

impaired hearing, are morbid conditions very frequently associated with this habit.

The changes produced by mouth-breathing greatly mar both the symmetry of the face and the expression of the features. The following characteristics are very much "in evidence": Drooping lower jaw, open mouth, upper lip retracted, projecting irregular incisor teeth, with cavities due to caries; poorly developed, inactive nostrils, lustreless eyes, partial ptosis, obliteration of the folds that give expression to the face, thus producing the more or less stupid, vacant, idiotic appearance so commonly seen during childhood and adolescence.

Were the pernicious effects of mouth-breathing confined to physical deformities, we would be fully warranted in seeking its prevention, but the evils are not thus limited. This habit can produce disease as well as deformity. The functions of the mouth are entirely different from those of the respiratory tract. The pint or two of saliva is all required for mastication and digestion. When this fluid is exhausted by the air, as it passes through the mouth, both of these processes are injuriously affected and the nutrition of the body impaired. This malnutrition gives rise to anemia, lassitude, flabby tissues, mental irritability and depression. The red corpuscles may fall from 5,000,000 to 1,500,000, and the hemoglobin be reduced fifty per cent. The resistance to pathogenic micro-organisms is very much lowered, hence the greater liability, in mouth-breathers, to contagious and infectious diseases, and the higher mortality from these.

The extremes in temperature between indoor and outdoor air are very imperfectly modified in mouth-breathing. The large volume of cold air that comes in direct contact with the mucous membrane of the mouth, pharynx, larynx, trachea, bronchial tubes and air-cells produces more or less shock. This affects the vasomotor system, in first producing pallor of the tissue, and secondly, hyperemia through the reaction. These sudden changes soon produce morbid conditions in the exposed mucous membrane, and in the serous and glandular structures. The mucous membrane becomes hypertrophied, and the secretions vitiated in character.

The morbid changes that mouth-breathing produces in the pharyngeal end of the eustachian tube interfere very seriously with the ventilation of the middle ear tract, hence the very intimate association found to exist between mouth-breathing and the suppurative processes, so frequently found in the tympanic cavity and in the mastoid cells.

The tonsils are peculiarly exposed to infection in mouth-breathing, hence the great frequency with which the lymphatic glands in the neck become involved.