

# Non-Communicable Diseases Watch

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衛生防護中心  
Centre for Health Protection



衛生署  
Department of Health

## Taking Care of Your Bowels – Colorectal Cancer Prevention and Screening

### Key Facts

- ※ Colorectal cancer refers to malignant neoplasm affecting the last portion of the digestive system that includes the colon, rectum and anus. It is one of the most common cancers, both globally and locally.
- ※ In 2011, colorectal cancer has become the most common cancer in Hong Kong with 4 450 new cases.
- ※ Colorectal cancer can be prevented through adoption of a healthy lifestyle and appropriate screening to detect and remove pre-cancerous polyps. When detected early and treated according to best practices, colorectal cancer has a high cure rate.

### Colorectal Cancer Prevention Tips

#### *Adopting a healthy lifestyle*

- ※ Have a balanced diet, including eating sufficient amounts of high-fibre foods every day. Limit consumption of red meat. Avoid processed meats, smoked or preserved foods.
- ※ Be physically active and avoid sedentary lifestyle.
- ※ Maintain a healthy body weight and waist measurement.
- ※ Do not smoke.
- ※ Avoid alcohol consumption.

#### *Screening for colorectal cancer as recommended*

- ※ Men and women aged 50 to 75 should discuss with their doctor and consider screening for colorectal cancer.
- ※ High risk individuals should start colorectal cancer screening at an earlier age and have screening repeated at shorter time intervals as recommended by their doctor.

#### *Recognising the early warning signs and symptoms of colorectal cancer and consult a family doctor if indicated*

- ※ Change in bowel habits (diarrhoea or constipation) with unknown reason that lasts for more than 2 weeks.
- ※ Blood (either bright red or very dark) or large amount of mucus in stool.
- ※ Persistent urge after passing stool.
- ※ Abdominal discomfort, such as persistent pain, bloating, fullness, or cramps.
- ※ Weight loss and tiredness for unknown reasons.

## Taking Care of Your Bowels – Colorectal Cancer Prevention and Screening

Colorectal cancer refers to malignant neoplasm affecting the last portion of the digestive system that includes the colon, rectum and anus. It is one of the most common cancers and an important

cause of cancer-related deaths. In 2012, there were over 1.36 million new cases of colorectal cancer and about 694 000 people died of the disease globally (Table 1).<sup>1</sup>

**Table 1: Global burden of colorectal cancer, 2012**

	Male	Female	Overall
<b>Number of new cases:</b>	746 000	614 000	1 361 000
<b>Age-standardised incidence rate*:</b>	20.6	14.3	17.2
<b>Number of deaths:</b>	374 000	320 000	694 000
<b>Age-standardised death rate*:</b>	10.0	6.9	8.3
<b>Ranking</b> (defined by total number of new cases):	3	2	3

Note: \*Per 100 000 world standard population.

Source: Globocan 2012, International Agency for Research on Cancer.

### Development and Risk Factors of Colorectal Cancer

Colorectal cancer usually begins as a polyp, which is a small growth of tissue in the mucosal lining of the intestinal wall. While most colorectal polyps are benign, some may develop into cancer over time. The development of a polyp into cancer may take more than 10 years.<sup>2, 3</sup> Various factors influence how high the risk is for someone to develop colorectal cancer (Box 1).

Apart from advancing age, male sex, having a family history of or genetic susceptibility to colorectal cancer, a number of potentially modifiable risk factors are also associated with an increased risk of colorectal cancer. These include inflammatory bowel diseases, obesity, high intake of red or processed meats, smoking, alcohol consumption, physical inactivity and type 2 diabetes.<sup>2, 4, 5</sup>

#### Box 1: Major risk factors for colorectal cancer

**Age 50 or over** – While anyone can get colorectal cancer, it is most common among people age 50 or over. In developed countries, the median age at diagnosis is about 70 years.<sup>2, 6</sup>

**Male sex** – Compared with female, male had about twice the risk of colorectal cancer.<sup>7</sup>

**Family history of colorectal cancer**, particularly in close relatives (parents, siblings or children) – Compared with individuals who had no affected relative, having at least one first-degree relative with colorectal cancer was 2.2 times as likely to have the same disease. The risk of developing colorectal cancer was 4.0 times as likely with at least two affected first-degree relatives.<sup>8</sup>

**Hereditary predisposition** – About 3% to 5% of all colorectal cancers were hereditary. The two most common forms of hereditary colorectal cancer are hereditary non-polyposis colorectal cancer and familial adenomatous polyposis.<sup>2, 9</sup>

**Box 1: Major risk factors for colorectal cancer (continued)**

**Inflammatory bowel diseases** – People with Crohn’s disease or ulcerative colitis were about twice as likely to develop colorectal cancer as the general population.<sup>10, 11</sup> In general, the risk increases with duration of colitis, extent of colonic involvement, early onset of inflammatory bowel disease and severity of the inflammation.<sup>12</sup>

**Obesity** – Compared with normal weight individuals, obese individuals had about 33% increased risk of colorectal cancer. High categories of waist circumference levels were also associated with about 46% increased risk of colorectal cancer compared with low categories of waist circumference levels.<sup>13</sup>

**High intake of red and processed meats** – Every 100 g increase of total red and processed meat consumption per day was associated with 14% increased risk of colorectal cancer.<sup>14</sup>

**Smoking** – Compared with never smokers, current smokers had 20% increased risk of colorectal cancer<sup>15</sup> and 40% increased risk of dying from colorectal cancer.<sup>16</sup>

**Alcohol consumption** – Compared with non- or occasional alcohol drinkers, people who consumed 2 to 3 drinks (or 12.6 g – 49.9 g of ethanol) per day and those who consumed 4 or more drinks (or 50.0 g or more of ethanol) per day had 21% and 52% increased risk of colorectal cancer respectively.<sup>17</sup>

**Sedentary behaviours and long-term sedentary work** – Sedentary behaviour was associated with 30% increased risk of colon cancer.<sup>18</sup> Compared with people who spent the most time in a job requiring light activity, those who spent the most time in sedentary work had almost twice the risk of distal colon cancer.<sup>19</sup>

**Diabetes** – Compared with non-diabetic individuals, diabetic individuals had 27% and 20% increased risk of developing of and dying from colorectal cancer respectively.<sup>20</sup>

## Burden of Colorectal Cancer in Hong Kong

### Incidence

In 2011, colorectal cancer overtook lung cancer for the first time to become the most common cancer in Hong Kong, accounting for 4 450 new cases or 16.5% of all new cancers in that year (Table 2). Analysed by sex and age group, 56.9% and 91.4%

of new colorectal cancer cases occurred in males and people aged 50 and above respectively. The crude incidence rates were 76.7 for male and 50.8 for female per 100 000 population of respective sex.<sup>21</sup>

**Table 2: Fast stats on colorectal cancer incidence, 2011**

	Male	Female	Overall
<b>Number of new cases:</b>	2 534	1 916	4 450
<b>Crude incidence rate*:</b>	76.7	50.8	62.9
<b>Age-standardised incidence rate**:</b>	46.0	30.1	37.7
<b>Proportion of all new cancers:</b>	18.1%	14.8%	16.5%
<b>Median age of first diagnosis (years):</b>	70	71	70
<b>Lifetime risk before age 75:</b>	1 in 22	1 in 35	1 in 27
<b>Ranking (defined by total number of new cases):</b>	2	2	1

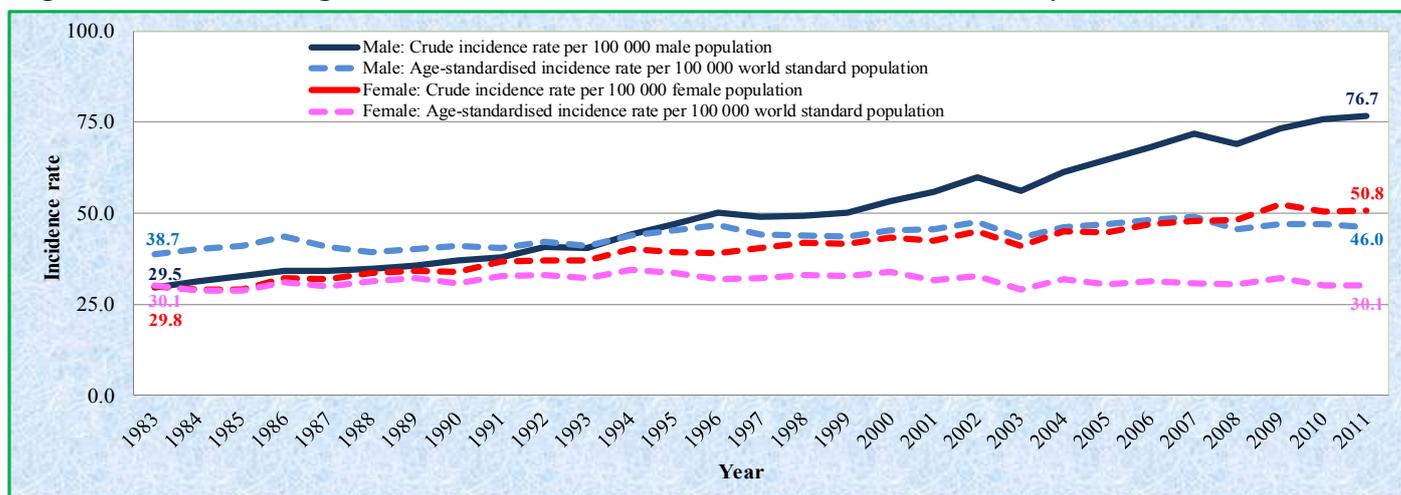
Notes: \*Per 100 000 population; \*\* Per 100 000 world standard population.

Sources: Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

After adjusting for population ageing, the age-standardised incidence rates were 46.0 for male and 30.1 for female per 100 000 world standard population in 2011.<sup>21</sup> Since the early 1980s, there has been an overall upward trend for the crude and

age-standardised incidence rates for both sexes. However, the rising trend for age-standardised incidence rates became insignificant over the recent 10 years (Figure 1).

**Figure 1: Crude and age-standardised incidence rates of colorectal cancer by sex, 1983-2011**

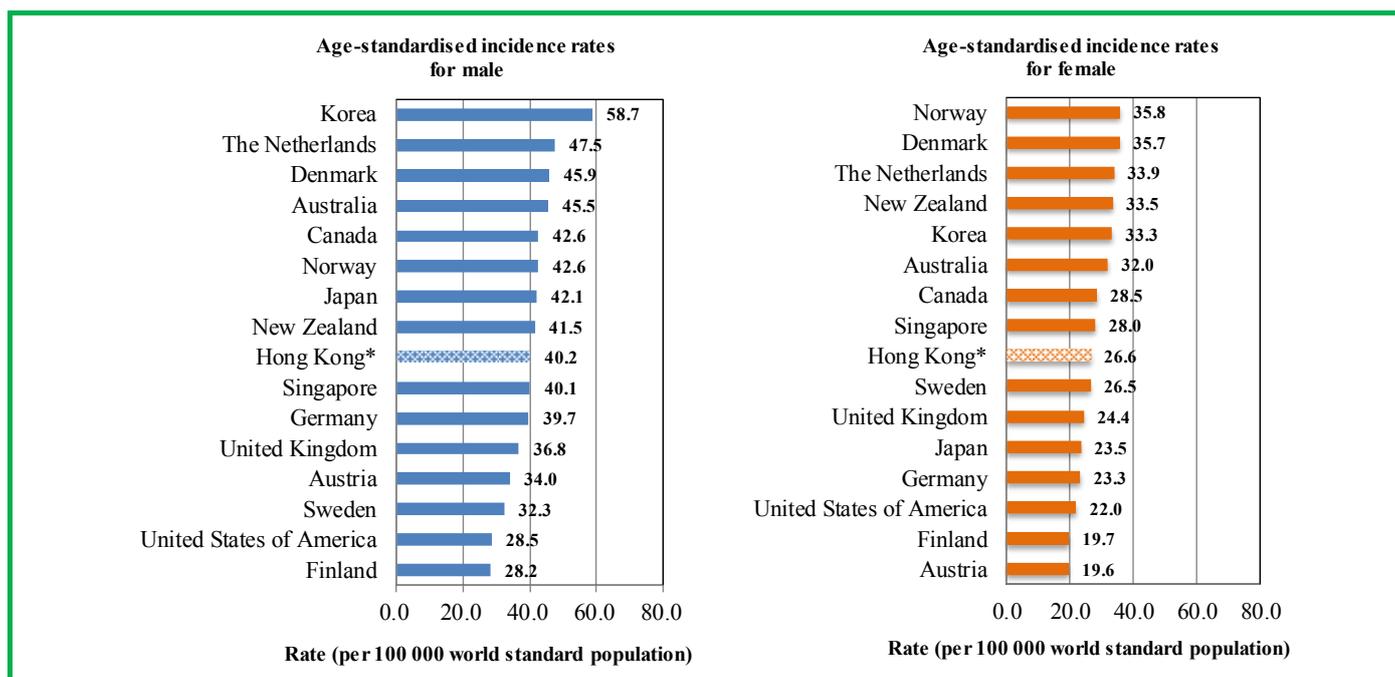


Sources: Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

When compared to other countries in the world, the age-standardised rates of colorectal cancer for male and female in Hong Kong were higher (Figure 2). Overall, the age-standardised incidence

rate of colorectal cancer in Hong Kong (33.2 per 100 000 world standard population in 2011) was nearly twice of the global rate (17.2 per 100 000 world standard population in 2012).<sup>1, 21</sup>

**Figure 2: International comparison of age-standardised incidence rates of colorectal cancer by sex, 2012**



Note: \*Age-standardised incidence rate of Hong Kong in 2011. For the purpose of international comparison, the age-standardised incidence rates for male and female in Hong Kong are calculated in accordance to the Globocan 2012's methodology.

Sources: Globocan 2012, International Agency for Research on Cancer, Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

Stage at diagnosis is an important prognostic factor in colorectal cancer. Overseas study has shown that the 5-year relative survival rate for patients diagnosed with localised colorectal cancer (stage I or II) is over 90%. However, the relative survival rate declines to about 69% if the cancer has spread beyond the colon and involved adjacent organs

**Mortality**

Colorectal cancer is the second leading cause of cancer deaths in Hong Kong. In 2012, there were 1 903 registered deaths attributed to colorectal cancer, accounting for 14.3% of all cancer deaths

or lymph nodes (stage III), and further drops to about 12% if the disease has spread to other organs such as the liver or lungs (stage IV).<sup>6</sup> In 2011, close to half (48.6%) of the new cases of colorectal cancer in Hong Kong were diagnosed at stage III (25.9%) or stage IV (22.7%).<sup>22</sup>

and resulting in 11 249 potential years of life lost (PYLL) at age 75. The crude death rates were 32.4 for male and 21.5 for female per 100 000 population of respective sex (Table 3).<sup>23</sup>

**Table 3: Fast stats on colorectal cancer mortality, 2012**

	Male	Female	Overall
<b>Number of registered deaths:</b>	1 079	824	1 903
<b>Crude death rate*:</b>	32.4	21.5	26.6
<b>Age-standardised death rate**:</b>	18.2	11.0	14.4
<b>Proportion of all registered cancer deaths:</b>	13.6%	15.3%	14.3%
<b>Median age of death (years):</b>	75	78	76
<b>PYLL at age 75:</b>	6 438	4 811	11 249
<b>Ranking (defined by total number of registered cancer deaths):</b>	2	2	2

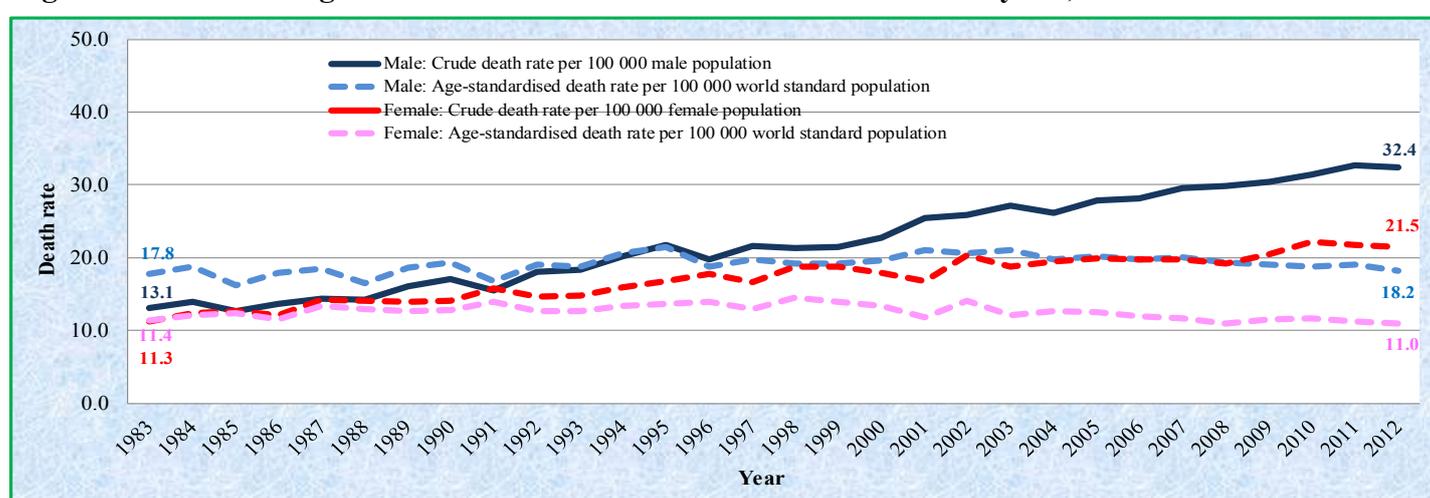
Notes: \*Per 100 000 population; \*\* Per 100 000 world standard population.

Sources: Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

As shown in Figure 3, there had been a gradual increase in the crude death rates and age-standardised death rates of colorectal cancer for male and female since the early 1980s.

However, such trend for the age-standardised death rate for both sexes was reversed over the recent 10 years.<sup>23</sup>

**Figure 3: Crude and age-standardised death rates of colorectal cancer by sex, 1983-2012**

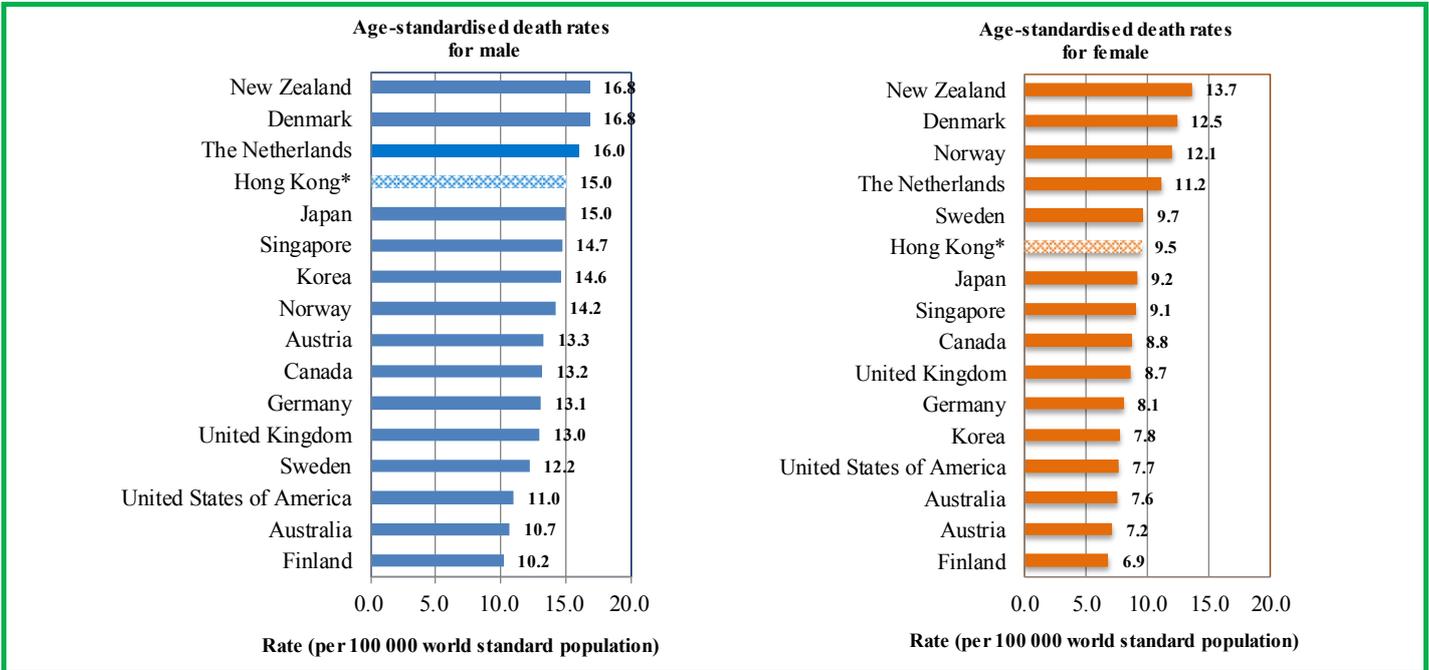


Sources: Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

In 2012, the age-standardised death rates of colorectal cancer for male (15.0 per 100 000 world population) and for female (9.5 per 100 000 world standard population) in Hong Kong were higher than those reported in many other countries

(Figure 4). Overall, the age-standardised death rate of colorectal cancer in Hong Kong (12.1 per 100 000 world standard population) was about 46% higher than that of the global rate (8.3 per 100 000 world standard population).<sup>1, 23</sup>

**Figure 4: International comparison of age-standardised death rates of colorectal cancer by sex, 2012**



Note: \*For the purpose of international comparison, the age-standardised death rates for male and female in Hong Kong are calculated in accordance to the Globocan 2012’s methodology.

Sources: Globocan 2012, International Agency for Research on Cancer, Hong Kong Cancer Registry of Hospital Authority, Department of Health and Census and Statistics Department.

### Colorectal Cancer Prevention and Detection

While some risk factors of colorectal cancer may not be amenable to change (such as age and genetic predisposition), a sizable proportion of colorectal cancer cases can potentially be prevented or avoided by adopting a healthy lifestyle, undergoing appropriate screening for colorectal cancer, and early recognition of symptoms of colorectal cancer for timely detection and prompt treatment.

#### Adopting a Healthy Lifestyle

This is crucial for colorectal cancer prevention. A prospective Danish cohort study of over 55 000 men and women aged 50 to 64 with a mean follow-up of 9.9 years found that following the five healthy lifestyle recommendations on eating a healthy diet, regular physical activity, avoiding obesity, no smoking, and avoiding alcohol consumption was linked to a lower risk of colorectal cancer.

Overall, an estimated 13% of colorectal cancer cases could have been prevented if the participants managed to improve their lifestyle by following merely one additional recommendation. Furthermore, an estimated 23% of the colorectal cancer cases might have been prevented if participants had followed all of the five recommendations.<sup>24</sup> Thus, members of the public are advised to:

- > **Have a balanced diet** with at least 5 servings of fruit and vegetables a day. Eat more whole-grains or unprocessed cereals. An European prospective investigation into cancer and nutrition found that every 10 g per day increase of fruit and vegetable fibre and cereal fibre intake was associated with 9% and 11% decrease in colorectal cancer risk respectively.<sup>25</sup> Also, consumption of red meat should be limited and processed meats, smoked or preserved foods should be avoided.

> **Be physically active and avoid sedentary lifestyle** (such as TV watching). Studies showed that most physically active people had about 27% decreased risk of proximal colon cancer and 26% decreased risk of distal colon cancer compared with the least physically active people.<sup>26</sup> For optimal health, adults should do at least 150 minutes of moderate-intensity physical activity (such as brisk walking, swimming slowly or cycling leisurely), or 75 minutes of vigorous-intensity physical activity (such as jogging, fast swimming or rope jumping), or equivalent amounts throughout the week.

> **Maintain a healthy body weight and waist measurement.** For Chinese adults in Hong Kong, aim for a body mass index (BMI) between 18.5 and 22.9. Irrespective of their BMI, men should keep their waist circumference below 90 cm (~ 36 in) and women should keep theirs below 80 cm (~ 32 in).

> **Do not smoke.** Current smokers can call the Integrated Smoking Cessation Hotline of the Department of Health (DH) at 1833 183 for free quit smoking advice and help.

> **Avoid alcohol consumption.** As supported by sufficient scientific evidence, alcohol is a cancer-causing substance. When it comes to cancer risk, there is no safe level for consumption. The cancer risk is the same for beer, wine or spirits.<sup>27</sup>

For more information about healthy living, please call the 24-hour Health Education Hotline at 2833 0111, or visit the Central Health Education Unit website of DH at <http://www.cheu.gov.hk>.

### *Screening for Colorectal Cancer*

Use of recommended colorectal cancer screening can both detect the disease earlier and prevent colorectal cancer by promoting the removal of polyps that may become cancerous. Common screening tests for colorectal cancer include faecal occult blood test (FOBT) which include guaiac faecal occult blood test (gFOBT) and faecal immune-chemical test (FIT), flexible sigmoidoscopy and colonoscopy, each of which has its pros and cons. For example, FIT requires collection of minor

amounts of stool in a special device at home and requires no bowel preparation, but the test may miss some polyps and cancers and need to be repeated every 1 to 2 years. Flexible sigmoidoscopy allows the descending colon to be inspected with relative ease. Colonoscopy allows the entire length of the colon to be inspected. By means of sigmoidoscopy or colonoscopy, doctors can obtain tissue samples for laboratory examination and remove polyps. However, bowel preparation is required and the tests carry potential risk of bleeding, infection or bowel perforation. According to available evidence, there is insufficient information to determine which screening test is superior in terms of the balance of benefits and potential harms.<sup>4,5</sup>

Although there is currently insufficient local evidence to support the implementation of a population based colorectal cancer screening programme in Hong Kong, the Government's Cancer Expert Working Group on Cancer Prevention and Screening (CEWG)<sup>4</sup> recommends that:

> **Men and women aged 50 to 75** should discuss with their doctor and consider screening for colorectal cancer by one of the following methods — faecal occult blood test every 1 to 2 years; or flexible sigmoidoscopy every 5 years; or colonoscopy every 10 years.

> **High risk individuals** (e.g. those with hereditary bowel diseases or those with one or more first-degree relatives having colorectal cancer diagnosed at or below 60 years of age) should start colorectal cancer screening at an earlier age and have screening repeated at shorter time intervals as recommended by their doctor.

It is noteworthy that every screening test together with the subsequent confirmatory tests and treatments has associated potential risks which may outweigh the benefits. Besides, all screening tests have their limitations and they cannot 100% accurate. There are false positive and false negative

results. Thus, individuals considering colorectal cancer screening should obtain full information from doctors on potential benefits and risks of having the test. More information about the CEWG's recommendations on colorectal cancer screening could be found at the website of the Centre for Health Protection (CHP): [http://www.chp.gov.hk/files/pdf/recommendations\\_on\\_crc\\_screening\\_2012.pdf](http://www.chp.gov.hk/files/pdf/recommendations_on_crc_screening_2012.pdf).

### *Recognising the Signs and Symptoms of Colorectal Cancer Early*

Increasing awareness of the signs and symptoms of colorectal cancer can help detect the disease at earlier stages and thus promote its curability. Although colorectal cancer may often have no or subtle symptoms in its early stage of development, in many cases it is still possible to detect unusual changes early. Here are the common signs and symptoms of colorectal cancer<sup>5</sup>:

- Change in bowel habits (diarrhoea or constipation) with unknown reason that lasts for more than two weeks;
- Blood (either bright red or very dark) or large amount of mucus in stool;
- Persistent urge after passing stool;
- Abdominal discomfort, such as persistent pain, bloating, fullness, or cramps;
- Weight loss and tiredness for unknown reasons.

Of note, most of these signs and symptoms may be caused by conditions other than colorectal cancer, such as infection, haemorrhoids, irritable bowel syndrome or inflammatory bowel diseases. Yet, if you experience them, it would be wise to consult a family doctor and check it out early.

### *Seeking Appropriate Treatment and Supportive Services*

The diagnosis of colorectal cancer is not a death sentence. In fact, colorectal cancer often has a high cure rate if it is detected early and treated according to best practice.

Largely dependent on the stage of the disease, treatment modalities may include one or a combination of the following: surgery, chemotherapy, radiation therapy and targeted therapy. Colorectal cancer patients should face the disease positively by understanding the disease and its treatment; leading a healthy lifestyle; working closely with health care professionals involved in the care; and taking part in support groups to enhance the ability to self-care and for mutual support.

The CEWG has developed a booklet 'Prevention and Screening for Colorectal Cancer' for public information which can be downloaded from the CHP website: [http://www.chp.gov.hk/files/pdf/colorectal\\_ca\\_en.pdf](http://www.chp.gov.hk/files/pdf/colorectal_ca_en.pdf).

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## News Bites

The Government announced in the 2014 Policy Address that colorectal cancer (CRC) screening for higher risk groups will be subsidised and the Department of Health has commenced the preparatory work of a CRC screening pilot programme since beginning of this year. The aim of the pilot programme is to gather local experience and fill knowledge gaps surrounding CRC screening so that evidence based findings and recommendations can be generated to inform decisions if screening should be extended to cover a wider population. In view of the complexity of the pilot programme, a multi-disciplinary Task Force (TF) underpinned by relevant Colleges of the Hong Kong Academy of Medicine has been established to oversee the overall planning, implementation, promotion and evaluation of the pilot programme. Members are derived from within the Government, Hospital Authority, Academy Colleges, medical associations, primary care sector, academia, public and private sector health service providers and a non-governmental organisation.

Under the TF, four working groups (WG) have been set up to discuss and consider options in relation to (1) use of Faecal Immunochemical Test, (2) colonoscopy and assessment, (3) screening registry and (4) promotion and publicity. The TF and WG have been meeting regularly and achieving good progress.

**Non-Communicable Diseases (NCD) WATCH** is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to [so\\_dp3@dh.gov.hk](mailto:so_dp3@dh.gov.hk).

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