

NPi[®]-300 PUPILLOMETER

Der NPi[®] ist der **einzig**e genaue und objektive Messwert der Pupillenreaktivität in vielen gängigen Szenarien der Intensivmedizin, insbesondere beim Einsatz von Opioiden, neuromuskulären Blockern (NMBA) und Beruhigungsmitteln.



NEUROPTICS[®]

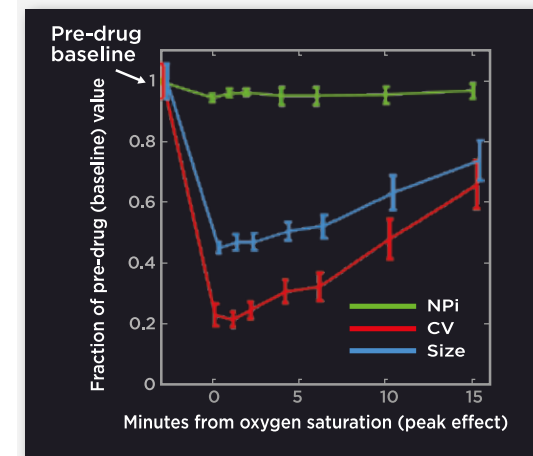


Figure 1**

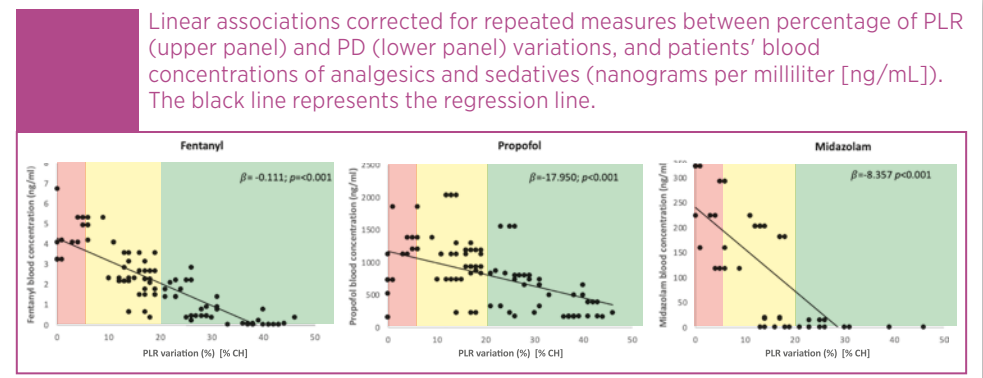


Figure 2**

Die Messung einzelner Pupillenmessparameter, einschließlich der prozentualen Veränderung der Pupillengröße (% CH) und Geschwindigkeit der Pupillenverengung (CV) wird erheblich durch die üblicherweise auf **Intensivstationen verabreichten Medikamente beeinflusst** und kann dazu führen, dass im Hinblick auf neurologische Veränderungen falsche Schlüsse gezogen werden.**

Fig. 1: Rollins MD, Feiner JR, Lee JM, Shah S, Larson M: Pupillary effects of high-dose opioid quantified with infrared pupillometry. Anesthesiology: The Journal of the American Society of Anesthesiologists, 121(5): 1037-1044, 2014.

Fig. 2: Martineau-Lessard C, Arbour C, Germélus NE, Williamson D, De Beaumont L, Bernard F: Pupil Light Reflex for the Assessment of Analgesia in Critically Ill Sedated Patients With Traumatic Brain Injury: A Preliminary Study. Journal of Neuroscience Nursing, 54(1): 6-12, 2021.

Veröffentlichte Ergebnisse zu Einflüssen der Medikation

Pupillometrie und NPi® (Der Neurologische Pupillenindex™)

** Die folgenden Auszüge beziehen sich auf die Auswirkungen der Medikation auf Pupillenmessungen, wie sie von den Verfassern in den jeweils genannten Veröffentlichungen ermittelt wurden:*

Authors	Clinical Study	Finding	Medication
Kim, T et al.	Neurological Pupil Index as an Indicator of Neurological Worsening in Large Hemispheric Strokes (Neurocritical Care, Feb 24, 2020)	...NPi values were not significantly influenced by sedative drugs, consistent with previous studies...	midazolam, remifentanyl, dexmedetomidine, propofol
Miroz, JP et al.	Neurological Pupil index for Early Prognostication After Venoarterial Extracorporeal Membrane Oxygenation (CHEST, Feb 7, 2020)	...No significant correlation was found between NPi values and the average daily cumulative dose of sedatives...	midazolam, propofol, fentanyl
Oddo, M et al.	Quantitative versus standard pupillary light reflex for early prognostication in comatose cardiac arrest patients: an international prospective multicenter double-blinded study (Intensive Care Med, Nov 26, 2018)	...In this setting, since it is not altered by sedatives/analgesics, NPi may confer a significant advantage over sPLR and provide accurate prognostic information, particularly in those patients with sedation or delayed awakening...	sedatives, analgesics
Larson, M et al.	Portable Infrared Pupillometry: A Review (Anesthesia-Analgesia, June 2015)	...PLR is generated by smooth muscle and is unaffected by neuromuscular blocking drugs...	NMBA
McKay, R et al.	Detection of opioid effect with pupillometry (Autonomic Neuroscience: Basic & Clinical, Aug 2021)	...Because our cases were titrated into the range of dangerous opioid toxicity and we observed no change in NPi, we conclude NPi changes cannot be attributed to opioid therapy...	remifentanyl
Achamallah, N et al.	Pupillary Light Reflex is Not Abolished by Epinephrine and Atropine Given During Advanced Cardiac Life Support in Patients Who Achieve Return of Spontaneous Circulation (J of Intensive Care Medicine, April 2021)	...Epinephrine and atropine do not abolish the PLR in patients who achieve ROSC after in-hospital cardiac arrest. Lack of pupillary response in the post-arrest patient should not be attributed to these drugs...	epinephrine, atropine



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