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dominal esophagus was measured from its entrance into the diaphragm to the base of gastric folds in fed infants. GERD was sonographically diagnosed and confirmed by a barium meal. The number of refluxes during a 10-min period was recorded.

Percentages were used for categorical data whereas continuous numerical data were expressed as mean  $\pm$  standard deviation. The results are given in their 95% confidence intervals.

**Results:** Neonates and infants with reflux had a significantly shorter abdominal esophagus than subjects without reflux: the mean difference in neonates, 4.65 mm; 1–6 months, 4.57 mm; 6–12 months, 3.61 mm.

**Conclusion:** Children with severe reflux had a shorter esophagus compared with those with mild and moderate reflux only in the neonate group. Therefore, thinking of GERD and carefully looking for its symptoms is necessary to avoid unnecessary utilization of healthcare resources in children with severe reflux.

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### The Evaluation of Lumbar Spinal Canal Diameters by MRI

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**Background/Objective:** Lumbar spinal stenosis is the common cause of low back pain. MRI is the best modality for diagnosis of spinal canal stenosis. The aim of this study is to evaluate lumbar spinal canal diameters and relationship with gender, age, stature, weight and job.

**Patients and Methods:** One-hundred men and 100 women in the age range of 25 to 40 years from East Azarbayjan who were referred to Sheikholrais MRI Center were selected. The diameters of the spinal canal were measured on the midsagittal and axial section on T2 weighted images by 0.3 T MRI Unite. The results of measurements were analyzed by SPSS software.

**Results:** The results showed that the least anteroposterior diameter was at the third lumbar vertebra but

the narrowest transverse diameter was at the first lumbar vertebra. The mean anteroposterior diameter of the lumbar spinal canal decreased from the first to the third lumbar vertebra, followed by an increase from the third to the fifth. From the first to the fifth lumbar vertebra, there was an increase in the mean transverse diameters. The mean transverse diameter in the middle part of the vertebra is longer than the lower part. A frank relation was seen between the gender of physical workers with lumbar spinal canal stenosis, although there was no relation between age, stature, and weight with lumbar spinal canal stenosis.

**Conclusion:** Considering the high incidence of lumbar canal stenosis and the relationship with heavy manual work, it is recommended that a plain radiography is taken before choosing heavy manual work and exercises. People whose canal is relatively narrow should be refused from heavy manual work and exercises.

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### Pneumothorax after Mechanical Ventilation in Neonates

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**Background/Objective:** Air leak syndromes are frequent in neonatal period. Mechanical ventilation with positive pressure is one of the most common causes of these syndromes. The aim of this study was to detect the incidence of pneumothorax in newborns under mechanical ventilation.

**Patients and Methods:** This descriptive cross sectional study was performed on 400 newborns admitted in the intensive care unit of 22 Bahman Hospital of Mashhad during 1383–1387. All patients were under mechanical ventilation. Sex, gestational age, birth weight, type of delivery, history of surfactant therapy and mortality rate after pneumothorax were recorded in questionnaires. Statistical analysis was done on the obtained data using SPSS software.

**Results:** Among 400 patients under ventilation, 102 neonates developed pneumothorax (26%). 55% of these cases were boys and 45% were girls. Pneumothorax was on the right side in 66.7%, on the left side in 12.8% and bilateral in 19.6%. In newborns with