

Letter to the Editor

What's Good for the Heart Is Not Good for the Bones?

To the Editor:

A recent "Perspective" by Uriel S. Barzel (*J Bone Miner Res* 10:1431–1436, 1995, "The skeleton as an ion exchange system: Implications for the role of acid-base imbalance in the genesis of osteoporosis") quotes an article⁽¹⁾ "demonstrating that the incidence of osteoporosis is lower in vegetarians than in omnivores" (p. 1435). Because this is one of the only three quoted studies in *humans* supporting Barzel's hypothesis (the other two being epidemiologic ones), and in order to discourage other workers in this field to quote the same article again, I would like to point out that there was a cardinal error in the quoted article, the conclusion of which should have been that the incidence of osteoporosis is actually higher in vegetarians than in omnivores.

What Ellis et al.⁽¹⁾ had done was measure the *photographic* density of hand bones, i.e., the darker the film, the higher the densitometric reading. But a darker image of bone in an X-ray actually means a lesser bone mass than a

lighter image, i.e., their conclusion should have been the opposite of what they claimed.

The analysis of this error is clarified in greater detail in my Letter to the Editor "Photographic density versus bone density."⁽²⁾

REFERENCES

1. Ellis FR, Holesh S, Ellis JW 1972 Incidence of osteoporosis in vegetarians and omnivores. *Am J Clin Nutr* 25:555–558.
2. Meema HE 1973 Photographic density versus bone density. *Am J Clin Nutr* 26:687.

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Reply

Nevertheless, An Acidogenic Diet May Impair Bone

To the Editor:

I am thankful to Dr. Meema for bringing to our attention the analytical error in the paper by Ellis et al.,⁽¹⁾ an error that should have been recognized in the peer review process. In fact, I am now aware that these authors all but retracted their entire conclusion in a subsequent letter.⁽²⁾ The readers of my review will do well to cross out the words referring to the paper by Ellis et al.

Nonetheless, the overall thesis that an acidogenic diet is responsible for chronic excessive calcium loss remains firm and well supported by short-term data. In fact, I was made aware of two more studies, in lambs, which also support this thesis.^(3,4) It is relevant at this point to reiterate the statement in the review that, "appropriate long-term studies are required in order to verify this hypothesis in man."

REFERENCES

1. Ellis FR, Holesh S, Ellis JW 1972 Incidence of osteoporosis in vegetarians and omnivores. *Am J Clin Nutr* 25:555–558.
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3. Abu Damir H, Scott D, Thomson JK, Topps JH, Buchan W, Pennic K 1990 The effect of a change in blood acid-base status on body composition and mineral retention in growing lambs. *Animal Prod* 51:527–534.
4. Abu Damir H, Scott D, Loveridge N, Buchan W, Milne J 1991 The effects of feeding diets containing either NaHCO₃ or NH₄Cl on indices of bone formation and resorption and on mineral balance in the lamb. *Exper Physiol* 76:725–732.

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