

Does Winnie the Pooh have a B12 Deficiency?

Steffan Llewellyn and David McDonagh

The Centre for Interdisciplinary Science, University of Leicester

14/02/2014

Abstract

Decades of research studying the unique behaviour of Winnie the Pooh has provided a strong indication that a honey-specific diet could be causing a vitamin deficiency. A review is here conducted in the changes observed in the bear, and the likely cause of this behaviour.

Introduction

In 1958 a bear was first observed in the Hundred Acre Wood displaying anthropomorphic characteristics, including a preferred attire of a red t-shirt and significant bipedalism, which over a number decades has grown as a household name as Winnie the Pooh, or simply Pooh bear, both for its ambiguous evolutionary origin and charming personality. Despite his joyous demeanour, physiological changes have been noted throughout its lifetime, likely linked to a honey-specific diet. This has given rise to concern that vitamin deficiencies, particularly in B12, are now putting his health at risk. Highlighted here are the symptoms identified throughout the extensive period of observation recorded from 1988 to 2002, how these indicate a B12 deficiency, and the implications of this for Winnie the Pooh's lifestyle.

Patterns of Behaviour and Symptoms

Issues concerning Pooh Bear were first acknowledged from an aberrant behaviour towards acquiring honey. In similar changes noted in *Vulpes vulpes* adapting to an urban environment, behaviour deviating from that known of the genus *Ursidae* has been observed. Examples of this include the invasion of *Oryctolagus cuniculus* burrows and the sporadic formation of temporary mutualistic relationships amongst juvenile *Sus scrofa domesticus*, and *Equus africanus asinus* in the pursuit of honey^[1]. A preference for this diet is likely to cause health problems over a long period of time, in light of the absence of many key vitamins required for numerous functions in the body, in particular Vitamin A, Vitamin E, Vitamin K, Thiamin and Vitamin B12 (figure 1). Symptoms identified from the known records of Pooh Bear are summarised here to infer potential health problems.

Firstly, a characteristic yellowing of the skin is present in comparing initial photographs of the animal and those taken at a later date (figure 2). A restricted gait is also observed in its apparent preferred bipedalism, which, while unusual for *Ursidae* to adopt for long periods, can be seen to show limited lower joint movement. Frequent

Vitamins		
Amounts Per Selected Serving		%DV
Vitamin A	0.0 IU	0%
Vitamin C	1.7 mg	3%
Vitamin D	~	~
Vitamin E (Alpha Tocopherol)	0.0 mg	0%
Vitamin K	0.0 mcg	0%
Thiamin	0.0 mg	0%
Riboflavin	0.1 mg	8%
Niacin	0.4 mg	2%
Vitamin B6	0.1 mg	4%
Folate	6.8 mcg	2%
Vitamin B12	0.0 mcg	0%
Pantothenic Acid	0.2 mg	2%
Choline	7.5 mg	
Betaine	5.8 mg	

Figure 1: The vitamin nutritional information for a 339g serving of honey^[2].



Figure 2: A comparison between the skin tone of Winnie the Pooh in 1928 (left)^[3] and the period between 1988-2002 (right)^[4].

memory loss and fatigue are further present, where the creature frequently forgets levels of honey reserves, encouraging reliance on the reserves of other species.

In light of these symptoms, of the vitamins highlighted, characteristics observed in Winnie the Pooh appear to correlate with a B12 deficiency. Such a condition is common in those with restricted diets, such as vegetarians and vegans, coinciding with anaemia where the patient is often tired, easily fatigued and shows a paling of the skin^{[5][6]}.

Potential Treatment

As a natural B12 deficiency is rarely observed in animals, confirmation of this condition in Pooh Bear could give insight into the creature's evolutionary origins. While treatments traditionally used in *Homo sapiens* vary, it is recommended that initial cobalamin tests are first carried out to quickly assess whether this condition is found to be true. As well as ensuring the health of this childhood icon, such a study could also be of interest to the pharmaceutical industry aiming to bridge the gap between B12 deficiency treatments in *Homo sapiens* and those used in livestock^[7].

Acknowledgements

We would like to thank Walt Disney and his research group for making their data available to the public, and Alan Alexander Milne for his pioneering work in first discovering this unique species of *Ursidae*.

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