

December while its minimum – in August. Morbidity on acute respiratory viral infections in spring was fluctuating from 12 till 31 promille, in summer – from 10 till 35,5 promille with the maximum at the end of July and minimum at the end of August; it was in autumn from 4 promille in October till 100 promille in the middle of September. The fluctuations were maximal in winter: from 5 promille in the first days of December and 185 promille at the end of December. Morbidity peak on acute respiratory diseases was observed at the end of December and minimum was mentioned in October.

Thus, one-digit dynamics of morbidity on some infectious diseases was absent in a Study Center "DESNA" during an account period from 1998 till 2009 but acute respiratory diseases and pneumonia high morbidity was highly-distinguished in winter. We recommend restricting visiting the children to the parents in the places of military service in winter as well as children coming back home especially under extreme epidemic situation like this year.

## TO THE QUESTION ABOUT MASTICATORY MOVEMENTS REGULATION

Authors: Salmasi Houman, Malekpour Mohammad Reza, Mohammadi Galekidjani

Mohammad Reza – the students of the 2<sup>nd</sup> course, Saadat Ahmad Sameer – the student of the 4<sup>th</sup> course, Jamalzade Javad – the student of the 3<sup>rd</sup> course  
dental department

Scientific supervisor: cand.med.sci., assistant Tkachenko E.V.

Normal Physiology Department

HSEIU "Ukrainian Medical Stomatological Academy"

CNS activates separate motor units of those muscles which are required for the definite movement performance (A.G.Hannam, B.J.Sessle, 1994, I.Klineberg, R.Jagger, 2004). All movements can be divided into conscious, reflexory and rhythmical. CNS different parts participate in masticatory movements formation. Facial motor cortex represents brain cortex highest focus taking part in conscious movements generation. When the patient is asked to protrude his tongue and to open his mouth (for example, for the offprint taking) programs set choice and activation (similar to the computer programs) appear in basal ganglia. These programs send the signals in primary motor cortex in part in its facial zone. These signals contain the information about motor units which are essential to be activated for the definite movement performance as well as about the sequence of their activation. Facial primary cortex contains brain cortex specific zones the fibers of which pass through pyramidal pathway with shifting to alpha-motoneurons (for instance, through interneurons). Fibers every exit zone from facial primary cortex activates separate simple movement, for example, tongue movement forward, tongue replacement or the jaw shift on the right or on the left, mouth angle rising, mandible lowering. One and the same movement can be performed at facial primary cortex different zones participation. Cerebellum co-ordinates constantly the movements through the entrance signals coming into the motor zones. Every movement correction can be realized through shorter pathways (comprising the neurons less amount) the big number of which is originated from brain stem.

Reflexory nervous ways encourage movements more exact performance and also can be used by higher motor centers for performing more complicated movements. Mandibular reflex and mouth opening reflex belong to them.

Rhythmic movements possess the features both of conscious and reflexory movements (J.P. Lund, 1991). Reflexory side of the rhythmic movement is in following: one must not think about the movement for its performance. For instance, we can masticate, breathe, swallow, walk without thinking about these processes but we are able to change these movements velocity and intensiveness at any instant consciously. Rhythmic movements performance and regulation are realized with the participation of especial spine and stem neurons sets. Every set is designated as a Rhythm Central Generator (RCG). Mastication RCG is located in a medullary-pontic reticular formation. Swallowing is not a rhythmical process but it is also controlled with RCG located in a medulla oblongata.

Very active feed-back reactions are realized in oral cavity. Sensory feed-back is made at oral cavity mechanoreceptors. For example, parodont receptors transmit the signals about teeth contact level and direction; mucosa receptors give the information about food contact with the mucosa. Muscular spindles signalize about the muscle length and its length changing velocity at the mouth closure. Tendineal organ of Golgi tells about the enforcement developing with the muscle while the temporal-mandibular joint mechanoreceptors transmit the signals about the joint position.