A is the correct answer

B is incorrect because
$$E_k \propto v^2$$
 or $v \propto \sqrt{E_k}$ if $2E_k$ then $v_{\text{new}} = \sqrt{2}v$
C is incorrect because $E_k \propto v^2$ or $v \propto \sqrt{E_k}$ if $2E_k$ then $v_{\text{new}} = \sqrt{2}v$
D is incorrect because $E_k \propto v^2$ or $v \propto \sqrt{E_k}$ if $2E_k$ then $v_{\text{new}} = \sqrt{2}v$