Dr Trevor C Beard
Honorary Research Fellow
Menzies Research Institute
Hobart, Tasmania
Australia
www.salt-matters.org

Dear Doctor,

This patient follows (or hopes to follow) the Australian Dietary Guidelines for better health at a lower salt intake, but is under medical care and so may need your advice and supervision please [1]:

- many obstetricians are cautious about an abrupt change in salt intake during pregnancy, although trouble is unusual, and 42 women in a Dutch study dropped to 20 mmol/day from the 14th week of pregnancy until after delivery without incident [2];
- a few rare conditions affect salt metabolism, including Addison's disease, salt-losing nephritis, Bartter's syndrome, cystic fibrosis, gastro-intestinal fistula and ileostomy [1];
- prescription drugs—especially diuretics—may cause drug/diet interactions that can be as dangerous as drug/drug interactions, and this patient is—or may be—taking a diuretic.

Problems with diuretics

I am sending this letter because it is not yet well known that full dietary compliance with the salt guideline reduces 24-hour sodium excretion below 50 mmol/day [3]. This matters because diuretics can cause hyponatraemia at any salt intake, but the risk is inversely proportional to the salt intake and unacceptable below 50 mmol/day (the benefit/risk ratio is reversed) [4-6].

Moreover this level of salt control removes one of the main indications for diuretics. Salt in ordinary diets expands the extracellular fluid (ECF) volume and diuretics contract it, but below 50 mmol/day the ECF volume is physiologically normal (unexpanded) [7].

Salt is a powerful trigger for the vertigo of Meniere's disorder and vertigo is rare below 50 mmol/day [8, 9]. A Sydney teaching hospital finds sodium excretion rates below 50 mmol/day 'more effective and less troublesome than diuretics' [10].

The book *Salt Matters* has seven pages on 24-hour urine collection [11]. It is optional, but clinically useful—the 50 mmol boundary picks out patients who control their salt intake well enough to expect measurable results, and identifies the few who need more help and longer follow-up.

Interaction with other drugs

Good salt control can turn a therapeutic dose of lithium carbonate into an over-dose. The prescriber (usually a psychiatrist) needs to be fully aware beforehand of any change in salt intake.

It potentiates most antihypertensive drugs except calcium channel blockers. You can usually reduce the dose and side effects of ACE inhibitors and angiotensin antagonists and sometimes discontinue them.

There are a few things to bear in mind when monitoring the electrolyte balance:

- the kidneys regulate the blood electrolytes within narrow limits, so serum sodium has no connection with salt intake—it can be normal when sodium excretion exceeds 500 mmol/day.
- the most accurate measure for sodium intake is 24-hour urinary sodium excretion.
- the laboratory reference range for urinary sodium excretion is merely mathematical (the middle 95% of the population distribution, which has no bearing on human physiology).
- similarly the reference range for blood sodium reflects only the distribution in a population consuming 10–30 times more sodium and chloride than it needs for perfect health.
- hyponatraemia—based only on the lab reference range—is seldom treated if symptomless.

Yours sincerely,

Dr Trevor C. Beard
Honorary Senior Research Fellow
November 2007

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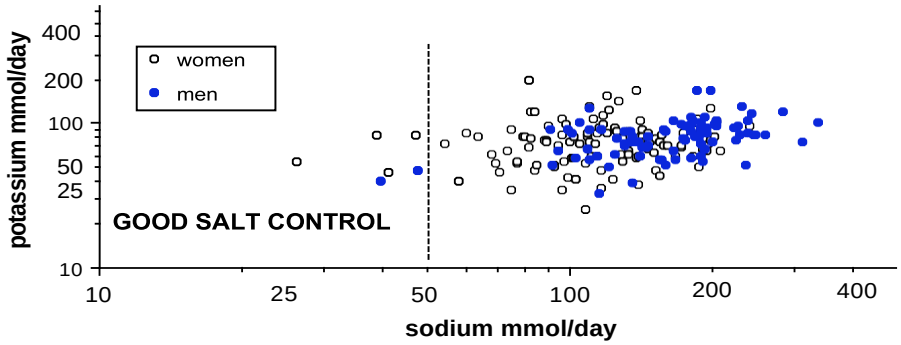
The 50 mmol boundary

The 'normal' diet of industrial societies provides a very wide range of sodium excretion, from about 20 mmol/day to 400 mmol/day, and these Hobart survey results (n=194) are typical. The wide variation is due to the varied sodium content of industrially processed foods—from about 5 mg/100g to 9000 mg/100g—and the fact that shoppers ignore the sodium content.



The outward appearance of good salt control by six people was accidental and ephemeral, as each person has urine results that vary over a wide range from one day to the next, except when all foods are consistently selected for low sodium content.

THREE WAYS YOUR SECRETARY CAN ORDER ***Salt Matters*** **(reference 3)**

RETAIL: Off the shelf or by order from any bookshop (RRP $24.95).

QUICK MAIL ORDER: Swinburne University Bookshop in Melbourne will post mail order copies on the same day by Express Parcel Post (next day delivery to central city postcodes) for AUD $32.00 (RRP plus postage and handling). A telephone order to (03) 9214 5484 will verify that they will post it from stock that day and save you sending credit card details by email, otherwise the email address is HKoelmeyer@groupwise.swin.edu.au and the postal address is Prahran Campus, 160 High Street, Prahran, VIC 3181.

ALTERNATE MAIL ORDER: https://www.lowsodiumfoods.com.au/ (the online low salt food specialists), have ***Salt Matters: The Killer Condiment*** (2007 edition) available for $24.95 plus delivery charges (delivery charges are calculated at the checkout)