



GENETIC TESTING FOR FAMILIAL ADENOMATOUS POLYPOSIS AND MYH-ASSOCIATED POLYPOSIS HS-160



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Genetic Testing for Familial Adenomatous Polyposis and MYH-Associated Polyposis

Policy Number: HS-160

Original Effective Date: 3/18/2010

Revised Date(s): 3/18/2011

DISCLAIMER

The Clinical Coverage Guideline is intended to supplement certain standard WellCare benefit plans. The terms of a member's particular Benefit Plan, Evidence of Coverage, Certificate of Coverage, etc., may differ significantly from this Coverage Position. For example, a member's benefit plan may contain specific exclusions related to the topic addressed in this Clinical Coverage Guideline. When a conflict exists between the two documents, the Member's Benefit Plan always supersedes the information contained in the Clinical Coverage Guideline. Additionally, Clinical Coverage Guidelines relate exclusively to the administration of health benefit plans and are NOT recommendations for treatment, nor should they be used as treatment guidelines. The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

APPLICATION STATEMENT

The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

BACKGROUND

Familial Adenomatous Polyposis (FAP) and Attenuated Familial Adenomatous Polyposis (AFAP)

FAP and AFAP are inherited in an autosomal dominant manner. Approximately 75–80% of individuals with these conditions have an affected parent. Offspring of an affected individual have a 50% risk of inheriting the altered APC gene. FAP is characterized by a young onset (age 12–15 years) and the development of multiple (at least 100) adenomatous polyps in the colon and rectum. Additional findings include congenital hypertrophy of retinal pigment epithelium (CHRPE), osteomas, supernumerary teeth, odontomas, desmoids, epidermoid cysts, duodenal and other small bowel adenomas, gastric fundic gland polyps. There is also increased risk of medulloblastoma, papillary carcinoma of the thyroid, hepatoblastoma, pancreatic and gastric cancers. Considered almost 100% penetrant, adenomas develop in approximately half of all patients with FAP by age 15, and in 95% by age 35. Without intervention, most individuals with FAP will develop colon or rectal cancer by the fourth decade of life. Thus, screening and intervention for at-risk persons is critical and typically begins at puberty.

AFAP, an attenuated variety of FAP, is characterized by a significant risk for colon cancer, but fewer colonic polyps than classic FAP. An average of 30 polyps is seen in AFAP. The polyps tend to be found more proximally in the colon than in classic FAP. The average age of colon cancer diagnosis in individuals with AFAP is age 50–55 years, approximately 10–15 years later than in those with classic FAP, but earlier than that seen in individuals with sporadically occurring colon cancer. Mutations of the APC gene are also associated with AFAP. APC mutation testing is positive in approximately 60% of cases.

Most cases of FAP and AFAP are associated with mutations in the APC gene, a tumor suppressor or gatekeeper gene that controls cell proliferation. More than 300 different disease-associated mutations of the APC gene have been identified. Most are insertions, deletions, and nonsense mutations that lead to frame shifts or premature stop codons, resulting in truncation of the APC gene product. The penetrance of FAP in terms of colonic adenomatous polyposis and colon cancer is virtually 100% in untreated individuals. APC-associated polyposis conditions have historically accounted for an average of 0.5% of all colorectal cancers; however, this figure is declining as more at-risk family members undergo successful treatment following early polyp detection and prophylactic colectomy (Burt and Solomon, 2005). APC testing does not change clinical management of FAP or AFAP affected individuals but is recommended for familial risk assessment (NCCN, 2008).

MYH-Associated Polyposis (MAP)

MYH-Associated Polyposis (MAP), also known as MUTYH-associated polyposis, is a recently described syndrome that is also characterized by adenomatous polyps. It is an autosomal-recessive syndrome. It is estimated that MAP is responsible for 1.4% of all adenomatous polyposis and 20% of adenomatous polyposis without mutation of the APC gene (Lefevre, et al., 2006). MAP is caused by biallelic mutations in the MutY human homolog (MYH) gene. Generally, most individuals with MAP will have less than 100 polyps (approximately 15–100 polyps). The median age of presentation is in the mid-forties to late fifties. The NCCN notes that screening and surveillance for these individuals are based on limited retrospective data, with genetic counseling and testing recommended for siblings of affected patients, as well as for patients with adenomatous polyposis (more than 10 adenomas or more than 15 cumulative adenomas in 10 years) whose family is consistent with recessive inheritance (NCCN, 2008). It is also noted that testing for APC mutation usually precedes testing for MYH mutations, except in families where only siblings are affected, which suggests recessive inheritance.

POSITION STATEMENT

Genetic testing for familial adenomatous polyposis (FAP) or attenuated familial adenomatous polyposis (AFAP) is **considered medically necessary if ANY the following criteria are met:**



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- Members with greater than 20 adenomatous colonic polyps (211.3) during their lifetime; **OR**,
- Member has a first or second degree relative diagnosed with FAP or AFAP (V18.51); **OR**,
- Member has a first or second degree relative with a known FAP or AFAP gene mutation (APC gene).

Genetic testing for MYH-associated polyposis (MAP) is considered medically necessary if EITHER of the following criteria are met:

- Member with greater than 10 adenomatous colonic polyps (211.3) (or greater than 15 cumulative adenomas in 10 years V12.72); **AND**,
 - Have a recessive inheritance (family history positive only for siblings); **OR**,
 - Member has a negative result on a APC mutation test (FAP or AFAP gene mutation test)

OR;

- Member is an asymptomatic sibling of an individual with known MYH-associated polyposis (V18.51).

CODING

CPT®* Codes

Familial Adenomatous Polyposis (FAP) and Attenuated Familial Adenomatous Polyposis (AFAP)

- 83890** Molecular diagnostics; molecular isolation or extraction, each nucleic acid type (i.e., DNA or RNA)
83892 x 2 Molecular diagnostics; enzymatic digestion, each enzyme treatment
83894 Molecular diagnostics; separation by gel electrophoresis (eg, agarose, polyacrylamide), each nucleic acid preparation.
83896 x 29 Molecular diagnostics; nucleic acid probe, each
83897 Molecular diagnostics; nucleic acid transfer (eg, Southern, Northern), each nucleic acid preparation
88384 Array-based evaluation of multiple molecular probes, 11 through 50 probes
88385 Array-based evaluation of multiple molecular probes, 51 through 250 probes
88386 Array-based evaluation of multiple molecular probes, 251 through 500 probes

MYH-Associated Polyposis (MAP)

- 83890** Molecular diagnostics; molecular isolation or extraction, each nucleic acid type (i.e., DNA or RNA)
83892 x 2 Molecular diagnostics; enzymatic digestion, each enzyme treatment
83894 Molecular diagnostics; separation by gel electrophoresis (eg, agarose, polyacrylamide), each nucleic acid preparation.
83896 x 9 Molecular diagnostics; nucleic acid probe, each
83897 Molecular diagnostics; nucleic acid transfer (eg, Southern, Northern), each nucleic acid preparation
88384 Array-based evaluation of multiple molecular probes, 11 through 50 probes
88385 Array-based evaluation of multiple molecular probes, 51 through 250 probes
88386 Array-based evaluation of multiple molecular probes, 251 through 500 probes

ICD-9-CM Procedure Codes - No Applicable Codes

HCPCS®* Level II Codes

- S3833*** Complete APC gene sequence analysis for susceptibility to familial adenomatous polyposis (FAP) and attenuated FAP

S3834* Single-mutation analysis (in individuals with a known APC mutation in the family) for susceptibility to familial adenomatous polyposis (FAP) and attenuated FAP
***S- Codes are NON COVERED FOR MEDICARE – Refer to HCPCS Level II Temporary National Codes**

Covered ICD-9-CM Diagnosis Codes

- 211.3** Colonic Polyps
- V12.72** Personal history of Colonic Polyps
- V18.51** Family history of Colonic Polyps

*Current Procedural Terminology (CPT) 2010 American Medical Association: Chicago, IL.®©

REFERENCES

Peer Reviewed

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Government Agencies, Professional and Medical Organizations

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HISTORY AND REVISIONS

Date	Action
12/1/2011	• New template design approved by MPC.
3/18/2011	• Approved by MPC.