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Word Memory Test failure 23 times higher in mild brain injury than in parents seeking custody: The power of external incentives

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Motivation has an important influence on neuropsychological test performances. This study examined effort on the Word Memory Test (WMT) [1] in groups with differing external incentives. 774 adults with Traumatic Brain Injury (TBI), tested as part of a Workers' Compensation, disability or personal injury claim stood to gain financially by appearing impaired on testing. In contrast, parents ordered by the Court to undergo a parenting assessment were highly motivated to do their best on cognitive tests because their goal was to regain custody of their children. Consistent with these assumptions, 98.3% of 118 parents seeking child custody passed the WMT effort subtests but in cases of mild TBI the pass rate on the WMT was only 60%. The WMT failure rate in the mild TBI sample was 23 times higher than in the group of parents seeking custody. WMT failure was twice as frequent in the mild TBI group than in those with more severe TBI. WMT failure was also much higher in adults with mild TBI than in children with significant impairment from various clinical conditions. Such differences in failure rates on the WMT effort subtests cannot be explained by differences in cognitive skills but they are explainable by differences in external incentives. The findings support the recommendation that objective tests of effort should be used when evaluating cognitive impairment [2, 3].

Table 1: Rates of failure on WMT effort tests in groups with differing incentives.

Group	External incentive	Direction of incentive	N	Percent of group failing WMT*
Parents	Obtain child custody	Positive	118	<2%
Children tested clinically	None in most cases	Nil	259	11%
Moderate-severe TBI	Financial compensation	Negative	197	21%
Mild TBI	Financial compensation	Negative	577	40%

* Percentage scores rounded to nearest integer

Table 2: WMT failure rates by external incentives.

Predominant external incentive	Group	N	Cognitive impairment expected	% failing WMT Effort tests	Average WMT failure rate per group
Incentive to appear intact to gain child custody	Parents seeking child custody (VIQ < 75)	15	Yes	0%	1%
	Parents seeking child custody (VIQ >=75)	103	No	2%	
No external incentive in most cases	Institutionalized mentally retarded adults (FSIQ < 70) Brockhaus & Merten, 2004	32	Yes	3%	10%
	Children tested clinically (VIQ < 75)	45	Yes	18%	
	Children tested clinically (VIQ > 75)	213	Yes	9%	
	Children tested clinically (FASD)	52	Yes	13%	
	Children tested clinically (ADHD)	41	Yes	12%	
	Adults with fibromyalgia (no disability claim and no benefits) Gervais et al, 2001.	50	No	4%	
Incentive to appear impaired to gain new disability benefits or compensation or to maintain existing benefits	Adults with fibromyalgia (already receiving or claiming disability benefits)* Gervais et al, 2001.	50	No	35%	36%
	Moderate-Severe TBI seeking disability/WCB/personal injury compensation	197	Yes	21%	
	Mild TBI seeking disability/WCB/personal injury compensation	577	No	40%	
	University students in ADHD assessment (Sullivan, in press)	28	No	48%	

* This group had incentives to obtain or maintain disability benefits by appearing impaired but they were told that the test results were for research purposes and would not go on their file or affect their claim.