

# Dog owners' accuracy measuring different volumes of dry dog food using three different measuring devices

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## Introduction

Obesity is a common medical disorder in dogs that can have a negative impact on longevity and quality of life. The majority of pet dogs in developed countries are believed to consume dry diets, with portion sizes most often measured by owners using some form of measuring cup. However, previous research has suggested that there is significant inaccuracy associated with the use of dry food measuring cups. This inaccuracy can result in consistent overestimation of dry dog food portions, which increases the risk of obesity developing over time.

To explore the issue further, this study aimed to determine dog owners' accuracy in measuring different volumes of dry dog food using different types of measuring devices.

## Approach

A total of 100 dog owners were randomly allocated one of three measuring devices: a one-cup dry food measuring cup, a two-cup graduated liquid measuring cup or a two-cup commercial food scoop. They were then asked to measure one-quarter, one-half and one cup of dry dog food. The participants' accuracy was assessed by weighing the measured amount using an electronic scale and comparing that weight to the correct weight in grams.

A mixed linear model was then used to assess the associations between the volume of food measured, the measuring device used by the participant and the participant's measurement accuracy.

Participants were also asked to complete

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## KEY FINDINGS

- Participants' inaccuracy in measuring dry dog food ranged from a 47 per cent underestimation to a 152 per cent overestimation in the volume of food measured across all devices and volumes measured.
- The level of inaccuracy observed significantly increased when smaller volumes of food were measured.

a questionnaire. Information collected included demographics, who in the household was primarily responsible for feeding the dog, how many meals a day the dog received and what devices the participants currently used to measure their dog's food.

## Results

Participants' inaccuracy in measuring dry dog food ranged from a 47 per cent underestimation to a 152 per cent overestimation in the volume of food measured across all devices and volumes measured. Measuring accuracy was found to be associated with both the volume of food measured and the type of measuring device used (Fig 1). Specifically, when accounting for the type of measuring

device, inaccuracy was greater when measuring a smaller volume of food. When controlling for volume, the one-cup dry food measuring cup was more accurate than the other two measuring devices tested.

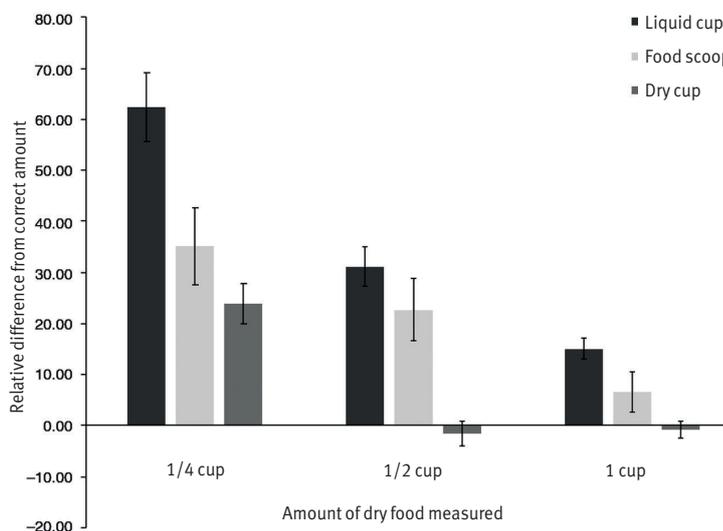
## Interpretation

The tendency of owners to overestimate the volumes of food measured suggests that dogs fed using many of the measuring devices assessed may be at increased risk of weight gain. The greatest inaccuracy was found when measuring the smallest volume, suggesting that smaller dogs are likely to be at the greatest risk of being overfed.

A limitation of the present study was that the volume of dry food participants currently feed their dogs was not measured, although accuracy of measurement may have been influenced by this. In addition, the majority of participants in the present study were female and very attached to their dogs, which may have introduced possible selection biases.

## Significance of findings

Consistent overestimation in the measurement of dry dog food could be a risk factor for obesity developing over time. Therefore, pet owners should be encouraged to use approaches that promote accurate measurement of dry dog food, such as an electronic scale or a volume-calibrated dry food measuring device.



**Fig 1: Accuracy of 100 dog owners in measuring one-quarter, one-half and one cup of dry dog food using a two-cup graduated liquid measuring cup, a two-cup commercial food scoop or a one-cup dry food measuring cup**