



Provided by the author(s) and University of Galway in accordance with publisher policies. Please cite the published version when available.

Title	Psychological stress in early life as a predisposing factor for the development of chronic pain: Clinical and preclinical evidence and neurobiological mechanisms
Author(s)	Burke, Nikita N.; Finn, David P.; McGuire, Brian E.; Roche, Michelle
Publication Date	2016-07-12
Publication Information	Burke, Nikita N., Finn, David P., McGuire, Brian E., & Roche, Michelle. (2017). Psychological stress in early life as a predisposing factor for the development of chronic pain: Clinical and preclinical evidence and neurobiological mechanisms. <i>Journal of Neuroscience Research</i> , 95(6), 1257-1270. doi: 10.1002/jnr.23802
Publisher	Wiley
Link to publisher's version	<a href="https://doi.org/10.1002/jnr.23802">https://doi.org/10.1002/jnr.23802</a>
Item record	<a href="http://hdl.handle.net/10379/15693">http://hdl.handle.net/10379/15693</a>
DOI	<a href="http://dx.doi.org/10.1002/jnr.23802">http://dx.doi.org/10.1002/jnr.23802</a>

Downloaded 2023-03-28T08:12:09Z

Some rights reserved. For more information, please see the item record link above.



**Table 1: Nociceptive behavior in animal models following postnatal early life stress**

<i>Model</i>	<i>Nociceptive behavior assessed</i>	<i>Test</i>	<i>Response, (species)</i>	<i>Reference</i>
<b>Maternal separation</b>	Thermal nociception	Hot plate	↓ latency (R)	(Stephan et al., 2002)
			↔ no change (R)	(Uhelski and Fuchs, 2010, Kalinichev et al., 2001, Bernardi et al., 1986)
			↑ latency (R)	(Weaver et al., 2007)
		Tail-flick	↑ latency (R)	(Coutinho et al., 2002)
			↔ no change (M, R)	(Kalinichev et al., 2001, Lariviere et al., 2006, D'Amato et al., 1999)
			↔ no change (R)	(Stephan et al., 2002)
			↑ latency (post-imipramine treatment) (R)	(Stephan et al., 2002)
	Mechanical nociception	von Frey test	↔ no change (R)	(Uhelski and Fuchs, 2010)
			↓ thresholds (M)	(Pierce et al., 2014)
	Visceral nociception	Colorectal distension	↑ no. of responses (M, R)	(Coutinho et al., 2002, Gosselin et al., 2010, Moloney et al., 2012, Wouters et al., 2012, Moloney et al., 2015)
			↑ no. of responses after stress (R)	(Coutinho et al., 2002, Wouters et al., 2012)
			↓ thresholds (R)	(O'Mahony et al., 2009, Tsang et al., 2012, Chung et al., 2007, Bian et al., 2010, Chen et al., 2015)
		Vaginal balloon distension	↑ response (M)	(Pierce et al., 2014)
	Inflammatory nociceptive behavior	Formalin	↑ response (R)	(Uhelski and Fuchs, 2010)
		Carrageenan (paw mechanical and thermal thresholds)	↔ no change (R)	(Lariviere et al., 2006)
↔ no change (R)			(Uhelski and Fuchs, 2010)	
Complete Freund's Adjuvant (base of tail)	↔ no change (R)	(Lariviere et al., 2006)		
Affective nociceptive behavior	Carrageenan + PEAP	↑ affective pain behavior (R)	(Uhelski and Fuchs, 2010)	
<b>Maternal Deprivation</b>	Mechanical nociception	von Frey test	↑ response (female only) (R)	(Burke et al., 2013)
	Thermal nociception	Hot plate test	↓ threshold (female only) (R)	

	Neuropathic pain behavior	von Frey post SNL	↑ response (R)	
		Acetone drop test post SNL	↑ response (R)	
<b>Maternal separation plus social isolation</b>	Mechanical nociception	von Frey test	↔ no change (M)	(Nishinaka et al., 2015)
	Thermal nociception	Hargreaves test	↔ no change (M)	
	Neuropathic pain behavior	von Frey post pSNL	↑ response (M)	
		Hargreaves test post pSNL	↑ response (M)	
<b>Neonatal isolation</b>	Thermal nociception	Hot plate	↓ latency (R)	(Imanaka et al., 2008)
			↔ no change (R)	(Imanaka et al., 2006)
<b>Neonatal limited bedding</b>	Mechanical nociception	Muscle mechanical pressure threshold	↓ latency (R)	(Green et al., 2011)
		Paw pressure test	↔ no change (R)	(Green et al., 2011)
		von Frey test	↓ threshold (male only) (R)	(Prusator and Greenwood-Van Meerveld, 2015)
	Inflammatory nociceptive behavior	PGE <sub>2</sub>	Prolonged inflammatory hyperalgesia (both cutaneous and muscle) (R)	(Green et al., 2011)
	Visceral hyperalgesia	Colorectal distension	↑ response (R)	(Prusator and Greenwood-Van Meerveld, 2015, Guo et al., 2015, Holschneider et al., 2016)

**Abbreviations. (M) mice, pSNL partial sciatic nerve ligation, PEAP place escape avoidance paradigm, PGE<sub>2</sub> prostaglandin E<sub>2</sub>, (R) rats, SNL Spinal nerve ligation**