

PROTEIN NUTRITIONAL STATUS IN CHILDREN
PRE- AND POST-LIVER TRANSPLANTATION

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The outcome of liver transplantation (Tx) in children could be adversely affected by poor nutritional status. This may be difficult to assess with anthropometry in the presence of fluid overload and steroid administration and thus more accurate estimates of body composition are required.

The aims of this study were to assess the effect of chronic liver disease in children on body composition and nutritional status and to determine the change in these parameters following liver-Tx.

Anthropometry and dietary intake were assessed in 15 patients pre-Tx (nine with hypoalbuminaemia, all with jaundice) and 12 patients post-Tx (mean time post-Tx: 1.30y; range 0.5 - 2.83y). Height and weight were expressed in terms of standard deviation (SD) scores. Nutrient intake was estimated from seven-day weighed home dietary intake records and expressed in terms of % of Australian RDI. Results are shown in the table below (means \pm SD given).

	Pre-Tx		Post-Tx
Age (y)	5.11 \pm 4.08		8.85 \pm 4.70
Weight (SD-score)	-1.29 \pm 1.38	*	0.13 \pm 1.36
Height (SD-score)	-1.26 \pm 1.46	*	-1.01 \pm 0.95 *
Protein (%RDI)	222 \pm 93] n=12	225 \pm 36
Energy (%RDI)	100 \pm 26		86 \pm 16] n=10

* significantly different from 0, P<0.05

In addition, lean body mass (LBM), derived from the sum of four skinfolds, and total body nitrogen (TBN), estimated by in vivo neutron activation analysis, were measured in children aged over four years. Results were compared with age and sex-matched controls and are shown in the following table (means \pm SD given).

	Pre-Tx		Control	Post-Tx		Control
n	8		8	9		9
Age (y)	8.03		8.18	10.08		10.04
	\pm 3.17		\pm 2.86	\pm 4.28		\pm 4.15
TBN (g)	575		745	815		950
	\pm 290		\pm 265	\pm 370		\pm 465
TBN/LBM (g/kg)	26.1	*	32.4	27.9	*	34.0
	\pm 5.8		\pm 3.1	\pm 5.0		\pm 4.5

* P<0.05

These preliminary data demonstrate that patients with chronic liver disease pre-Tx have a reduction in body protein stores associated with stunting and wasting. Post-Tx patients improve their weight but in the short-term remain protein depleted and stunted.

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