

## CHROMIUM CONTENT OF A HOSPITAL DIET

K. ROESCH, C. PATTERSON, M. CAPRA AND C. REILLY

Chromium's role in glucose tolerance in rats was established by Mertz (Schwartz and Mertz 1959). A similar role was postulated by Jeejeebhoy et al. (1977) in patients on long term TPN. It may also be involved in lipid and nucleic acid metabolism (Kumpulainen et al 1979; Okada 1982).

Though its importance is recognised, absence of reliable analytical methods has restricted previous studies. Much published data on levels in food is in error (Iyengar 1981). Now availability of the Zeeman Polarised Atomic Spectrophotometer has overcome this problem (Roesch, Patterson and Reilly 1985).

Levels in food in a Brisbane hospital were determined with a Hitachi Model 7000 instrument as follows:

Food	Mean value	Range
	µg/kg	µg/kg
Breakfast cereals	38	32-46
Rice (brown)	<1	
Noodles (wholemeal)	<1	
Luncheon meat	38	27-49
Beef (roast)	17	10-24
Lamb (stewed)	4	3-5
Mince beef (fried)	19	<1-38
Steak (fried)	46	34-57
Chicken (roast)	<1	
Pumpkin (roast)	9	9-14
Cabbage (boiled)	<1	
Potato (mashed)	9	4-13
Broccoli (boiled)	6	<1-11
Milk drink	7	3-11

These results are below levels reported previously (Toepfer et al. 1973). In the present study daily intake was calculated to be 20-30 µg. This is within the ESADI for children 1-3 y (20-80 µg) but below that for all others (50-200 µg). It corresponds to actual intakes in the elderly (Bunker et al 1985).

BUNKER, V.W., LAWSON, M.S., DELVES, H.T. and CLAYTON, B.E. (1984). Am. J. Clin. Nutr. 39:797.

IYENGAR, G.V. (1981). Proc. TEMA-4, Perth, Australia.

JEEJEEBHOY, K.N., CHU, R.C., MARLISS, E.E., GREENBERG, G.R. and

BRUCE-ROBERTSON, A. (1977). Am. J. Clin. Nutr. 30:531.

KUMPULAINEN, J., WOLF, W.R., VEILLON, C. and MERTZ, W. (1979). J. Agric. Fd. Chem. 27:490.

OKADA, S., TANIYAMA, M., OHBA, H. (1982). J. Inorg. Biochem. 17:41.

ROESCH, K., PATTERSON, C. and REILLY, C. (1985). Proc. Nutr. Soc. Aust. 10:116.

SCHWARTZ, K. and MERTZ, W. (1959). Arch. Biochem. Biophys. 85:292.

TOEPFER, E.W., MERTZ, W., POLANSKY, M.M. and ROGINSKI, E.E. (1973). J. Agric. Fd. Chem. 21:69.

Department of Public Health and Nutrition, Queensland Institute of Technology, G.P.O. Box 2434, Brisbane, 4001.

The support of the Australian Sugar Industry, in co-operation with CSR Ltd, and Millaquin Sugar Co Pty Ltd., as well as the approval of the Board of the Royal Children's Hospital, Brisbane, are acknowledged.