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Do You Collect More Rain by Walking or Running?

On a rainy day, when one forgets their raincoat or umbrella, should the individual walk or run to avoid getting wet? It is an old question that should have an answer that everyone can agree on. Would a person collect more rain by running, walking, or would the amount be the same?

This topic was chosen because many of the researchers still do not agree with each other; there is no scientific consensus. It would be useful for everyone to know the facts because everyone gets caught in the rain eventually. Also, it would be rewarding to discover the solution to a very old question. The problem is that the research does not agree on which way will keep a person drier. So, this will be a new experiment using the Scientific Method combined with previous research.

This experiment is going to test if one collects more precipitation by walking or running. “*Precipitation*, which is rain, snow, sleet, or hail or any kind of weather condition where something’s falling from the sky, affects everyone” (Vocabulary.com). When water vapor condenses, it falls to Earth as rain. This experiment will measure the amount of rain collected in *milliliters*. A milliliter is 1/1000 of a liter (Dictionary.com). In order to compare the data, one would have to use “a quantity that has a value intermediate between those of the extreme members of a data set,” which is a *mean* average (Britannica). The velocity, or movement *speed*, is simply walking and running (Merriam-Webster). Therefore, great care was taken to maintain consistent speeds. Much of the research, and this experiment, deals with physics. “*Physics* is a

science that deals with matter and energy and the way they act on each other in heat, light, electricity, and sound or in this case water” (Merriam-Webster).

According to the first person to study this debate, an Italian physicist determined that running through rain would keep a person drier by 10% (Berman). Since then, other researchers have come up with conflicting data. A research study by Science Alert, an experiment was done that has similar components to this project. They measured wetness per second, time spent in the rain, wetness per meter, and meters traveled. Unlike my experiment, the analyzers used the time that was spent in the rain, rather than the amount of rain absorbed by the person. The result was that by running, people would collect more rain. In another research conducted by Mythbusters was almost exactly the same as my experiment, the mythbusters conducted their experiment by using sprinklers mounted on the ceiling. The direction of wind was also considered and the same clothes were worn as the subjects walked through the rain. Afterwards, the weight of the clothes was measured. Mythbusters' results were that running also collected more rain than walking (BEC Crew). However, according to “Do you get wetter if you run or walk in the rain?” by university researchers Cody and Robert Landolfi, running collected less rain than walking. This experiment was conducted in a 10ft space while holding a cardboard sheet over their head and walking and running through the falling rain. Instead of measuring how much the cardboard weighed, the number of water droplets on the cardboard was counted. Their results were that walking keeps one drier. Many of the websites that were used stated that running in the rain was better than walking. However, there are several videos in which the experimenters got the results stating that walking actually collected more rain than running. Other articles included evidence that also supported this. As anyone can see, there seems to be no Scientific Consensus.

Why is the run or walk question so important? People who live in a country where there is a lot of humidity or people who live in a place where it rains without warning would benefit by

staying drier. Hawaii for example, is the state in the U.S. that gets the most rain. Hawaii's average precipitation is 1,618mm (Nico). While the country that gets the most rain is Columbia, with an average precipitation of 3240 mm (Osborn). Regardless of how much rain one receives, there are safety issues with running on wet surfaces. If it can be shown that walking keeps one drier than running, many falls and injuries could be avoided by telling people not to run in the rain. It is clear that there are people who would benefit from knowing the facts. However, the facts have to come from reliable sources. While gathering information, the background, credentials, and published studies were considered. First scientific journals were looked at then on to university studies and research centers. Also some science TV programming was used if it was known to be reliable. It is interesting to see that so many studies disagree with each other. Every source chosen explained how the experiments were conducted. However, the results were often very different. One can only assume that some were not following the scientific method.

The hypothesis for this experiment is, running will keep one drier than walking. In order to test this hypothesis, certain steps must be taken. First, the materials will be set up. The materials that will be used for this experiment are two bowls, a syringe, hose, and a ladder. Then, after the materials are in place, the test subject will hold one of the bowls and walk through the rain. Afterwards, the amount of water will be measured with a syringe and recorded. Then the subject will run through the rain and the same process will be repeated. Both walking and running will be repeated nine times each. After all of this testing is completed, it can be determined if walking or running is better. After collecting and reviewing the results, it seems that my hypothesis is correct. If rain was falling and there was a choice to run or walk then it would be better to run. However, more testing is needed because the amount of time spent in the rain, as in Cody and Robert Landolfi's research, seems to be a major factor.

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