

Heel riser height influence on kinematic and muscle activity of ski mountaineering – A field based study

- 14 experienced recreational skimo skiers completed four-6 minute on-snow trials with 0 cm and 5.3 cm risers on 5° and 16° slopes at a mean HR of 160 bpm in Part I.
- A subgroup of six skiers then skied at self-selected intensities with both risers only on the 5° slope in Part II.

Using the 5.3 cm riser resulted in:

- Greater RPE and Stride Frequency than 0 cm riser during Part I on the 5° slope.
- Less Glide Distance and Greater RPE and HR than the 0 cm riser when skiing at self-selected intensity in Part II.

Using the 0 cm riser resulted in:

- Greater Hip, Knee, and Ankle RoM and Stride Length than the 5.3 cm riser during Part I on the 5° slope.
- Greater Hip RoM and RPE than the 5.3 cm riser on the 16° slope.

No differences were observed between riser heights for EMG at either slope.

- Riser height exerts influence on HR, RPE, stride characteristics, and kinematics.
- Using the 5.3 cm riser decreased step length due to reduced joint RoM.
- The differences between riser heights for RPE, HR, and kinematics may be due to the unlearned body position as the CoM moves more anteriorly compared to no riser.

