

# Reducing unnecessary CT scans in the emergency department with a new mild head injury assessment pathway

Klinikum Lüneburg  
Lüneburg, Germany

## KEY PARTNERS / STAKEHOLDERS

Felix Brüning-Wolter | Meike Schrader | Nicola Wolff | Thomas Rodt | Jörg Cramer

Traumatic brain injury (TBI) is a common presentation to the emergency department (ED). Assessment of TBI in the ED involves clinical examination and investigation using computed tomography (CT) to determine TBI severity and to identify what, if any treatment, is needed. Ultimately, most TBI patients (80%-90%) are categorized as mild; representing a cohort of patients who likely do not require CT scans, thus avoiding the associated radiation exposure.

Previously, the decision to conduct CT scans Klinikum Lüneburg relied on the clinical judgement of the treating physician, often resulting in many unnecessary CT scans and patient exposure to potentially carcinogenic doses of radiation. In order to assist in determination of the need for a CT scan, a new clinical pathway was introduced. The pathway includes the use of a blood TBI test as an objective measurable parameter to rule out the risk of intracranial lesions often seen on a CT scan. The TBI test measures two biomarkers, glial fibrillary acidic protein (GFAP) and ubiquitin C-terminal hydrolase L1 (UCH-L1) in peripheral blood and is indicated for all adult (18+) mild TBI patients with GCS 13-15 who are seen within 12 hours of trauma.

As a result of the new care pathway and test implementation there has been a 41% reduction of CT scans for mTBI patients in the ED. This in turn has positively impacted several aspects of care, including improving patient safety, enhancing clinical confidence and reducing resources across radiology and nursing, while ultimately saving costs.



**UNIVANTS**<sup>™</sup>  
OF HEALTHCARE EXCELLENCE