



Complete Summary

GUIDELINE TITLE

American Gastroenterological Association medical position statement: impact of dietary fiber on colon cancer occurrence.

BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association medical position statement: impact of dietary fiber on colon cancer occurrence. American College of Gastroenterology. Gastroenterology 2000 Jun; 118(6):1233-4. [1 reference]

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SCOPE

DISEASE/CONDITION(S)

Colorectal cancer (CRC)

GUIDELINE CATEGORY

Prevention
Risk Assessment

CLINICAL SPECIALTY

Family Practice
Gastroenterology
Internal Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations on the impact of dietary fiber on colon cancer occurrence

TARGET POPULATION

United States adult population

INTERVENTIONS AND PRACTICES CONSIDERED

Grams of daily dietary fiber intake

MAJOR OUTCOMES CONSIDERED

- Daily dietary fiber intake
- Colon cancer occurrence
- Adenoma occurrence or recurrence

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

All human studies concerning colorectal cancer (CRC) and its precursor, adenoma, and fiber, grains, cereals, vegetables, or fruits published in the English language from 1970 through 1999 were considered. These studies were found in the MEDLINE and CANCERLIT databases, in several extensive reviews, and in references in the identified studies.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This document was approved by the Clinical Practice and Practice Economics Committee on September 25, 1999, and by the American Gastroenterological Association Governing Board on November 15, 1999.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Currently available evidence from epidemiological, animal, and intervention studies does not unequivocally support the protective role of fiber against development of colorectal cancer (CRC). However, when the whole body of evidence from these studies is analyzed critically, the overall conclusion supports an inverse association between dietary fiber intake and CRC risk. The magnitude of CRC risk reduction and threshold level above which dietary fiber is associated with a significant degree of CRC risk reduction need to be more clearly defined. The duration of fiber supplementation, as well as which specific target groups would benefit most from fiber supplementation, are not well established.

It is difficult to advise patients with absolute confidence given the insufficient scientific evidence currently available. Nevertheless, the recommendations suggested here represent reasonable conclusions based on currently available data. Most positive epidemiological and intervention studies have demonstrated the protective effects of total fiber intake 3-3.5 times higher than the mean dietary fiber intake of the United States adult population (11.1 g/day). Therefore,

it is reasonable to recommend total fiber intake of at least 30-35 g/day. Dietary fiber should be from all sources of fiber, including 5-7 servings of vegetables and fruits per day and generous portions of whole-grain cereals.

Epidemiological studies suggest that the delay between exposure of migrants to urban-industrial diets and emergence of CRC may be 10-20 years. It follows that appropriate diets may have their full impact in prevention of CRC only decades after they are widely adopted. These delays need to be taken into account when setting realistic targets for CRC prevention with dietary fiber. Therefore, because CRC is strongly age related and its incidence rates increase markedly with age from around the sixth decade of life, fiber intervention should begin at least 10-20 years before the peak age for CRC incidence.

Because of uncertainty about the type and source of fiber that are most effective in the prevention of CRC and the undetermined potential interactions between fiber and other anticarcinogens present in fiber-rich foods, it is prudent to recommend a high intake of dietary fiber from all sources, including vegetables, fruits, cereals, grains, and legumes. Because the purported protective effect of dietary fiber against CRC is demonstrated better by fiber-rich foods (e.g., vegetables, fruits, grains, cereals) than by dietary fiber alone, it is also reasonable to recommend consumption of 5-7 servings of vegetables and fruits per day and generous portions of whole-grain cereals.

Whether increasing dietary intake of fiber will reduce the risk of CRC in the general population can only be deduced from epidemiological and intervention studies using high-risk individuals and intermediate biomarkers. Intervention studies using fiber supplementation have focused on individuals at high risk of developing CRC or adenomas, including those with previous adenomas, CRC, or familial adenomatous polyposis (FAP) and gene carriers of familial adenomatous polyposis or hereditary nonpolyposis CRC. Therefore, it seems logical that individuals at high risk of developing CRC and adenomas will benefit the most from fiber intervention. The Second National Health and Nutrition Examination Survey (NHANES II) study identified a marked racial effect, with blacks having lower dietary fiber intakes than whites in both sexes and across all age groups. Unlike the white population in the United States, the black United States population has not had any substantial improvement in CRC incidence and mortality. Dietary and lifestyle modifications, including a high-fiber diet, might be particularly beneficial in this group.

Results of epidemiological studies tend to be in agreement about the risk of CRC and its relationship with overall diet and lifestyle. However, when the data are examined closely and correlations between CRC and individual dietary and lifestyle components are sought, the relationship tends to be less convincing. These observations suggest that undetermined and undefined interactions among dietary components and lifestyle factors play a more important role in colorectal carcinogenesis than individual dietary and other lifestyle factors. Therefore, it is important that the recommendations for prevention of CRC include not only the diet high in fiber, vegetables, fruits, and cereals but also include modifications of other dietary and lifestyle factors considered to be associated with an increased risk of CRC. These include decreasing consumption of fat (total, animal, and saturated fat) and red meat, avoiding obesity, consuming minimal to moderate amounts of alcohol, quitting smoking, and engaging in daily physical activity.

Increasing total fiber intake to >30-35 g/day from the standard 10-g North American diet can not only potentially protect against CRC but also provide other health benefits, including decreased cholesterol levels, improved insulin resistance, reduced blood pressure, and prevention of coronary artery disease.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The technical review emphasizes results from all the published prospective (cohort) epidemiological studies and randomized intervention studies in humans. Seminal studies of a descriptive and case-control epidemiological nature as well as previously published meta-analyses or pooled (combined) analyses of case-control studies are reviewed.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Increasing total fiber intake to >30-35 g/day from the standard 10-g North American diet can not only potentially protect against colorectal cancer (CRC) but also provide other health benefits, including decreased cholesterol levels, improved insulin resistance, reduced blood pressure, and prevention of coronary artery disease.

Subgroups Most Likely to Benefit:

It seems logical that individuals at high risk of developing colorectal cancer (CRC) and adenomas, including those with previous adenomas, colorectal cancer, or familial adenomatous polyposis (FAP) and gene carriers of familial adenomatous polyposis or hereditary nonpolyposis colorectal cancer will benefit the most from fiber intervention. The Second National Health and Nutrition Examination Survey (NHANES II) study identified a marked racial effect, with blacks having lower dietary fiber intakes than whites in both sexes and across all age groups. Unlike the white population in the United States, the black United States population has not had any substantial improvement in colorectal cancer incidence and mortality. Dietary and lifestyle modifications, including a high-fiber diet, might be particularly beneficial in this group.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association medical position statement: impact of dietary fiber on colon cancer occurrence. American College of Gastroenterology. Gastroenterology 2000 Jun; 118(6): 1233-4. [1 reference]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Nov 15 (reviewed 2001)

GUIDELINE DEVELOPER(S)

American Gastroenterological Association - Medical Specialty Society

SOURCE(S) OF FUNDING

American Gastroenterological Association

GUIDELINE COMMITTEE

American Gastroenterological Association Clinical Practice and Practice Economics Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

American College of Gastroenterology - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

According to the guideline developer, the Clinical Practice Committee meets 3 times a year to review all American Gastroenterological Association guidelines. This review includes new literature searches of electronic databases followed by expert committee review of new evidence that has emerged since the original publication date.

This guideline has been reviewed by the developer and is still considered to be current as of Dec 2001.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Gastroenterological Association \(AGA\) Gastroenterology journal Web site](#).

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Kim YI. AGA technical review: impact of dietary fiber on colon cancer occurrence. *Gastroenterology*. 2000 Jun;118(6):1235-57. [131 references].

Electronic copies: Available from the [American Gastroenterological Association \(AGA\) Gastroenterology journal Web site](#).

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on June 5, 2002. The information was verified by the guideline developer on July 12, 2002.

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