

## Relationship between Hot Environment and Physiological Load on Commercial Kitchen Workers

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**Aim:** A kitchen is a hot environment, but there have been few studies on the relationship between such a hot environment and physiological load on workers. In this study, we simultaneously measured the environmental parameters of kitchens and physiological conditions of workers, and investigated the relationship between them.

**Methods:** The subjects of this study were 16 male workers in 8 facilities, consisting of large-scale kitchens in primary schools and hospitals and small-scale kitchens in taverns and family restaurants. As the environmental variables of kitchens, outside air temperature, inside dry-bulb temperature, WBGT near heating-based cooking appliances, and the temperature around the workers were measured in summer. As the physiological variables of the workers, the upper arm skin temperature, and external acoustic meatus temperature were measured. The relationship between the environment and physiological conditions of the workers was investigated.

**Results:** Irrespective of heat sources, the temperatures of the large-scale kitchens were closely correlated with the outside temperatures. In the electric kitchens, WBGT near heating-based cooking appliances in the electric kitchens were higher than that in the gas kitchens, but in the other facilities, WBGT in the gas kitchens were significantly higher than that in the electric kitchens. There were significant correlation between the ambient temperatures and the upper arm skin and external acoustic meatus temperatures of the workers.

**Conclusion:** The WBGT of kitchen was below the acceptable level put forward by the Japanese Society of Occupational Health, suggesting that the physiological load of kitchen work is not influenced by heat sources.

## S-10-2

## Prospective Study of Nutrient Intakes for Pregnant Women in Taipei, Taiwan

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**Aim:** We used four dietary assessment methods including 24-hr recalls, 3-day food records, food frequency questionnaire (FFQ) and weekly dietary questionnaire to collect dietary information during pregnancy, compare the advantages and disadvantages, and calculated the relatively validity for these four methods.

**Methods:** We recruited 181 healthy pregnant women less than 20 weeks from Taipei Municipal Women and Children Hospital from 2002-2003. We collected dietary information by personal and telephone interviews during three time periods: First, before 12 weeks; Second, between 21-36 weeks; Third, after 36 weeks of pregnancy. The Chinese Food Frequency Questionnaire Editing System and the Normal University Food Frequency Questionnaire System were used to process the dietary data into nutrients. SPSS 11.0 and Stata 8.0 were used for various statistical analyses.

	24-hr recalls			3-day records			Weekly dietary frequency		
	Energy	Protein	Fat	Energy	Protein	Fat	Energy	Protein	Fat
1st trimester	1924kcal	15%	31%	2136kcal	15%	34%	2913kcal	17%	35%
2nd trimester	1980kcal	15%	32%	2289kcal	16%	34%	3629kcal	17%	35%
3rd trimester	2172kcal	15%	32%	2284kcal	15%	34%	3279kcal	18%	39%

**Conclusion:** The FFQ was collected during the last trimester and showed the energy intake, percent energy from protein and fat were 2908 kcal, 15% and 33%, respectively. Our data suggested that FFQ was a better tool to assess nutrient intakes during pregnancy, although it overestimated total energy and general nutrient intakes. The weekly dietary frequency also had the overestimation problem. The 3-day food records had the lowest response rate. The 24-hr recalls was the method relatively better to assess the average nutrient intakes.

## OS-10-1

## A Togolaise Public Health Nutrition Project

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**Aim:** To describe the formation and achievements of a public health nutrition project targeting infant malnutrition in Togo.

**Methods:** In July 2007, an association for the development and promotion of women and children's issues, was established with financial support from Ireland. Limited research exists on infant malnutrition, so the initial phase of the Association's work has focused on establishing a baseline data set within a randomly selected sample of families living in Lome.

Anthropometric measurements have been taken for baselines and are repeated monthly. Weaning and healthy eating advice for infancy appropriate to the area is given pictorially. Cheap, locally available alternative sources of major and micronutrients are suggested.

**Results:** Baseline and subsequent data will be presented and comparisons made with, where possible, West Africa data.

**Conclusion:** Small seed funding can make a significant difference to maternal and child health and wellbeing, by facilitating the development of an infrastructure to target the determinants of malnutrition in an area with poor health outcomes.

## OS-10-3

## Maternal Overweight and Obesity versus Breastfeeding Success Duration

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**Aim:** To assess the influence of maternal overweight/obesity pre-pregnant and/or of pregnancy weight gain to maintain breastfeeding.

**Methods:** A cohort was formed with all primiparous mothers of singletons (n=501) whose son was born between 24 May and 31 October 2007 in hospitals of metropolitan area in Oporto - Portugal, which tried to breastfeed. The data were collected by interview in the hospital and follow up by telephone interview. 455 mothers completed the interviews. BMI pre-pregnant and gestational weight gain were categorized according to guideline from the IOM. Definition of breastfeeding duration success: a child being fed with maternal milk to six months of age. The statistical analysis was made with SPSS using Kruskal-Wallis test.

**Results:** The success was 58.5%. To weight gain, 32.1% of the mothers that gained weight above recommended had less success than 44.5% that gained within and 50.9% less than recommended (p<0.005). Besides, to BMI pre-pregnant, 47.3% of the mothers that was Underweight, 43.2% Normal-weight, 35.9% Overweight and 29.1% Obese had success (p<0.148).

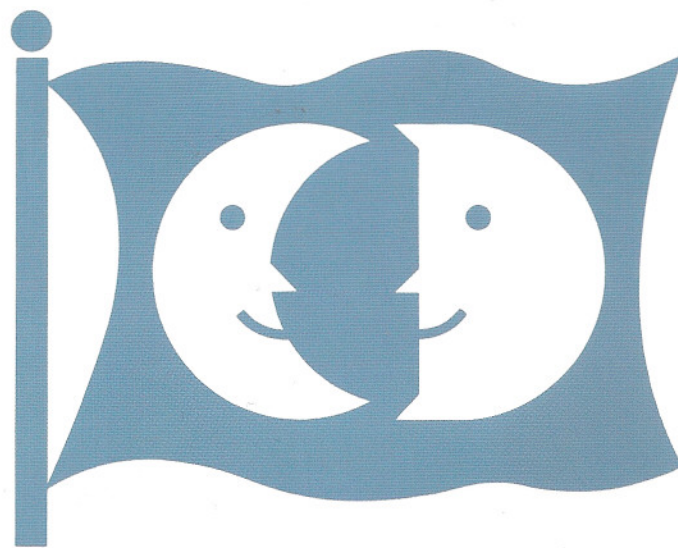
**Conclusions:** The inadequate weight gain during pregnancy has a negative effect on breastfeeding practice, corroborating with the authors. On the other hand, the BMI pre-pregnant doesn't influence significantly the breastfeeding success duration.

# Abstract Book

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PACIFICO YOKOHAMA  
Yokohama, Japan

September 8~11 2008



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Organized by: 15th ICD Organizing Committee  
Hosted by : International Confederation of Dietetic Associations  
Japan Dietetic Association

