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## Workshop Rodent-Borne Diseases

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### High disease transmission risk from occasionally synanthropic rodent reservoirs

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The risk of transmitting pathogens from rodents to humans is determined by amongst others the contact zone in time and space. Transmission modes (indirect, direct) explain how pathogens are transferred to humans, but do not explain the conditions leading to the transfer of pathogens from rodents to humans. Here, we present the concept of “contact modes” between rodents and humans. We identified occasional synanthropy, viz. rodents occasionally entering human dwellings, as a major contact mode represented in 114 out of 216 reservoir rodent species and being a contact mode in 50 out of 67 zoonotic diseases spread by rodents. We revealed occasional synanthropy to be common in northern latitudes in North America, large parts of Europe, Russia and East Asia, while true synanthropy (species more or less exclusively found in and near human dwellings) to be more common in southern latitudes in South America, Africa and South-East Asia. Occasionally synanthropic rodents spend the majority of their life in other environments (e.g. forests, fields and wetlands). We analyzed intrinsic (e.g. population density) and extrinsic (e.g. weather conditions and food availability) factors potentially triggering occasional synanthropy. We discuss to which extent the timing of occasional synanthropy is predictable and how this knowledge can be used for alerting the public about transmission risk and for disease prevention and control.

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Jens Jacob, Jana Eccard (Editors)

6<sup>th</sup> International Conference of Rodent  
Biology and Management  
and  
16<sup>th</sup> Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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