Eccentric exercise often results in the production of markers of oxidative stress and an inflammatory response, which leads to delayed onset muscle soreness (DOMS). DOMS is associated with impaired muscular performance. Dietary interventions may reduce inflammation and improve physical performance. The first aim of this investigation was to determine if Açai supplementation reduces markers of oxidative stress and the inflammatory process caused by eccentric exercise. The second aim was to determine if Açai supplementation reduces muscle soreness and improves muscle function. Individuals were counterbalanced/stratified into the Açai group or a placebo group. Supplementation started 48 hours prior to downhill running. Markers of oxidative stress and inflammation, and range of motion, muscle soreness perception, agility, and vertical jump displacement were assessed at baseline, after, 24, and 48 hours after downhill running. Twenty collegiate athletes and non-athletes (21±2 years old) completed the protocol. The Açai group ($N = 10$) reported significantly less muscle soreness in the quadriceps muscle ($p = .011$) compared to the placebo group ($N = 10$). In addition, there was a significant difference ($p = .023$) in the group by time interaction in the quadriceps muscle soreness. Furthermore, the Açai group scored slightly different on range of motion, agility, vertical jump displacement, creatine kinase, and c-reactive levels.
compared to the placebo group throughout all 4 time periods. Açai has demonstrated to be an effective supplement to decrease quadriceps muscle soreness after downhill running. Furthermore, the consistency of results throughout the 4 time periods may suggest its potential to slightly change performance and levels of oxidative stress and inflammation.