Functional response commonly describes predator and prey interactions. A growing body of literature shows that living organisms are constrained by the physical properties of the surrounding medium. We propose to improve our understanding of the predator-prey relationship by including an explicit consideration of the movement of the organisms involved, and hence of mechanics. The ability of moving, to search and capture a prey, is essential for most predators. Motion is affected by physical properties, in relation with body size. Considering mechanical effects from the medium grounds the functional response within its physical, local environment, and makes it dependent on measurable morphological traits and physical features. As an example of this kind of approach, we provide a model that derives classical parameters of a functional response from body size and physical factors, which can be easily measured. The novelty is that parameters are not estimated from observational predation data. This approach also provides easy ways to validate of falsify hypothesis. Hence, discrepancies between predictions and observations point immediately towards an error in the modelling, or means that important mechanisms are missing. Hence, measures done at the organismal level lead to patterns at the community level.