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Effects of physical environment on the evolution of Kashin-Beck disease in Tibet.

[Hinsenkamp M](#), [Mathieu F](#), [Claus W](#), [Collard JF](#), [de Maertelaer V](#).

Hôpital Erasme, Service d'Orthopédie Traumatologie, Université Libre de Bruxelles (ULB), 808 route de Lennik, 1070, Brussels, Belgium, mhinsenk@ulb.ac.be.

In previous studies we observed a proximo-distal gradient of lesion frequencies along the limb, with the distal joints being the most often affected. This suggests an associated effect of environmental factors on the most exposed joints. On a population of 820 children (mean age 13 years) of endemic areas distributed in groups of healthy and severity stages I to III of KBD (Kashin-Beck disease), the effects of different working activities were studied. Heavy work like that of a ploughman were compared to light physical work, e.g. school children, and exposure to cold and history of frostbite were also considered. The most severe stages, II and III, were present in 72% of the ploughman vs. 29% of the schoolchildren, 70% of the shepherds vs. 30% ($p < 0.001$) of the schoolchildren, and in 65% of the shepherds working in winter vs. 40% of those working in the other seasons ($p < 0.001$). In the group with history of frostbite, 58% present the severest stages vs. 40% without ($p < 0.001$). The results confirm a highly significant relation between microtrauma and cold and the severity of the KBD alterations.

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