

Online Quiz

Test Your Knowledge: Ten Questions about Colorectal Cancer Screening

This quiz is related to an Essay (DOI: 10.1371/journal.pmed.0030036) in the January issue

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Question 1. In which part of the large bowel do most colorectal cancers occur?

- Ascending colon and rectum
- Transverse colon and rectum
- Descending colon and rectum
- Sigmoid colon and rectum

Question 2. Which of the following is true about the global incidence of colorectal cancer?

- It is the third most common malignancy, after lung cancer and breast cancer
- It is the second most common malignancy, after lung cancer
- It is the most common malignancy

Question 3. Which of the following is true about gender differences in rectal cancer risk?

- Rectal cancer is more common in women than men
- Rectal cancer is more common in men than women
- Rectal cancer affects roughly equal proportions of men and women

Question 4. Which one of the following is probably the most important environmental risk factor for colorectal cancer?

- Diet
- Smoking
- Carcinogens present in drinking water

Question 5. What is the lifetime risk of colorectal cancer?

- 1%
- 5%
- 10%
- 15%

Question 6. What is the overall five-year survival (i.e., the rate of survival at five years for all stages combined) after colorectal cancer?

- 10%
- 30%
- 50%
- 70%

Question 7. Which of the following is true about colorectal cancer incidence and mortality in the United Kingdom and the United States?

- Both have fallen in recent years
- Both have risen in recent years
- Both have remained unchanged in recent years

Question 8. Which of the following best reflects the clinical evidence on endoscopic screening (sigmoidoscopy and colonoscopy) for colorectal cancer?

- Such screening has been proven to reduce mortality from colorectal cancer in several large randomized controlled trials (RCTs)
- There is no clinical evidence that endoscopic screening is valuable
- There is evidence from case-control studies that such screening reduces colorectal cancer incidence, and the results of several large RCTs are awaited

Question 9. By how much does screening for colorectal cancer with fecal occult blood testing reduce mortality from colorectal cancer?

- 5%–15%
- 15%–33%
- 33%–50%

Question 10. Which of the following best reflects the evidence on the possible harms of using colonoscopy for screening for colorectal cancer?

- Although there are theoretical risks of complications, in large cohort studies there were no complications in anyone undergoing colonoscopy
- There is a high risk of major complications, such as serious bleeding
- Colonoscopic screening is associated with rare but serious complications

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Answer 1. Sigmoid colon and rectum

Nearly two-thirds of colorectal cancers occur in the sigmoid colon or rectum [1].

Reference

1. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.

Answer 2. It is the third most common malignancy, after lung cancer and breast cancer

Lung cancer is the most common malignancy, accounting for 1.2 million cases each year, followed by breast cancer (just over 1 million cases per year) and then colorectal cancer (940,000 cases per year) [1].

Reference

1. Stewart BW, Kleihues P, editors (2003) World cancer report. Geneva: World Health Organization. 352 p.

Answer 3. Rectal cancer is more common in men than women

Rectal cancer is more common in men [1–2].

References

1. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.
2. DeCosse JJ, Ngoi SS, Jacobson JS, Cennerazzo WJ (1993) Gender and colorectal cancer. *Eur J Cancer Prev* 2: 105–115.

Answer 4. Diet

The most important environmental risk factor is probably diet [1,2].

References

1. Kune G, editor (1996) Causes and control of colorectal cancer: A model for cancer prevention. Boston: Kluwer Academic Publishers. 404 p.
2. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.

Answer 5. 5%

The lifetime risk of colorectal cancer is 5% [1].

Reference

1. Hoff G, Bretthauer M (2006) The science and politics of colorectal cancer screening. *PLoS Med* 3: e36. DOI: 10.1371/journal.pmed.0030036

Answer 6. 50%

Five-year survival is only about 50% [1], and has not changed much over the past 40 years [2].

References

1. Hoff G, Bretthauer M (2006) The science and politics of colorectal cancer screening. *PLoS Med* 3: e36. DOI: 10.1371/journal.pmed.0030036
2. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.

Answer 7. Both have fallen in recent years

Recently, incidence and mortality of colorectal cancer have fallen in the UK and the US, although the reasons for this fall are unclear [1].

Reference

1. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.

Answer 8. There is evidence from case-control studies that such screening reduces colorectal cancer incidence, and the results of several large RCTs are awaited

A systematic review found no published RCTs comparing colonoscopy with no screening [1]. The review found only one small RCT [2] comparing flexible sigmoidoscopy versus no screening—the trial found that sigmoidoscopy (followed by colonoscopy if positive) reduced colorectal cancer rates but not colorectal cancer mortality (it may have been underpowered to detect a clinically important difference in colorectal cancer mortality [3]).

The results of four ongoing RCTs of flexible sigmoidoscopy are expected to be reported in the next several years [4–7]. There is evidence from case-control studies to suggest that endoscopic screening reduces colorectal cancer incidence, although these studies are prone to overestimate the effectiveness of screening tests when compared with RCTs [8,9].

References

1. Walsh JM, Terdiman JP (2003) Colorectal cancer screening: Scientific review. *JAMA* 289: 1288–1296.
2. Thiis-Evensen E, Hoff GS, Sauar J, Langmark F, Majak BM, et al. (1999) Population-based surveillance by colonoscopy: Effect on the incidence of colorectal cancer. Telemark Polyp Study I. *Scand J Gastroenterol* 34: 414–420.
3. Lewis C (2005) Colorectal cancer screening. *Clin Evid* 14: 1–2.
4. UK Flexible Sigmoidoscopy Screening Trial Investigators (2002) Single flexible sigmoidoscopy screening to prevent colorectal cancer: Baseline findings of a UK multicentre randomised trial. *Lancet* 359: 1291–1300.
5. Segnan N, Senore C, Andreoni B, Aste H, Bonelli L, et al. (2002) Baseline findings of the Italian multicenter randomized controlled trial of “once-only sigmoidoscopy”—SCORE. *N Natl Cancer Inst* 94: 1763–1772.
6. Gondal G, Grotmol T, Hofstad B, Bretthauer M, Eide TJ, et al. (2003) The Norwegian Colorectal Cancer Prevention (NORCCAP) screening study: Baseline findings and implementations for clinical work-up in age groups 50–64 years. *Scand J Gastroenterol* 38: 635–642.
7. Palitz AM, Selby JV, Grossman S, Finkler LJ, Bevc M, et al. (1997) The colon cancer prevention program (PLCO): Rationale, implementation and preliminary results. *HMO Pract* 111: 5–12.
8. Mandel JS (2003) Sigmoidoscopy screening probably works, but how well is still unknown. *J Natl Cancer Inst* 95: 571–573.
9. Hoff G, Bretthauer M (2006) The science and politics of colorectal cancer screening. *PLoS Med* 3: e36. DOI: 10.1371/journal.pmed.0030036

Answer 9. 15%–33%

A systematic review of three RCTs found that screening with fecal occult blood testing reduced colorectal cancer mortality by 15%–33% [1].

Reference

1. Walsh JM, Terdiman JP (2003) Colorectal cancer screening: Scientific review. *JAMA* 289: 1288–1296.

Answer 10. Colonoscopic screening is associated with rare but serious complications

One systematic review [1] identified two cohort studies that examined the complications from colonoscopy for colorectal cancer screening. In the first study (3,121 people receiving colonoscopy), six people experienced major bleeding and four people experienced other serious complications (such as stroke and myocardial infarction). In the second study (1,994 people undergoing colonoscopy), three people experienced serious bleeding.

Reference

1. Walsh JM, Terdiman JP (2003) Colorectal cancer screening: Scientific review. *JAMA* 289: 1288–1296.

References

- DeCosse JJ, Ngoi SS, Jacobson JS, Cennerazzo WJ (1993) Gender and colorectal cancer. *Eur J Cancer Prev* 2: 105–115.
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