



MC Index and human's health: MCI applied to influenza

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Human stress is related to psychological, physiological and environmental factors. Changes on our thinking affect our mood. Changes on our food habits affect our body condition. Changes on the environment can affect both. Climate and weather are two environmental dimensions that affect living organisms through the period they live. Changes and variability of weather and, by extension, of climate are test we must passed to avoid illnesses. It is assumed that small changes are related to natural variability and big changes are related to climate change. Any change starts a process of acclimatization and adaptation on human beings.

Under this general assumption, it has been defined a bio-meteorological indicator that measure how important the atmospheric changes can be in relation to human's health stability. The MC Index (Meteo Contrast Index) is based on three parameters that respond to (1) the stability of the atmosphere in a specific period of time; (2) the frequency of changes in the sequence of atmospheric circulation types in the same period of time (3) the quantitative estimation of how strong these changes have been in the studied period.

This index to quantify atmospheric contrast is only applicable at a synoptic scale, being needed to complement the bio-meteorological forecasting with empirical meteorological data from local weather stations. The MCI is scalable on time and can be applied to different temporal periods (from one day to years).

MCI has been calculated for influenza epidemic in three different climatic regions in Spain from 2000 to 2009, being the outcomes very interesting in relation to use the MCI in the bio-meteorological forecasting of other groups of non-infectious diseases in the future.