

A MICROCOMPUTER-BASED DAILY LIVING ACTIVITY RECORDING SYSTEM

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Introduction

Numerous types of human activity recording systems have been developed for recording posture, behavior and activity. However, these systems can not record simultaneously the physiological parameters such as Electrocardiogram and respiration.

Purpose

To grasp the subject's general health condition and living patterns, this study develops the daily living activity recording system for respiration, posture, activity/rest time periods and general activity level measurement.

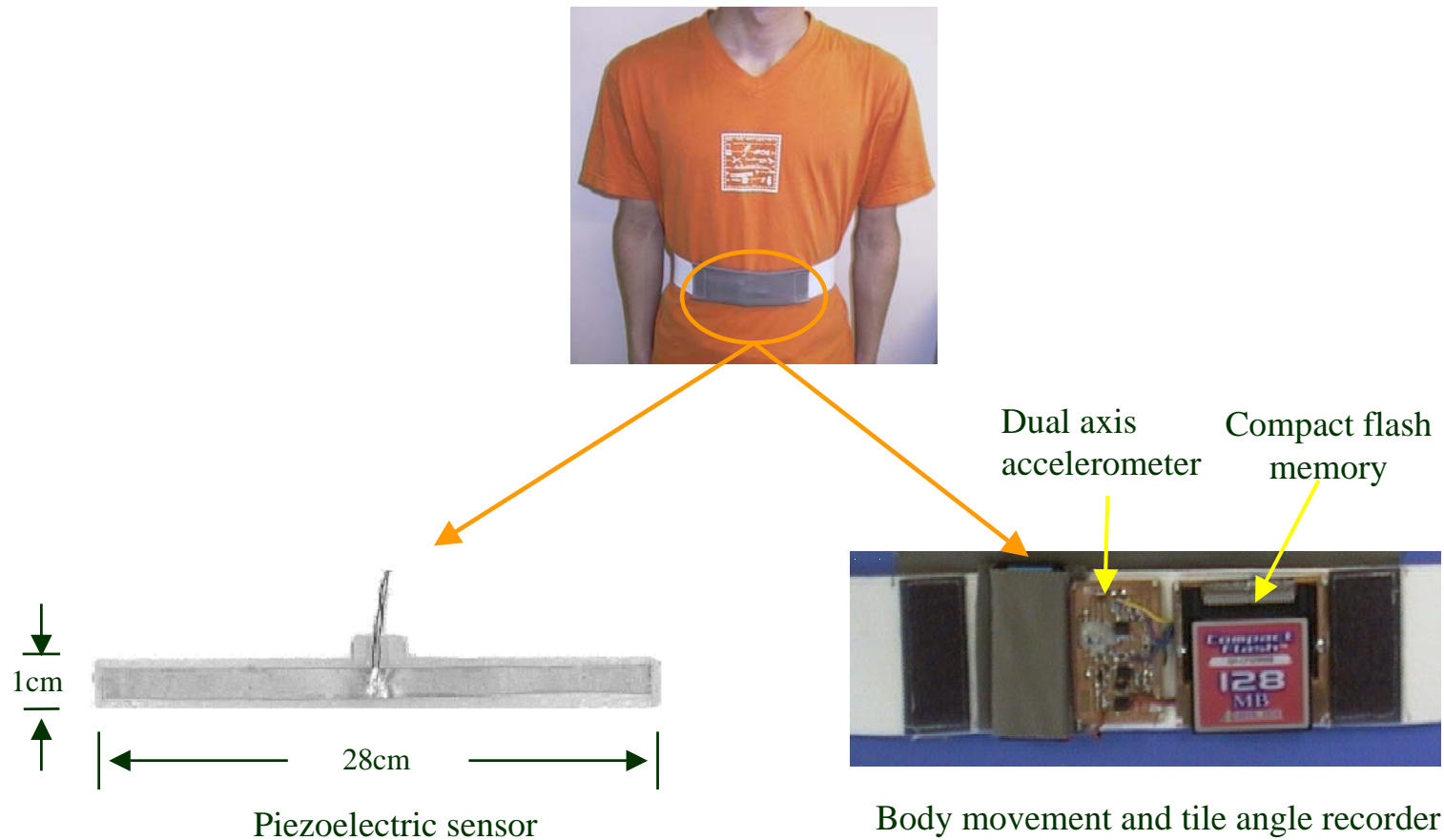


Figure 1. The microcomputer-based daily living activity recording system.

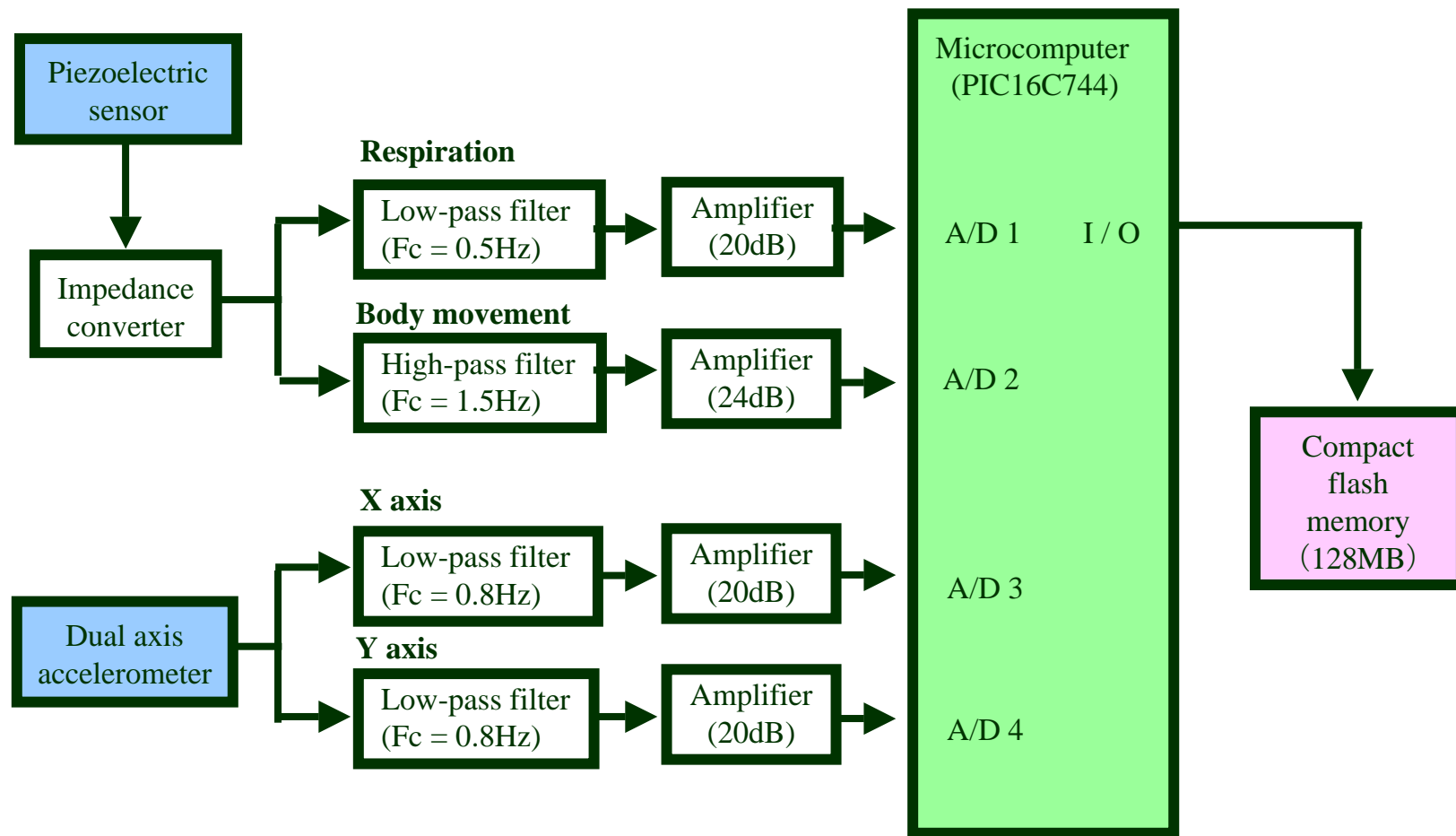


Figure 2. The body movement and tilt angle recorder block diagram.

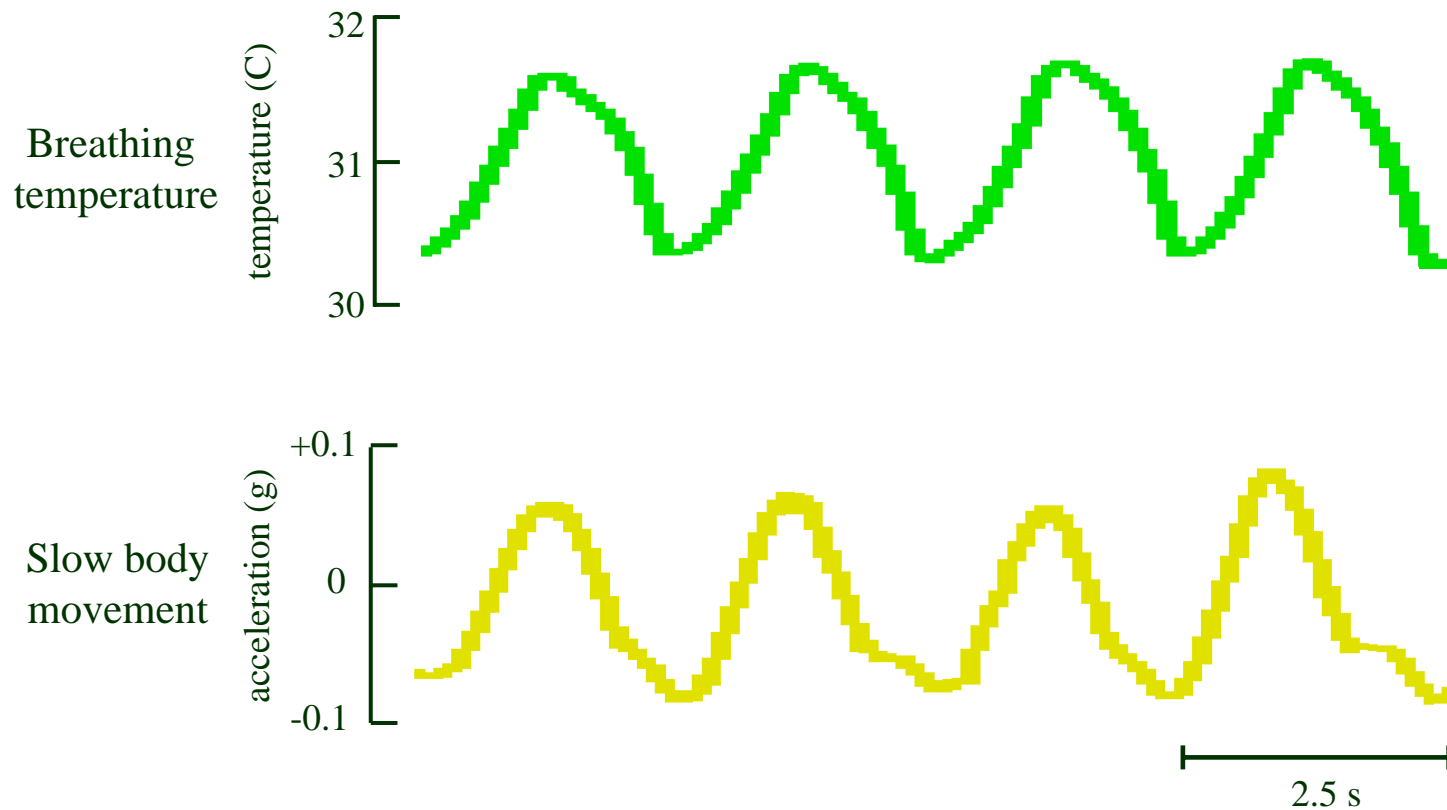


Figure 3. The breathing temperature and the slow body movement. The breathing temperature was recorded by a thermistor sensor, which was attached under nose. The slow body movement was detected from body movements.

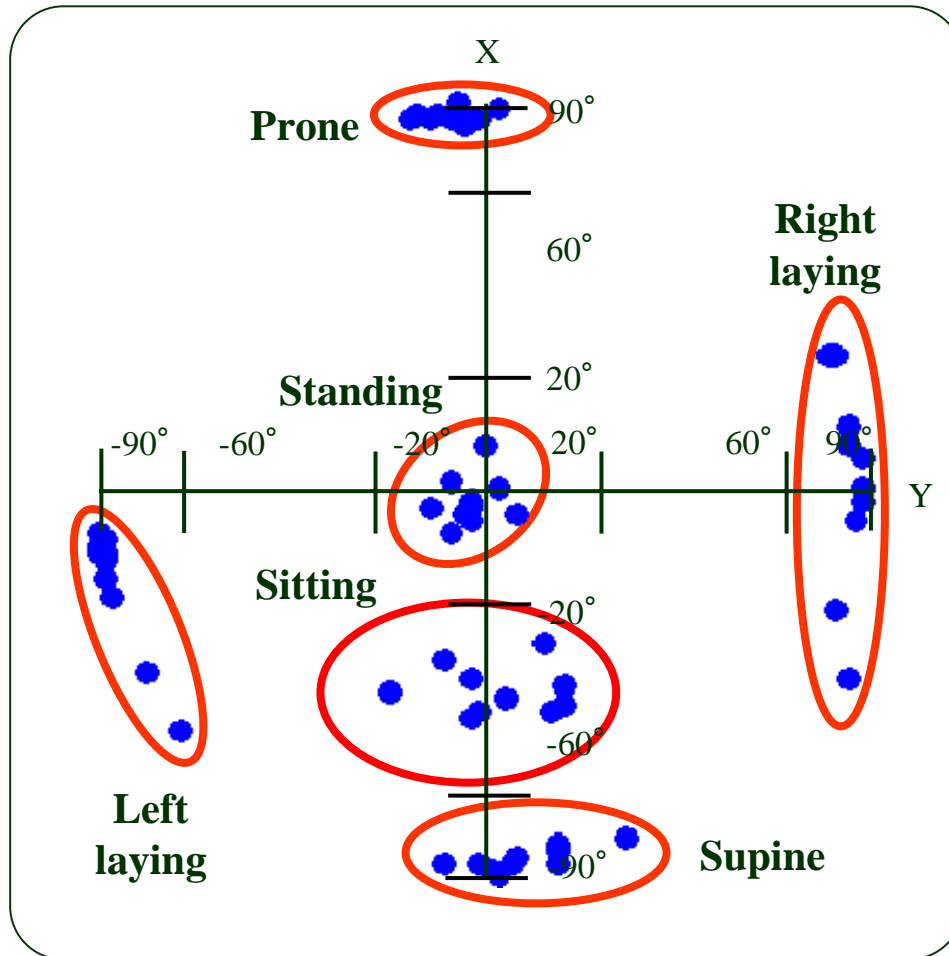


Figure 4. The tilt angles measured in various postures.

**Respiration
frequency**

Activity

Posture

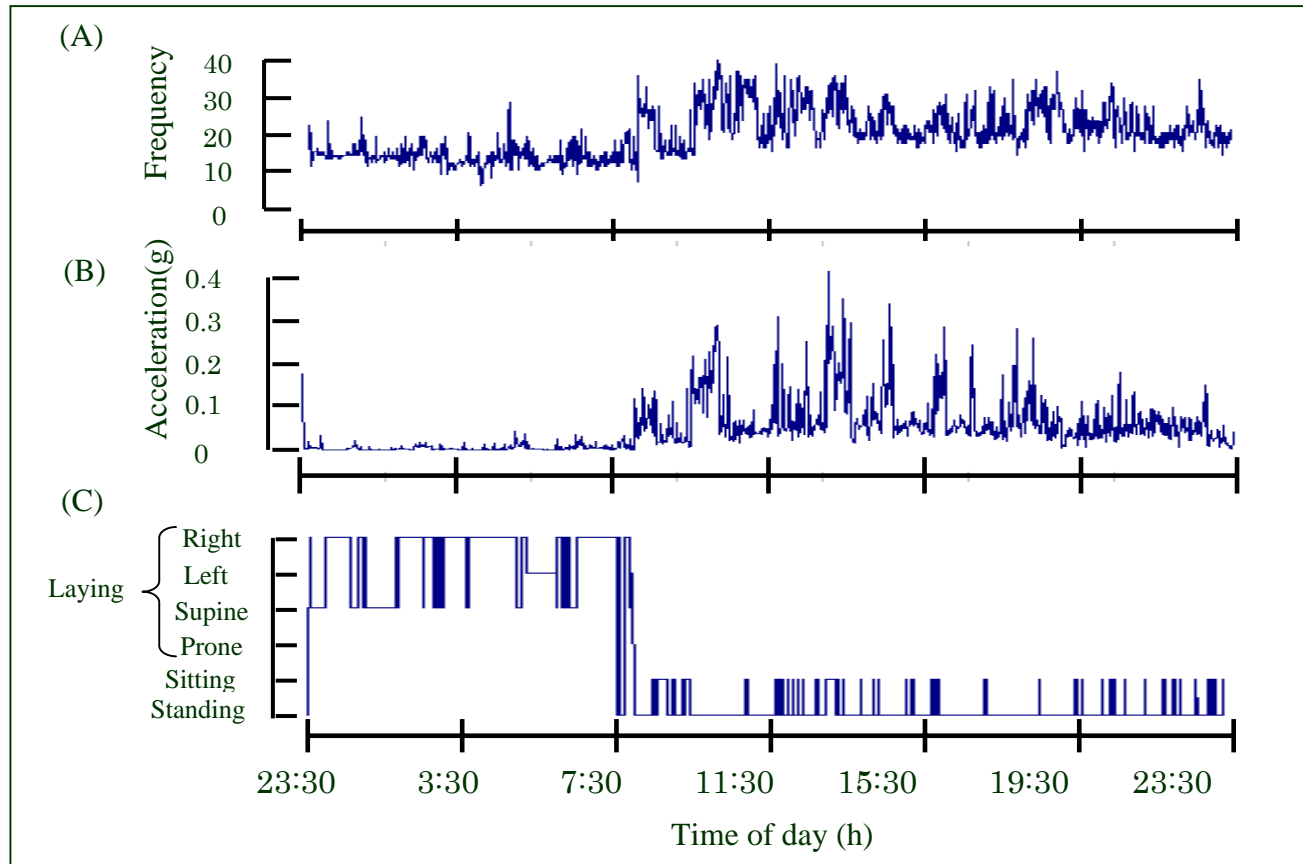


Figure 5. The posture, mean respiration and activity of successive 1 minute periods for 24 hours.

Conclusion

In this study, a newly-developed microcomputer-based system is used to record cardio-respiratory abdominal surface movements, posture, activity/rest time periods and general activity level, which enables a more complete estimation of overall health status, as well as detection of life-threatening physical conditions.