors) influence your individual sleep preferences. Individuals differ in their biological timing, resulting in different chronotypes. The different chronotypes are apparent when you consider that some people are more alert in the morning, while others are able to produce their best work at night.


If you want to know your chronotype and help in our objective to determine the Filipino chronotype, please answer the **Philippine Munich Chronotype Questionnaire (PhilMCTQ)**. This will lead you to the Web platform. You will need to enter your email to be able to access the questionnaire and receive feedback. After entering your email, choose "PhilMCTQ" from the list of public projects and answer the questionnaire until you reach the 'thank you' message. Your participation is valuable and highly appreciated.

The PhilSHIFT Team

Download PhilSHIFT briefing note.

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***PhilSHIFT invites you to participate  
in the Filipino chronotype survey!***

Answer PhilMCTQ and get to know your body clock.  
**Web [philshift.upm.edu.ph](http://philshift.upm.edu.ph)**  
**E-mail [philshift@upm.edu.ph](mailto:philshift@upm.edu.ph)**

Follow the PhilSHIFT and  
the Filipino chronotype survey



**PhilSHIFT**