Title: Pendred Syndrome/Nonsyndromic Enlarged Vestibular Aqueduct *GeneReview* – Perchlorate Discharge Test
Author: Smith RJH
Updated: October 2017
Note: The following information is provided by the author and has not been reviewed by *GeneReviews* staff.

Pendred Syndrome: Perchlorate Discharge Test

With normal organification of iodide the administration of perchlorate does not cause a significant change in the iodide content of the thyroid. However, with Pendred syndrome, organification is impaired and the administration of perchlorate results in a decrease in thyroid iodide content. The test is performed by quantifying thyroid uptake two hours after administration of radiolabeled iodine. Potassium perchlorate is then administered and an hour later thyroid uptake is again quantified. Normally the uptake values remain relatively unchanged; however, in persons with Pendred syndrome radiolabeled iodine in the thyroid is decreased.

The perchlorate test is abnormal in other thyroid disorders, including Hashimoto's thyroiditis, total iodide organification deficiency, and I-131-treated thyrotoxicosis.