

SCIENCE'S COMPASS

two interventions extend life-span through a final common pathway or mechanism. However, had we not first maximized life-span by dietary restriction, we might not have discovered this, because at more moderate levels of dietary restriction, *chico¹* extends life-span.

More generally, interaction studies of this type cannot be used to demonstrate that two interventions act through different pathways. To illustrate this point, suppose that we had seen a further extension of life-span by *chico¹* at the level of dietary restriction that maximizes life-span. This might have meant that the mechanisms of extension of life-span were different. However, it might also have meant that the downstream pathway(s) through which dietary restriction extends life-span had not been fully activated at the food level that maximized life-span, so that further activation and extension of life-span were still possible by the addition of chico1.

We also agree that many of the phenotypes associated with the Ames mutation and caloric restriction in the mouse are different. However, these other phenotypes may not be causal in the extension of lifespan; they are correlated traits that may be induced by the upstream intervention through routes independent of those producing the extension of life-span.

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Ice Patch Discovery: A Joint Effort

I WOULD LIKE TO CLARIFY A STATEMENT MADE IN Kevin Krajick's article "Melting glaciers release ancient relics" (News Focus, 19 April, p. 454). Krajick states that I was the sole discovery was made in a combined effort by my wife Kristin and me. It was Kristin who initially noticed this incredible phenomenon. Because I am a wildlife biologist versed in caribou ecology, I appreciated the significance of this occurrence (1). Both people involved in this initial discovery should be properly credited.

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Reference 1. G. Kuzyk *et al., Arctic* **52**, 214 (1999).