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Addendum

CONTEMPORARY CLASSIFICATIONS OF CONCUSSION SEVERITY AND SHORT TERM NEUROPSYCHOLOGICAL OUTCOME

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Objective: To contrast concussion severity classifications in terms of subsequent impairment and recovery as shown by standard neuropsychological tests.

Setting: Prospective referral based neuropsychological assessment.

Patients: 21 professional rugby league players with a clinical diagnosis of concussion. Another 21 non-head injured players matched on key variables acted as controls to adjust for repeated assessment.

Method: All players were assessed before the season. After concussion, players were retested within 48 hours and then again at 10 days. Controls were also assessed on this schedule. For each concussed player, a grade of severity was assigned according to the Cantu (1986), Colorado Medical Society (1991), and American Academy of Neurology (1997) guidelines.

Main outcome measures: Neuropsychological outcome was indexed through subjective reports of concussion related symptoms, and performance on measures of information processing speed, including the Digit Symbol, Symbol Digit, and Speed of Comprehension tests.

Main results: Irrespective of the classification system used, concussion severity was not related to subsequent neuropsychological outcome. Several concussed players with grade 1 injuries had impaired cognitive function at 10 days, whereas those with more severe grade 3 concussions showed full recovery at the same time after trauma. Subjective reports of symptoms were clear before cognitive status in most cases. Even when concussed players had returned to the levels determined before the season, they were still relatively impaired compared with uninjured controls.

Conclusions: Contemporary classifications of concussion severity did not predict short term cognitive status. Individualised objective assessment of players is recommended to assist return to play decisions. It is important to control for practice effects, as failure to do so may underestimate the effects of the injury.

This abstract was omitted from the published abstracts of the International Symposium on Concussion in Sport (*Br J Sports Med* 2001;**35**:367–77).