

The heat waves in summer 2007 related to health impacts in Athens, Greece

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The objective of this study is to analyse the characteristics of the heat waves appeared in the greater Athens area (GAA), during summer 2007 and their impacts on humans by the use of human-biometeorological indices, based on the human energy balance of the human body, such as physiologically equivalent temperature (PET) and universal thermal climate index (UTCI). A heat wave is an extended time interval of abnormally and uncomfortably hot and unusually humid weather. Typically, a heat wave lasts two or more days and the population experience extreme hot bioclimatic conditions. Three successive heat waves appeared in June, July and August 2007, which took synergistically effects with catastrophic fires almost all over Greece, burning a total area of 2,011.700 square kilometres and killed 78 people.

All patients diagnosed with cardiovascular, respiratory diseases, as well as heat exhaustion, discomfort, dizziness and dyspnoea in the emergency departments units of four major hospital of Athens (Evangelismos, Sotiria, Hippocratio, Gennimatas), during summer season 2007 were taken into consideration.

The findings showed a higher impact of the first heat wave in June compared to later heat waves (July and August). This is mainly the effect of short-term adaptation to the thermal conditions, which is a combined effect of physiological acclimatization and behavioral changes.