

## Walking Behaviour of Tardigrada

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Water bear is a general term for the phylum Tardigrada. They are known as the strongest creature with strong resistance to the extreme environments. There are many studies aimed at clarifying the mechanisms of tolerance to the extreme environmental conditions. On the other hand, research on behavior is on the decrease. This research is aimed to collect basic data on walking behavior of water bear.

*Acutuncus antarcticus* is an Antarctic species and is smaller in size than other two species of tardigrades, *Milnesium* sp. and *Ramazzottius varieornatus*, which were previously examined. In the past studies, we examined two terrestrial tardigrades for body measurement and walking examination. By analyzing the data obtained from the two tardigrade species, we confirmed they walk with the alternating tripod gait which is found mainly in insects. The alternating tripod gait is known to be able to maintain the stable walk for insects. In the case of water bear, it is suggested that the fourth leg is used to achieve more stable walking. There was also a difference in walking speed between the two species.

In the present study, we will examine and compare the walking behavior of these three species, *A. antarcticus*, *Milnesium* sp., and *R. varieornatus*. By comparing the walking behaviors of three species differing in body size, the correlation between the walking behavior and the size of the body can be determined.