

Algorithm

for the clinical examination and evaluation of meningeal symptoms in infants (older than 4 months)*

№	Actions	Options for evaluating the meningeal symptoms you need to asound	
1	Greet the mother and explain what you are going to do	Good afternoon, now I'm going to examine the signs of meningeal irritation in your child	
		Meningeal symptoms	
		positive	negative (norm)
2	Palpate a large fontanel in infant: on the upper part of the head in the area bounded by two parietal and frontal bones, palpate the large fontanel	The swelling, tension and pulsation of the large fontanel	Norm: a large fontanel at the level of skull bones, no tension and pulsation
3	To investigate the following symptoms, place the patient in supine position with extended lower extremities (legs)		
4	Check (assess) for nuchal rigidity: slightly pressing, fix the chest of the lying in the supine position child with your right (dominant) hand, at the same time place the left hand under the child's head and try to flex it forward - towards the chest	In a sick child, such attempt causes pain, is difficult, and sometimes even impossible, due to neck muscle tension (neck muscles rigidity)	Norm: flexion is free and painless
5	Check The Brudzinski neck sign: slightly pressing, fix the chest of the lying in the supine position child with your right (dominant) hand, at the same time place the left hand under the child's head and try to flex it forward - towards the chest	In a sick child forced flexion of the neck elicits a reflex ("protective") flexion of the hips and knee	Norm: no reflex flexion
6	Check the Brudzinski symphyseal sign: place the child in the supine position and press on his pubic symphysis with the border of your hand	In a sick child this action elicits a reflex flexion of the hips and knee	Norm: no reflex flexion
7	Check the Brudzinsky leg sign: place the child in the supine position and passively flex one his leg in the hip and knee	In a sick child this action elicits a reflex flexion of another leg	Norm: no reflex flexion
8	Check the Kernig's sign: place the child in the supine position and try to straighten previously flexed at the hip and knee at 90 degree angles leg. During procedure one your hand is on the patient's knee, the other supports the shin in the area of the tendon	In a sick child, such extension is painful and even not possible (the angle between the thigh and shin during extension is not more than 135 degrees.)	Norm: extension is free and painless
9	Check the Lesage's sign: lift the infant under the armpits (hold the child's head from the back with your index fingers)	In a sick child legs will be pulled up to the stomach (due to the involuntary flexion of the hips and knee) with a long fixation in a such position	Norm: during the test child's legs move freely (flexion and extension)
10	Make a conclusion, thank the mother and complete the examination		The child has no signs of meningeal irritation. Thank you.

Notes: * - the Brudzinski and Kernig's signs are examined after 4 months of life, since in healthy children up to 3-4 months of age they are a physiological feature, which is associated with physiological hypertonicity of the muscles that flex the upper and lower extremities.