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EPIDEMIOLOGY OF HEAVY ALCOHOL CONSUMPTION AND CANCER



HEAVY ALCOHOL

- **Heavy: defining as consumption above the US guidelines:**
 - **>1 drink per day for women**
 - **>2 drinks per day for men**
- **Binge drinking**
 - **\geq 4 drinks in about 2 hours for women**
 - **\geq 5 drinks in about 2 hours for men**

DGA: Dietary Guidelines for Americans 2020-25

NIAAA: <https://www.niaaa.nih.gov/alcohols-effects-health/alcohol-drinking-patterns>

ALCOHOL AND CANCER

- **Consensus that alcohol is a carcinogen**
- **Consensus that alcohol is a risk factor for seven cancer sites**

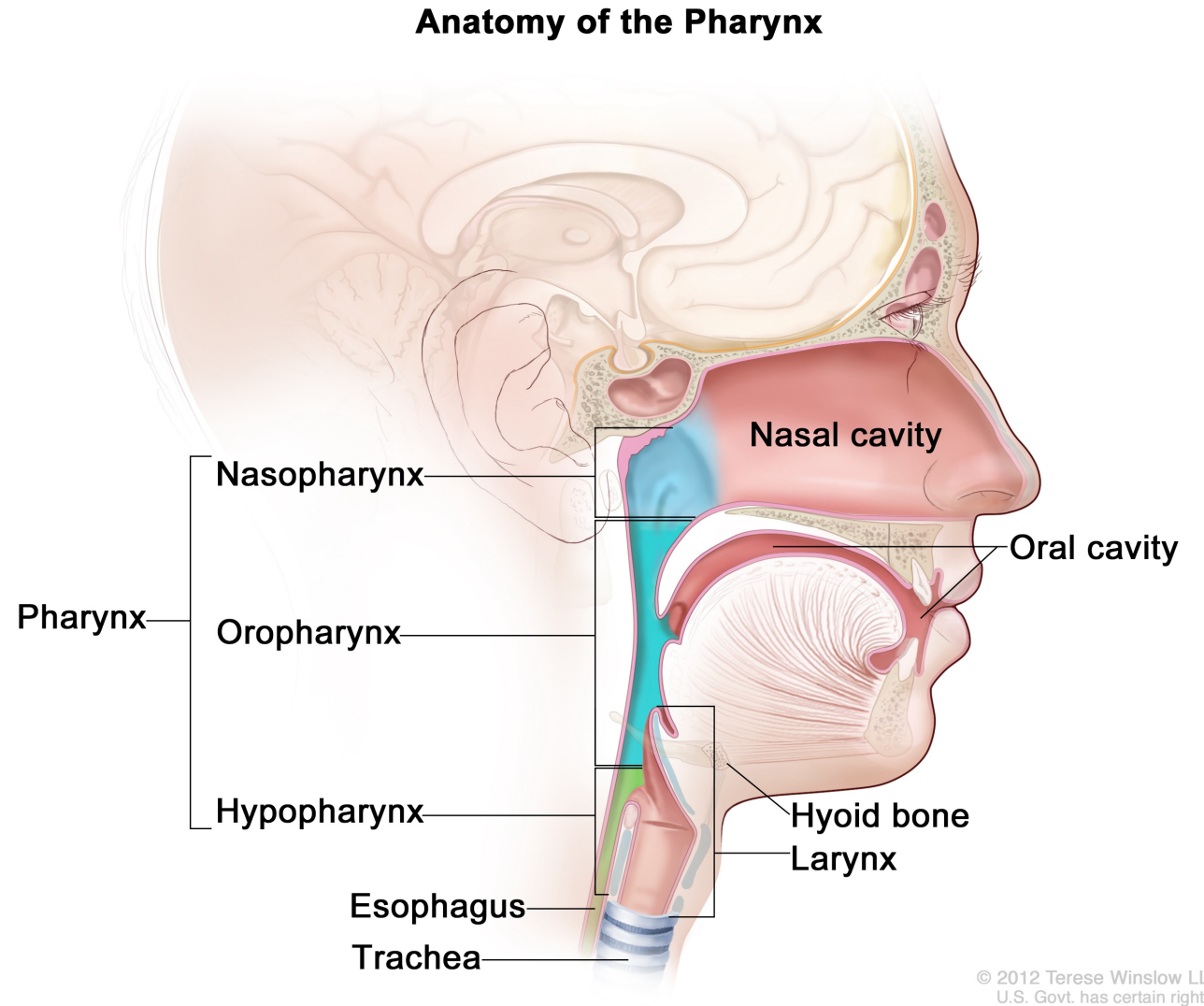
ALCOHOL AND CANCER

- Oral cavity
- Pharynx
- Larynx
- Esophagus (squamous)
- Liver (hepatocellular)
- Breast (female)
- Colorectum

ALCOHOL AND CANCER

- **Data from studies, that included hundreds of thousands of participants**
- **Systematic reviews of all available data—>570 studies**
- **Pooled data analyzing data together from numerous > 25 cohorts**

ORAL, PHARYNGEAL AND LARYNGEAL CANCERS



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NCI: <https://www.cancer.gov/types/head-and-neck/patient/oral-prevention-pdq>

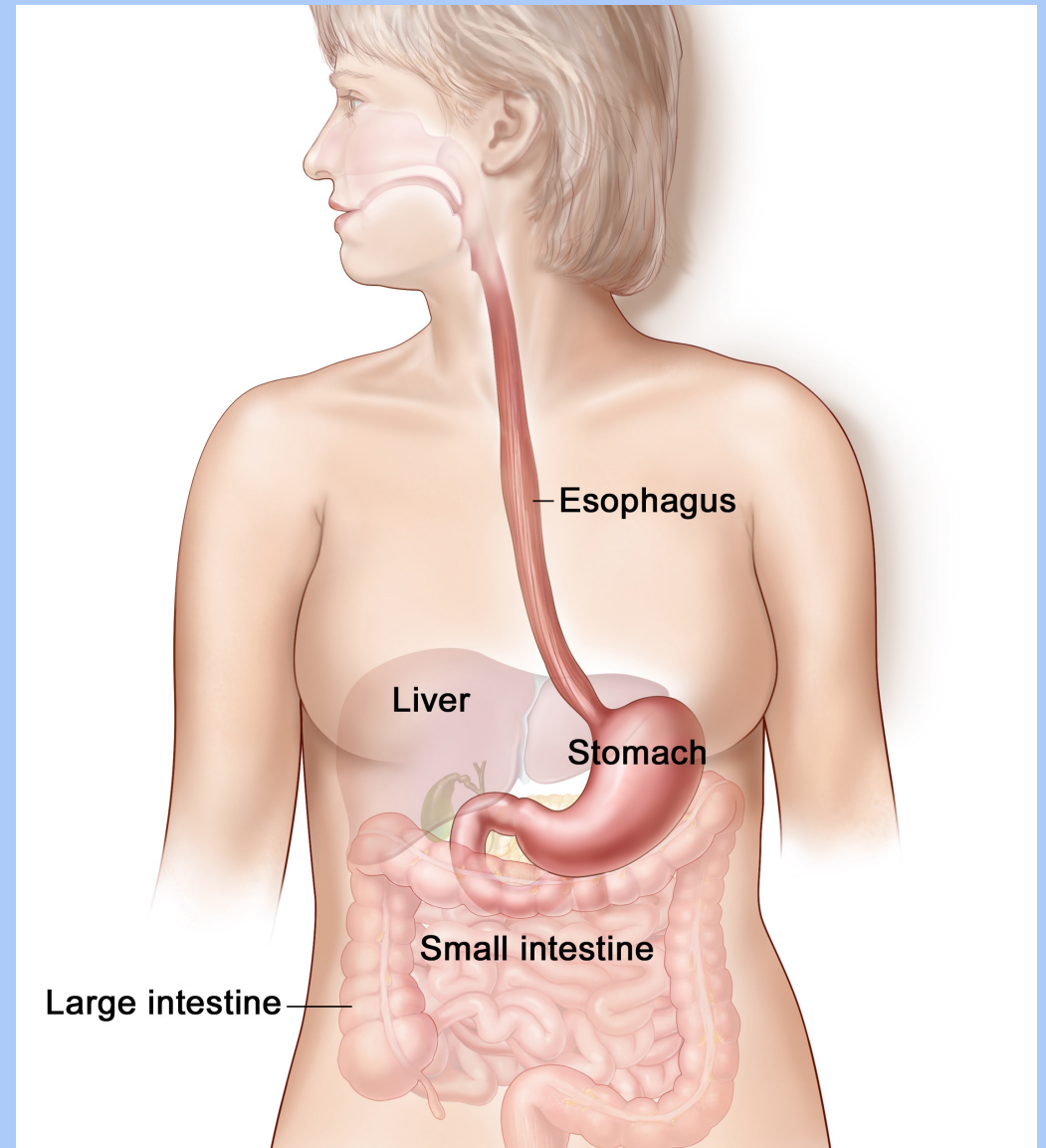
HEAD AND NECK CANCER AND ALCOHOL

- Cancer risk increases with alcohol consumption
- 10-20% increase in risk for each 10g alcohol/day, depending on cancer site
- Risk increases 2-6x for those drinking two or more drinks per day compared to those not drinking
- Risk increases 5-14x for those who both smoke *and* drink heavily compared to those who never smoke or consume alcohol

ALCOHOL REDUCTION/CESSATION AND HEAD AND NECK CANCER

- Oral cancer risk decreases with reduction/cessation of alcohol consumption- “sufficient evidence”
- Evidence less strong (“limited”) for change in risk of laryngeal cancer associated with reduction/cessation
- Pharyngeal cancer- evidence “inadequate”

ESOPHAGEAL CANCER (SQUAMOUS CELL)



NCI:

<https://www.cancer.gov/types/esophageal/patient/esophageal-prevention-pdq>

ALCOHOL AND ESOPHAGEAL (SQUAMOUS CELL) CANCER

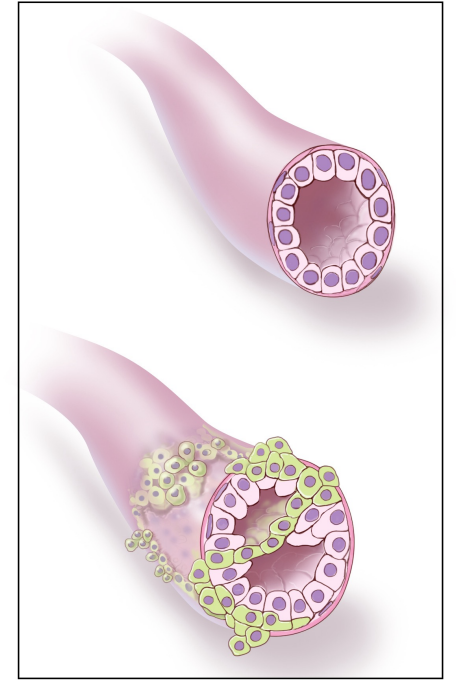
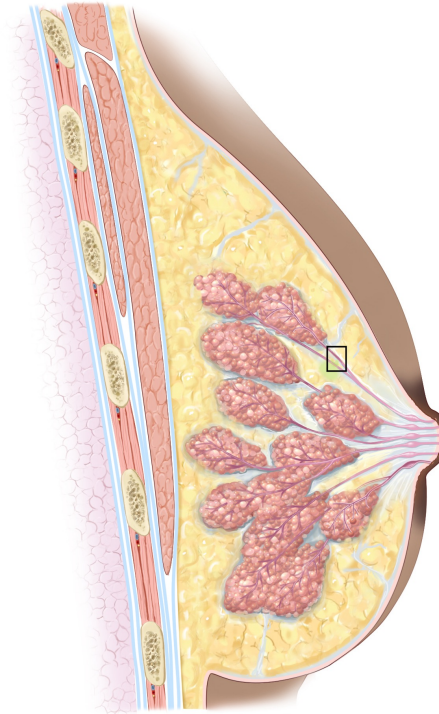
- Risk increases with alcohol consumption
- Risk increases 25% for each 10g alcohol per day
- 5x increase for heavy drinkers compared to non-drinkers and light drinkers
- Risk of esophageal (squamous cell) cancer decreases with reduction/cessation of alcohol consumption—
"sufficient" evidence

NCI: <https://www.cancer.gov/types/head-and-neck/patient/oral-prevention-pdq>

WCRF 2018

IARC 2024

BREAST CANCER (FEMALE)



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<https://www.cancer.gov/types/breast/patient/breast-prevention-pdq>

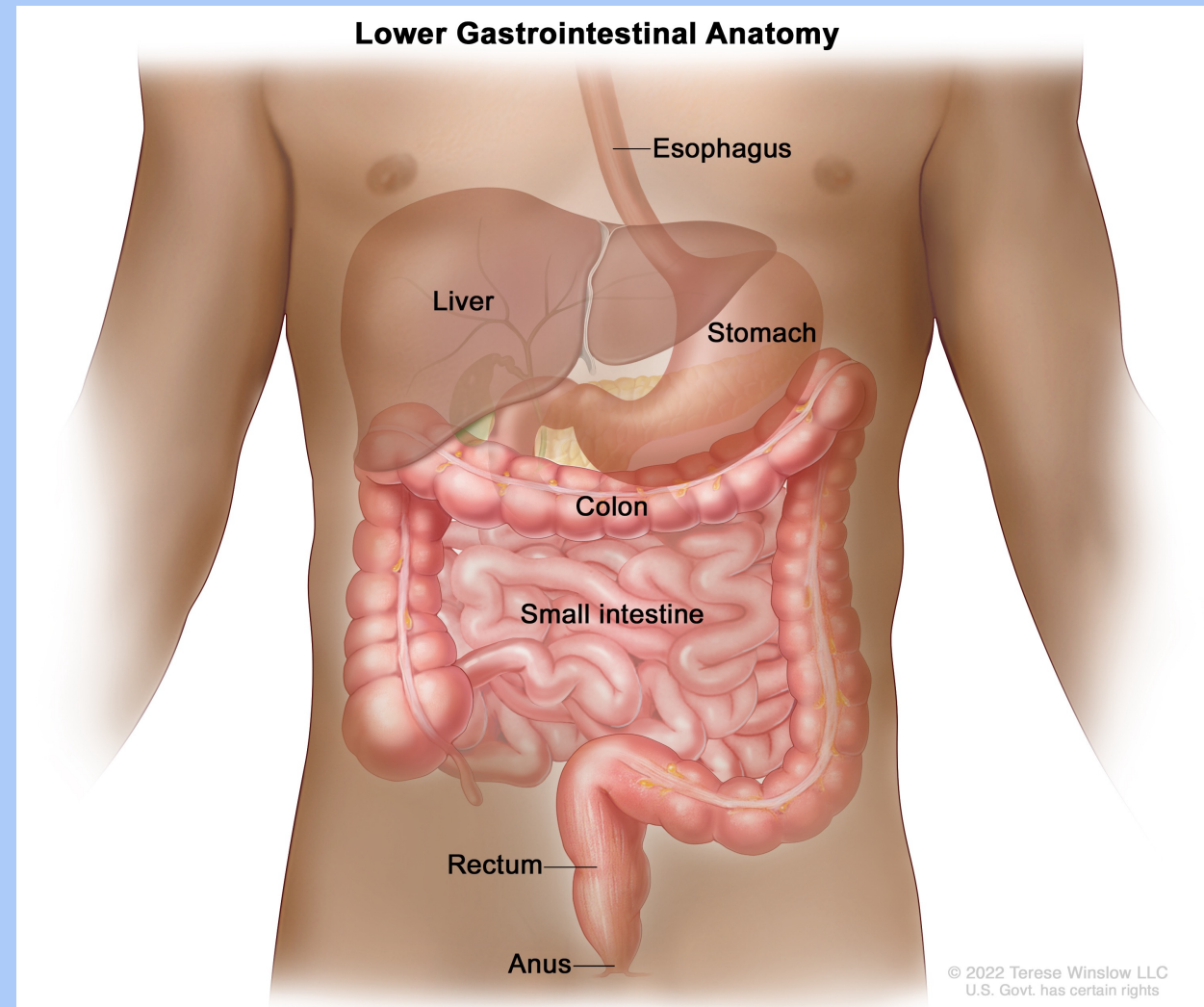
ALCOHOL AND BREAST CANCER

- **Risk increases with alcohol consumption, dose response, no evidence of lower threshold**
- **Risk increases 9% for each 10g alcohol per day**
- **14-20% increase for two drinks per day**

ALCOHOL AND BREAST CANCER

- **Absolute risk—**
 - **with consumption of 2 drinks per day, an additional 4 women per 100 lifetime risk of breast cancer**
- **“Limited” evidence of change in risk with reduction/cessation of alcohol consumption**

COLORECTAL CANCER



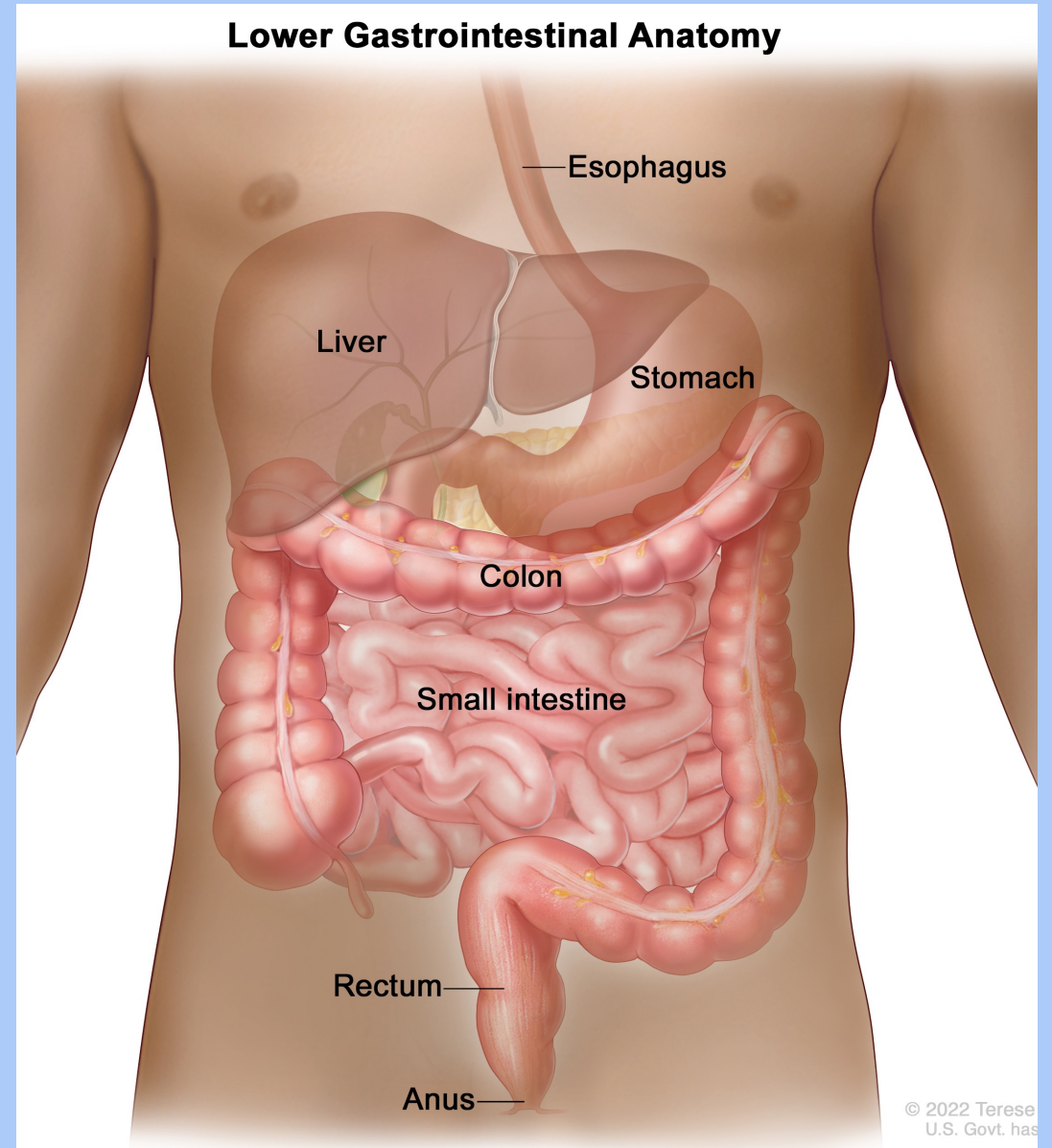
<https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq>

ALCOHOL AND COLORECTAL CANCER

- Increased risk with alcohol consumption of ≥ 2 drinks per day
- Risk increases 1.2-1.5x for moderate to heavy alcohol consumption compared to not drinking
- Risk increases 7% for each 10g alcohol per day
- “Limited” evidence of change in risk with reduction/cessation of alcohol consumption

WCRF 2018
<https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq>
IARC 2024

HEPATOCELLULAR (LIVER) CANCER



<https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq>

ALCOHOL AND HEPATOCELLULAR (LIVER) CANCER

- Risk increases for intakes of approximately >3 drinks per day
- Risk increases with alcohol consumption, especially for those with cirrhosis
- Risk increases 4% for each 10g alcohol per day
- “Inadequate” evidence of change in risk with reduction/cessation of alcohol consumption

ABSOLUTE RISK ALCOHOL AND CANCER

- **Women:**

for consumption of two drinks per day, an additional 2.5 cancers per 100 individuals, mostly increased breast cancers

- **Men:**

with consumption of two drinks per day, an additional 3 cancers per 100 individuals

OTHER SITES

- Stomach—suggested increased risk associated with ≥ 3 drinks per day
- Pancreatic cancer—modest increased risk with intake of ≥ 3 drinks per day
- Lung-- possible association, concerns with residual confounding by smoking
- Renal cancer—probable, decreased risk, up to 2 drinks per day

OTHER CONSIDERATIONS

- **Heavy episodic drinking, drinking pattern**
- **Heavy drinking earlier in life—adolescence, young adulthood**
- **Alcohol and risk of second primary cancer**
- **Alcohol and prognosis following a cancer diagnosis**

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