

# 25<sup>th</sup> World Pediatrics Conference

&amp;

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# Pediatric Critical Care and Emergency Medicine

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### Pediatric ER

**Objective:** Emergency Physicians or Pediatricians which works in the ER, afraid of missing intracranial injuries, obtain computed tomographic (CT) imaging in children who sustain blunt head injury. Clinical criteria (NEXUS Head CT decision instrument) can reliably identify children with important injuries, while excluding injury, and the need for imaging in many patients, but this work requires validation.

**Design and Method:** We conducted a prospective observational study to validate the pediatric NEXUS Head CT decision instrument. The instrument requires children to meet seven criteria to achieve “low-risk” classification (no evidence of skull fracture, no scalp hematoma, no neurological abnormalities, normal alertness, normal behavior, no persistent vomiting, no coagulopathy). We examined the instrument’s performance in identifying pediatric patients requiring neurological intervention, and those with important injuries evident on CT imaging, from among a cohort of 1,018 imaged children.

**Results:** The NEXUS Head CT decision instrument assigned high-risk status to 27 of 27 patients requiring neurological intervention (sensitivity, 100.0% [95% confidence interval [CI]: 78.9% – 100.0%]). The instrument assigned low-risk status to 330 of 991 children who did not require neurological intervention (specificity, 33.3% [95% CI: 29.0% - 36.3%]). None of the 330 lowrisk patients required neurological intervention (negative predictive value, 100.0% [95% CI: 98.1% - 100.0%]). The decision instrument assigned high-risk status to 48 of 49 children with significant intracranial injuries (sensitivity, 98.0% [95% CI: 83.6% - 99.9%]), and low-risk status to 329 of 969 children who did not have significant injuries (specificity, 34.0% [95% CI: 29.5% - 37.0%]). Significant injuries were absent in 329 of the 330 children assigned low-risk status (negative predictive value, 99.7% [95% CI: 97.4% - 100.0%]).

**Conclusions:** The NEXUS Head CT decision instrument reliably identified pediatric blunt head injury patients who required neurosurgical intervention, as well as those having significant injuries evident on CT imaging, while assigning low-risk status, and the potential to safely spare imaging in nearly one-third of the children

### Biography

Dr. Ana Maria Navio Serrano has completed his PhD at the age of 32 years and Doctor of Medicine and Surgery at the age of 40 from University of Alcalá. She is the Deputy of SEMES (Spanish Society of Emergency Medicine) for IFEM (International Federation of Emergency Medicine), Member of the Research Committee of the International Federation for Emergency Medicine, Deputy Emergency Medical Service of the University Hospital Moncloa, Coordinator of the Spanish Group of Shock in the Spanish Society of Emergency Medicine and holds many important positions in the field of Emergency Medicine in Spain. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of reputed.

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### Notes: