

# Artificial Neural Networks for Diagnosis of Kidney Stones Disease

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**Abstract:** *The foundation of medical care for children with renal stone disease is the assessment of metabolic risk factors, which aims to stop the growth of preexisting calculi and subsequent stone occurrences. In this retrospective analysis, 90 children with kidney stone disease who had been sent to our institution and had undergone clinical testing in accordance with a defined procedure had their metabolic risk factors, clinical histories, and family histories assessed. Our pediatric patients were 10.7 years old on average, with a male to female ratio of 1.14:1.0. In 84.4% of the instances, biochemical abnormalities were discovered. Of the patients, 52.2% (n = 47) had only one urine metabolic risk factor, whereas the remaining 31.1% (n = 28) had several risk factors. Adrenal hypercalciuria. The aim of this work is to compare the performance of all three neural networks on the basis of its accuracy, time taken to build model, and training data set size. We will use Learning vector quantization (LVQ), two layers feed forward perceptron trained with back propagation training algorithm and Radial basis function (RBF) networks for diagnosis of kidney stone disease. In this work we used Waikato Environment for Knowledge Analysis (WEKA) version 3.7.5 as simulation tool which is an open source tool.*

**Keywords:** Kids. genealogy inside the family. hypercalciuria. Low urine volume. fat-related risk factors. The urolithiasis