

CHERUBISM

Cherubism is a rare condition of the mandible and maxilla. It causes round cheeks and jaws with slight upward turning of the eyes giving a facial appearance reminiscent of the angelic cherubs. The basis for the fullness of cheeks and jaws is a non-neoplastic fibrous dysplasia within the maxilla and mandible. Both ends of the spectrum, mild clinically unrecognized cases, and severe cases with extensive bone loss are seen. In some severe cases, the marked deformation results in chewing, swallowing and speech difficulties, and in rare cases, severe orbital involvement leading to diplopia may occur.

GENETICS

Cherubism is an autosomal dominant condition caused by mutations in the *SH3BP2* gene on chromosome 4 (4p16.3). Eleven missense mutations in exon 9, and one mutation in exon 4 causing Cherubism have been reported in the *SH3BP2* gene.

Cherubism is present when an individual has one copy of the defective *SH3BP2* gene. Affected individuals have a 50% chance of transmitting the disorder to each child. There is a 50% chance that the affected individual's offspring will not be affected with Cherubism.

Patients with Cherubism may show variability in clinical features due to penetrance and variable expressivity. In males the penetrance is close to 100% but in females only 50-75%.

TEST METHODS

- Complete sequencing of the coding region and flanking exon/intron boundaries of the *SH3BP2* gene to identify mutations.

WHO SHOULD BE TESTED?

- Individuals clinically suspected of being affected with Cherubism
- Relatives of probands with identified *SH3BP2* mutations

TEST SENSITIVITY

- Mutations in exon 9 of the *SH3BP2* will be detected in 80% patients with Cherubism.

POTENTIAL OUTCOMES & INTERPRETATION OF TEST RESULTS

<i>SH3BP2</i> Gene Mutation	Explanation
None detected	This result is unable to confirm a diagnosis of Cherubism
Mutation detected	This result confirms a diagnosis of Cherubism

For More Information

Online Mendelian Inheritance in Man <http://www.ncbi.nlm.nih.gov/omim/> Item # 118400

GeneReviews online clinical information resource <http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=gene&part=cherubism>

AboutFace International <http://www.aboutfaceinternational.org/>

To locate a genetics centre near you, please visit the Canadian Association of Genetic Counsellors website at www.cagc-accg.ca or the National Society of Genetic Counsellors website at www.nsgc.org



1. Current molecular testing may not detect all possible mutations for this disease. A negative test does not rule out the possibility that the individual carries a rare *SH3BP2* mutation not detected by the assay.

2. The clinical course or severity of symptoms cannot be predicted by molecular analysis.

3. Test results should be interpreted in the context of clinical findings, family history and other laboratory data.

4. This test was developed and its performance characteristics validated by the Genome Diagnostics Laboratory at the Hospital for Sick Children. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes.