

Brain and liver samples were taken from 7 adult male *Papio anubis* after 32 months on a vitamin B-12 deficient diet of starch, sucrose, heated soya bean meal, cellulose, maize oil, mineral and vitamin supplements and ampicillin 50 mg/kg; 4 controls on the same diet received 2 µg cyanocobalamin daily. In liver mitochondria of deprived baboons, propionyl-carnitine oxidation was unchanged whereas oxidation rates of other substrates, in particular succinate and heptanoate, were higher than those of controls; mitochondrial oxidation rates tended to be lower in brain of deprived baboons. Lipogenic enzymes were not significantly different in deprived and control baboons; acetylcholinesterase was unchanged in liver, but decreased in the brain of animals deprived of vitamin B-12.