Cancer prevention: How to reduce the risk for cancer?

Liem Phan, Ph.D.
The University of Texas
MD Anderson Cancer Center
How dangerous is cancer?

What causes cancer?

How can we prevent cancer?

MD Anderson Cancer Center and the mission of ending cancer
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MD Anderson Cancer Center and the mission of ending cancer
Cancer is the emperor of all diseases
39.6% of Americans could be diagnosed with cancer during their lifetimes.

National Cancer Institute (Based on 2010-2012 data)

60.4%
No sign of cancer during their lifetimes
Vietnam: cancer mortality rate: 74.8% (among the highest rates in the world)

More than 150,000 new cases of cancer detected per year

Most of Vietnamese cancer patients are diagnosed at late stages, making treatment very challenging.

Photo: Chương trình “Ước mơ của Thuý”
Cancer cells frequently metastasize, causing deadly consequences for cancer patients.

Source: http://www.cancer.gov/about-cancer/what-is-cancer
Cancer is extremely dangerous

- Silent killer – hard to diagnose
- Often resist to standard therapies
- Frequent metastasis to important organs
- We have not found an effective cure for cancer yet

Cancer – the emperor of all maladies
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MD Anderson Cancer Center and the mission of ending cancer
Causes of cancer

- Genetic mutations
- Lifestyle (smoking, lack of exercise or sleep, unhealthy diets,...)
- Environmental factors (pollutions, carcinogens,...)
- Pathogens (virus, bacteria,...)
- Other diseases (obesity, diabetes, immunosuppression,...)
Cause of cancer – genetic mutations

Cancer Arises From DNA Mutations in Cells

Normal cell → DNA mutations → Uncontrolled proliferation

Last DNA mutation from:
- heredity
- radiation or chemicals
- spontaneous errors during DNA duplication

Source: http://www.stylepinner.com/genetic-mutation-that-causes-cancer/Z2VuZXRpYy1tdXRhdGlvbi10aGF0LWNhdXNlcy1jYW5jZXI/
Causes of cancer - Lifestyle

- Smoking: 21%
- Alcohol Use: 5%
- Low fruit and vegetable intake: 5%
- Unsafe sex: 3%
- Physical inactivity: 2%
- Contaminated injections in health-care settings: 2%
- Overweight and obesity: 2%
- Urban air pollution: 1%
- Indoor smoke from household use of solid fuels: 0.5%
- ~40% preventable cancer

Cause of cancer – environmental factors

Source: http://viotox.com/cancer-facts/
Cause of cancer – pathogens

Adapted from the American Association for Cancer Research 2014 Cancer Progress Report
Obesity promotes cancer

HOW COULD OBESITY LEAD TO CANCER?

Research has identified three main ways

1. **Oestrogen**
   - After the menopause, oestrogen made by fat cells can make cells multiply faster in the breasts and womb, increasing the risk of cancer.

2. **Insulin and growth factors**
   - Excess fat can cause levels of insulin and other growth factors to rise, which can also tell cells to divide more rapidly.

3. **Inflammation**
   - Cells in fat called macrophages release chemicals called cytokines, encouraging cells to divide (including cancer cells).

There are other theories too, but these are the main ideas being studied. More research is needed to understand this in more detail.

Diabetes promotes cancer progression

Diabetes → Insulin and other growth factors → Cancer

High glucose level
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Cancer prevention – regular checkups

The frequencies and methods of your cancer screening programs will be optimized by your physicians depending on your age, gender, occupation, family history,...
Cancer prevention – regular checkups

Guidance from MD Anderson Cancer Center for low-risk women

20-29: Clinical breast exam, Pap test (since 21) every 1 to 3 years

30-39: Clinical breast exam every 1 to 3 years, Pap test and HPV test every 5 years

40-49: Mammogram, Clinical breast exam every year, Pap test and HPV test every 5 years

50-75: Mammogram, Clinical breast exam every year, Pap test and HPV test every 5 years, colonoscopy every 10 years and colon CT scan every 5 years

Above 76: Your physician will determine your cancer screening program

Cancer prevention – regular checkups

Guidance from MD Anderson Cancer Center for low-risk men

40-49: Consult with your physician about the benefits and risks of prostate cancer screening. If you have a high risk for prostate cancer, you should have PSA and prostate checkup every year.

50-75: Prostate checkup, PSA test and general checkup every year, colonoscopy every 10 years and colon CT scan every 5 years

Above 76: Your physician will determine your cancer screening program

Signs of cancer

12 WARNING SIGNS
The symptoms do not necessarily mean cancer, but don’t ignore if they persist beyond three weeks

- Persistent headache
- Shortness of breath
- A cough or hoarseness that refuses to go
- Indigestion or difficulty in swallowing
- Loss of appetite
- A sore or bruise that does not heal
- A change in bowel or bladder habits for no reason
- Unexplained changes to fingernails
- Blood in urine, stool or spittle
- A mole that changes shape, size or bleeds
- Unexplained weight loss or tiredness
- New lumps or growths on skin

Source: http://organicinsights.in/not-beyond-us/
Some warning signs of breast cancer

1. Redness of the breast
2. Breast swelling or enlargement
3. Pain or itchiness of the breast
4. Thickening of the skin on the breast and ridged or dimpled skin texture (peau d’orange)
5. Swelling of the lymph nodes in your armpit or above/below the collarbone

Cancer prevention – active lifestyle and healthy weights

Active lifestyle and maintain healthy weights
Cancer prevention – quit smoking

Quit smoking
Cancer prevention – healthy diets
Cancer prevention – healthy diets

Anti-Cancer Superfruits

- Blueberries
- Goji Berries
- Dragon Fruit
- Acai Berries
- Citrus
- Pomegranate
- Grapes
- Avocado
- Soursop
- Noni
- Apple
- Strawberries
- Mangosteen
- Kiwi

Source: https://www.youtube.com/watch?v=yBv998KUOnQ
Cancer prevention – healthy diets

12 HEALTHY FOODS THAT HELPS PREVENT BREAST CANCER

- Curry
- Apples
- Berries
- Broccoli
- Fish
- Flaxseed
- Garlic
- Green Tea
- Orange Fruits and Vegetables
- Pomegranates
- Soybeans
- Walnuts

Source: everydayhealth.com
# Cancer-fighting foods

Make fruits, vegetables, beans and whole grains the biggest part of every meal. Use this list next time you visit the grocery store.

## Produce
- Sweet potatoes
- Broccoli
- Cauliflower
- Brussels sprouts
- Bok choy
- Spinach (preferably organic)
- Kale or collard greens (preferably organic)
- Peas (fresh or frozen)
- Romaine lettuce
- Edamame
- Tomatoes (no salt added if canned)

## Grains
- Wild or brown rice (regular or instant)
- Whole grain pasta
- Lentils

## Bread
- Whole grain bread, tortillas or buns

## Cereal
- Bran flakes
- Oatmeal

Source: MD Anderson Cancer Center
Garlic  ☐  Pears  ☐  Oranges  ☐
Red or purple grapes (preferably organic)  ☐  Fresh or frozen berries (preferably organic)  ☐

Protein
☐ Lean chicken or turkey
☐ Lean fish such as salmon, halibut, redfish or red snapper
☐ Tofu
☐ Black, red or pinto beans (low sodium)
☐ Garbanzo beans/chickpeas (low sodium)

Dairy
☐ Skim milk
☐ Low-fat cheese
☐ Eggs or egg substitutes

Snacks
☐ Whole grain tortilla chips
☐ Hummus
☐ Almonds (plain, unsalted)

Condiments
☐ Olive oil
☐ Canola oil
☐ Low-fat or fat-free salad dressing

Spices
☐ Turmeric

Beverages
☐ Juice (100% juice, no added sugar)
☐ Green or white tea (tea bags or loose)
Contaminated soy products (soy sauce, fermented soy tofu,) — aflatoxin significantly elevates your risk for cancer.

- Burned food
- Red meat
- Food and drink preservatives
- Alcohol
- …
Cancer prevention

Cancer prevention – drinks and foods to avoid

Summary of cancer prevention

FOR A CANCER-FREE LIFE

- Healthy diets
- Regular screening
- No smoking
- UV protection
- Vaccination
- Stress-free
- Regular exercise

Maintain healthy weights
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MD Anderson Cancer Center and the mission of ending cancer
The University of Texas MD Anderson Cancer Center is ranked the No. 1 hospital for cancer care in the nation by U.S. News & World Report's “Best Hospitals” survey.

Since the annual survey launched in 1990, MD Anderson has been named one of the top two cancer hospitals in the United States.
Our mission: End cancer

Outpatient clinic visits, treatments, procedures: more than 1,3 million
Pathology/laboratory medicine procedures: more than 12 million
Total active clinical research protocols: 1,101
(one of the most active cancer research hospitals in the USA)
Cancer is not stopping yet, so are we.
Research and Therapy
Innovation
Diagnosis, Treatment, and Prevention
Training and Education
Hospitals and Clinics
Schools and Training Programs
Research and Therapy Innovation
Research Institutes
Our fight against cancer to save patients
Our mission of finding a cure for cancer
For your cancer-free life

Choose *healthy* food, especially veggies, fruits and whole grains

Maintain healthy weights

Exercise regularly

Avoid tobacco

Perform regular cancer screenings for early detection. Learn about common signs of cancer

Protect yourself from the sun (especially from 10 am to 4 pm) by applying sunscreen with SPF over 30, wearing sunglasses and protective clothing.

Learn about common signs of cancer

Thank you very much for your attention and helping coordinate this seminar!
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