

HEALTH EFFECTS OF EXPOSURE TO WATER-DAMAGED HOMES AFTER FLOODING IN JAPAN

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Background: Torrential downpours and intense typhoons have been on the rise in recent years in Japan, possibly because of climate change due to global warming. Localized torrential downpours can cause serious flooding along rivers and other waterways. Flooding in the aftermath of torrential downpours or typhoon creates poor conditions ideal for indoor air quality such as dampness or mold growth in the water-damaged home, resulting in public health concerns about the possible adverse health effects associated with the poor indoor air quality. Furthermore, the water-damaged home also would cause insomnia, stress-related disorders due to the psychological suffering. We conducted a questionnaire survey on the physical and psychological conditions associated with exposure to water-damaged homes in Japan.

Methods: We randomly selected 593 households in six sites flooded within past 5 years and then distributed a questionnaire to 1 adult per household. Those households include two flooded level homes of flooded below floor level and flooded above floor level, and no water-damaged home as control. The survey was carried out from October 2010 through February 2011.

Results: Total 379 responses were obtained (response rate=63.9%). Indoor dampness, mold, strong odor, poor health conditions and insomnia were significantly increased in water-damaged home compared to the non-damaged home located in the same sites. Those effects were gradually decreased over six months; however the significant differences of those effects were remained. Strength of dampness and poor health conditions were increased in association with higher flooded levels in after a week of flooding.

Conclusions: Poor indoor air quality and health conditions were associated with exposure to water-damaged homes. Those effects were remained over six months after flooding and increased in water-damaged home with higher flooded levels. This study suggests that the rapid actions on public health and environmental hygiene for water-damaged home should be taken after flooding.