

Bubble in the scantron with your name and EID.

One answer per question. The correct answer will depend on the article assigned to you. For questions 2-8, each question is worth 5 or 6 points.

An option will be false either if it does not apply to the question (e.g., an option under 'replication' does not constitute replication) or because it was not in the assigned article. Assume that a statement in **quote** (" ") is from an article, but you will need to decide which article and then decide if the quote applies.

1. The article you should use is based on the first letters of your EID (your choices will so be graded)

- A. if your EID begins with A – FSS bubble in A and use the Padded shoe article
- B. if your EID begins with FVM – MET bubble in B and use the Stress reduction article
- C. if your EID begins with MEW – Z bubble in C and use the Diet and inflammatory markers article

2. Model being tested: (the article may not have explicitly described the model; you may need to infer it)

- A. Runners with higher body mass should wear shoes with greater shock absorption characteristics.
- B. Padded shoes reduce injuries
- C. Cardiometabolic health affects diet
- D. A healthy isocaloric Nordic diet reduces cardiometabolic risk.
- E. Mindfulness-based stress reduction (MBSR) prevents cardiovascular disease
- F. Mindfulness-based stress reduction (MBSR) reduces blood pressure.

3. Explicit protocol (which option best describes the explicit protocol for your article?):

- A. The runners were required to train at least once a week, to only use the shoes for running and to report their training data and any injuries. Participants used the shoes for five months, and posted information about how much they ran and what kinds of injuries they experienced on a dedicated Internet platform.
- B. The researchers recruited runners through solicitations at college athletic events and randomly divided the 89 participants into two groups.
- C. "Individuals in the MBSR group were asked to attend sessions of 2.5 hours for 8 weeks. Here, an experienced instructor led them through three main types of mindfulness training - body scan exercises (where you draw awareness to particular parts of the body), sitting meditation and yoga exercises."
- D. "... patients in the MBSR group gave lower readings for both systolic and diastolic blood pressure. On average, the systolic reading (the first, higher number) decreased by almost 5 millimeters of mercury (mm Hg) and the diastolic reading decreased by nearly 2 mm Hg."
- E. "Significant changes between the groups were found in non-HDL cholesterol (-0.18 , mmol L⁻¹ 95% CI -0.35 ; -0.01 , $P = 0.04$), LDL to HDL cholesterol (-0.15 , -0.28 ; -0.00 , $P = 0.046$) and apolipoprotein B to apolipoprotein A1 ratios (-0.04 , -0.07 ; -0.00 , $P = 0.025$) favouring the Healthy diet. IL-1 Ra increased during the Control diet (difference -84 , -133 ; -37 ng L⁻¹, $P = 0.00053$)."
- F. "We conducted a randomized dietary study lasting for 18–24 weeks in individuals with features of metabolic syndrome (mean age 55 years, BMI 31.6 kg m⁻², 67% women). Altogether 309 individuals were screened, 200 started the intervention after 4-week run-in period, and 96 (proportion of dropouts 7.9%) and 70 individuals (dropouts 27%) completed the study, in the Healthy diet and Control diet groups, respectively. Healthy diet included whole-grain products, berries, fruits and vegetables, rapeseed oil, three fish meals per week and low-fat dairy products. An average Nordic diet served as a Control diet. Compliance was monitored by repeated 4-day food diaries and fatty acid composition of serum phospholipids"
- G. An explicit protocol is ambiguous or absent in the article.

4. Replication (which option best indicates the nature of replication present in the study?):

- A. The 247 participants
- B. Individual runners each tested multiple pairs of shoes

- C. "...The major visits were in the beginning (0 week) and at 12 and at either 18 or 24 weeks (end of the study).
- D. "...309 individuals were screened..."
- E. The researchers note that further research is needed to see if the blood pressure-lowering effects can be maintained over time.
- F. The study looked at 56 men and women with hypertension
- G. No replication indicated in the article

5. Randomization (which option best indicates the nature of randomization present in the study?):

- A. The researchers randomly divided the runners into two groups.
- B. Shoes with soft soles or hard soles were distributed randomly to the 89 participants.
- C. "...multicentre study performed in six centres [Kuopio and Oulu (Finland), Lund and Uppsala (Sweden), Aarhus (Denmark) and Reykjavik (Iceland)]."
- D. "..... participants... were randomized into a control (Control diet) group or a Healthy Nordic diet group (Healthy diet) for the next 18–24 weeks."
- E. The subjects were randomly divided into two groups (MBSR program and lifestyle advice with muscle-relaxation activity).
- F. Blood pressures were taken at random times from patients in the two groups.
- G. No randomization was indicated in the article

6. Blind (which option best indicates the nature of blind present in the study?):

- A. Even the researchers did not know which participants received the softer shoes, ...
- B. Although the researchers found no significant difference in injuries based on shoe cushioning ...
- C. It is impossible for this study to be blind at any level because the stress reduction patients would always know which group they were part of depending on the activity they were performing.
- D. The study did not mention if the researchers were aware of the patient's group identity when recording blood pressure, so whether there were blind observers is ambiguous.
- E. "Compliance was monitored by repeated 4-day food diaries and fatty acid composition of serum phospholipids."
- F. "The visits to the study centres were in line with the original study plan, and the study was strictly blinded regarding the measurements until the trial was completed in all centres."

7. Double blind:

- A. The study was stated or clearly indicated as being double-blinded
- B. The study was indicated as being blind in one way but blind the other way is ambiguous or absent.
- C. Blind was either absent or ambiguous at both levels.

8. Standards (which option best indicates the nature of standards present in the study?):

- A. "the effects of dietary fatty acids on the metabolism of serum lipids and lipoproteins and their connection to atherosclerotic process have been thoroughly investigated"
- B. There were no identifying decorations on the shoes, and all appeared identical
- C. On average, the systolic reading (the first, higher number) decreased by almost 5 millimeters of mercury (mm Hg) and the diastolic reading decreased by nearly 2 mm Hg
- D. None of the above