

## Abstract GLMS 17 October 2019

*Time: 3.00-4.00 PM*

*Location: Boeringzaal*

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Sub-techniques in classic and freestyle cross-country skiing – what factors play a role in which to choose?

“In cross-country skiing (XC) both in the classic style as well as in freestyle (ski-skating) different techniques, often referred to as ‘gears’ (as in cycling) are applied. The technique of choice depends on the environmental conditions, particularly the slope in the terrain and consequently the speed of the athlete. The physiological response using these techniques, apart from work intensity, depends on these same environmental conditions. As a result, one particular technique in one particular condition appears to be most cost effective. Indeed, athletes tend to choose the most cost effective technique. The mechanisms that explain these differences are less well understood, but, particularly in the classic style, recent studies have unravelled some important aspects, e.g., fluctuations in movement energy, propulsion power, time available for propulsion, and speed of extension of the lower limb. When considering the free choice of technique under varying conditions by equal intensity, it appears that the slope rather than speed drives the athlete from one technique to the next. This contradicts the notion that the time available for a propelling action is the control mechanism.”