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**Trial Translation**

**Language Pair:** English to Japanese

**Field:** Medical

**Instructions:**

1. Please put all of the translation after the original text.

2. Please rename the file with your name and the field. (i.e. Game - Blair)

**Original:**

PET with three-dimensional data acquisition using 18F-fluorodeoxyglucose (FDG) was applied to evaluate skeletal muscle activity in runners. Methods: Seven healthy adult male volunteers were studied. They ran for a total of 35 min, 15 min before and 20 min after intravenous injection of FDG. Another 7 adult male control subjects were also examined at rest. Images obtained through a set of whole-body PET scans were analyzed.

Regions of interest (ROIs) were manually drawn on images of muscles of both thighs, legs and feet, and the standardized uptake ratio (SUR) and total radioactivity distribution (TRD) for each region were calculated. Results: The work load was below the anaerobic threshold. SUR of foot, leg and thigh were low at rest but during running increased 5.19, 4.30 and 1.74 times, respectively. The SUR of posterior-to- anterior compartment of the leg was 1.1 Â±0.1 at rest and 1.6 Â±0.5 (P < 0.01) during running. The laterally index of both SUR and TRD changed significantly only in the foot of the dominant side during running.

TRD of the leg, less than half that of the thigh at rest, became equivalent to that of the thigh during running. TRD of the foot did not change significantly. Conclusion: Sole muscles showed highest metabolic activation per unit volume during running, which was higher in the dominant side. Comparison of whole muscle activity during running indicated the highest metabolic activation was in the posterior compartment of the leg, whereas thigh muscles showed relatively little changes during running.