

Developing and Testing Stimuli for use in a Body Size Perception Experiment

Verity Barter¹, Lucinda Gledhill² & Martin J. Tovée²

1. Psychology Department, Newcastle University
2. Institute of Neuroscience, Newcastle University

Introduction

Body image concerns are prevalent among young women and it is important to be able to quantify these concerns. A number of sets of line-drawn images have been created which vary in apparent body fat to test this construct. These are of poor quality and low anthropometric validity. To improve the quality of the body image testing, I am developing a more realistic and accurate sequence of bodies. These can also be used in a projected training regime to treat body image concerns.

Method

Developing the Stimuli

- Two types of stimuli were used: 3D computer generated bodies, and digital photographs of real bodies.
- For the 3D computer generated bodies (Daz Studio 3.2 from Daz.com) we created one underweight body and one obese body, morphed them and took the intermediate bodies from the morph sequence at constant intervals to create a constant progression in body size. By measuring the virtual volume of these artificial images (using 3DS Max from Autodesk.com), it is then possible to calculate their body weight.
- Two methods were used for the digital photographs of real bodies. One set of images contained bodies of varying BMI. The other set was created by morphing the two most extreme images (based on BMI) and selecting intermediate bodies selected from the morph sequence at constant intervals
- This resulted in 3 sets of images to be tested. Each set of images contained a total of 25 bodies

Testing the Stimuli

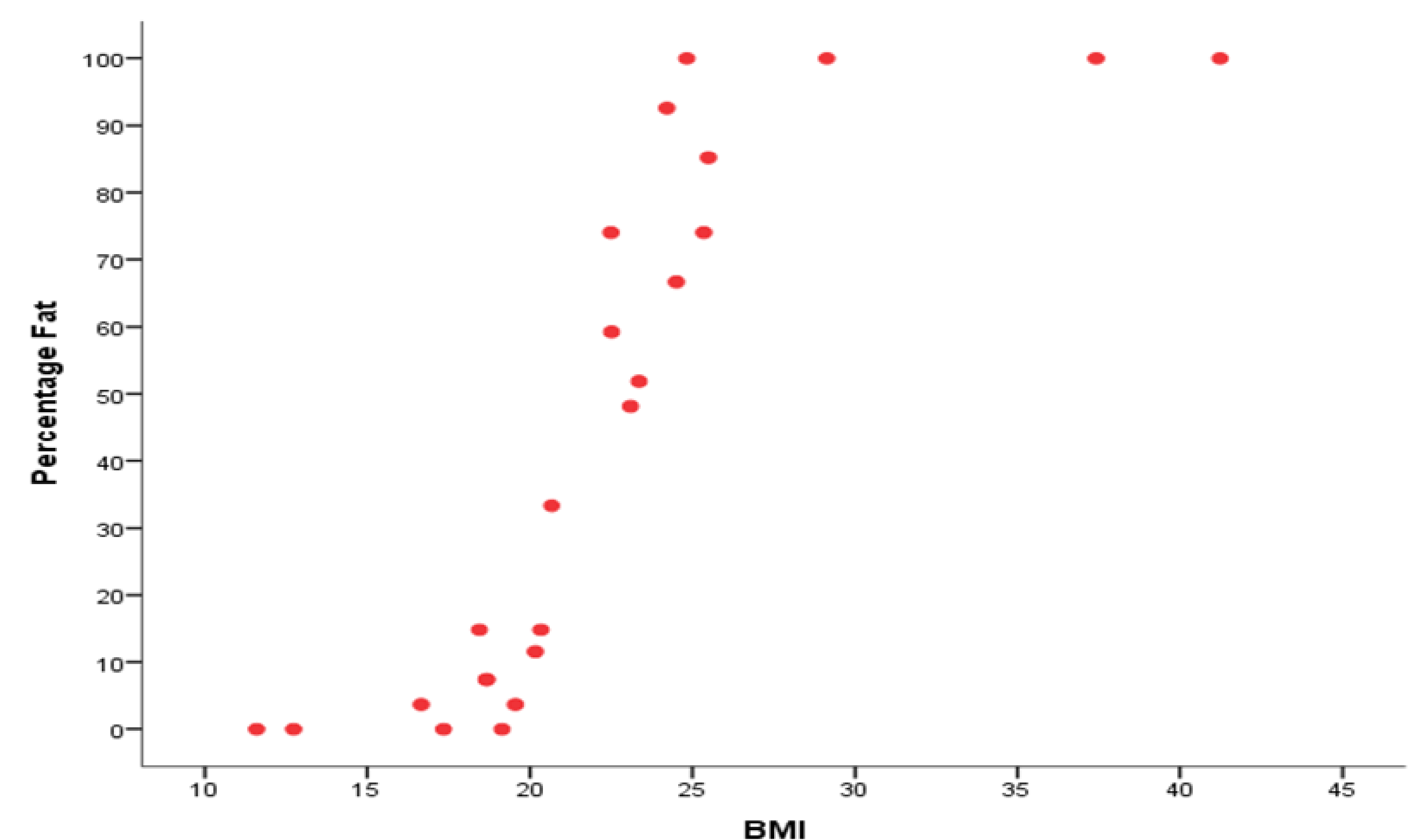
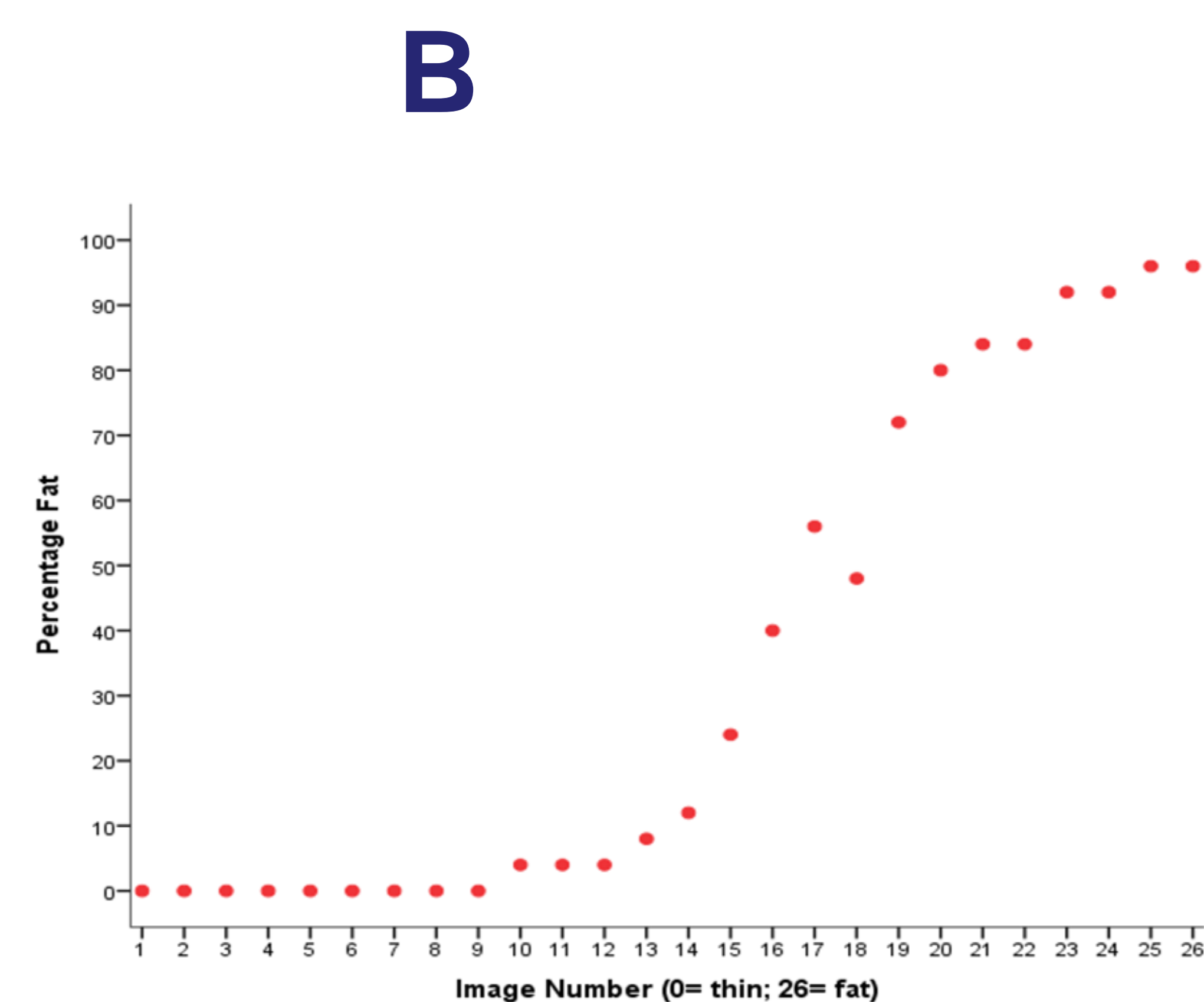
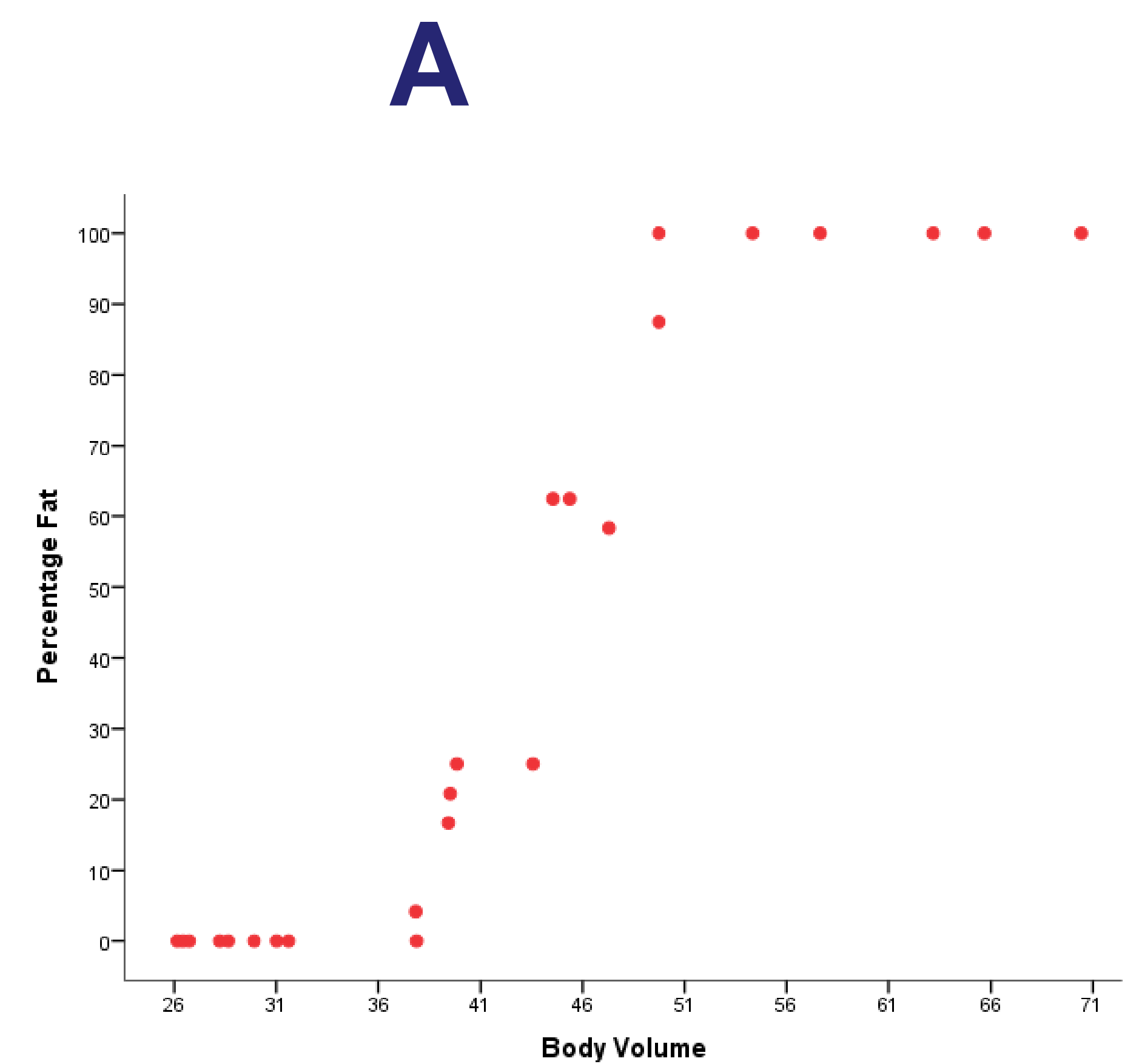
- Female participants (mean age 24.06 years) were recruited to complete online questionnaires. All questionnaires used the same paradigm; the only variable was the image set used
- In each questionnaire the participant was shown a body and asked to decide if it was 'thin' or 'fat' (a two-alternative forced choice task)
- We were looking for an 'S'-shaped response curve (where the smallest images are unambiguously thin, and the largest images are unambiguously fat). As the intermediate images increase in size, the proportion of participants labelling the body as 'fat' increases smoothly

Results

A response curve was plotted for each set of images. The image (from underweight to obese) was plotted against the percentage of participants who rated the image as 'fat'.

Discussion

We decided not to use the digital images of real bodies, as they varied too much in factors other than body weight (e.g. height, body shape, proportions etc.) and the quality of the morphed digital photographs was too poor. The response curve for the morphed 3D computer generated images was considered sufficiently smooth to go forward, to test as method for screening body image concerns (i.e. does the thin-fat mid-point move along the weight range with increased body shape concerns) and to proceed with the development of the proposed training regime using this set of images.



Examples of the bodies and their response curves. A) the 3D computer generated morphed bodies B) the morphed digital photographs C) the individual digital photographs