

LIVER CANCER PREVENTION: WORLDWIDE, NATIONAL AND LOCAL TRENDS

Presented by:

MITAL PATEL, MD



WEBINAR HOUSEKEEPING

WELCOME

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Please type any questions into the chat or Questions panel and we will do our best to answer them all at the end.

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**PLEASE ENTER YOUR
QUESTIONS IN THE CHAT.**

Liver Cancer Prevention.. Is it Possible?

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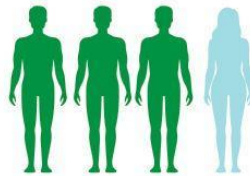
November 16, 2021



OCTOBER IS LIVER CANCER AWARENESS MONTH

>800,000

More than 800,000 people are diagnosed with liver cancer each year throughout the world.¹



Liver cancer is about 3 times more prevalent in men than in women.¹

>3x

The incidence of liver cancer has more than tripled since 1980.²



Hepatocellular carcinoma that is linked to a hepatitis C infection has become the fastest-growing cause of cancer-related deaths in the US.²



Liver cancer is more common in sub-Saharan Africa and Southeast Asia than in the US.¹

SOURCES:

1. American Cancer Society
2. Blue Faery – The Adrienne Wilson Liver Cancer Association

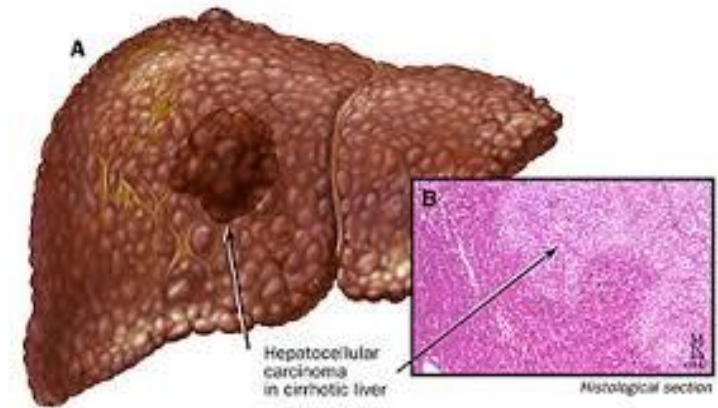
cure[®]

The Right Time to Talk is now!

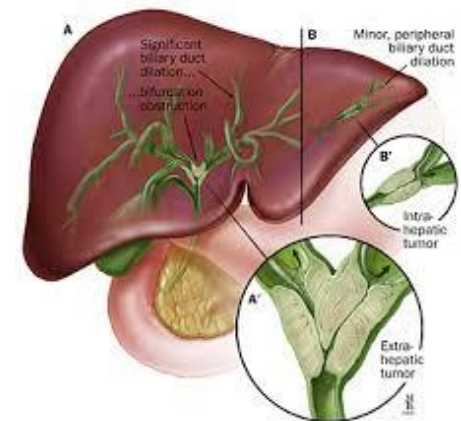
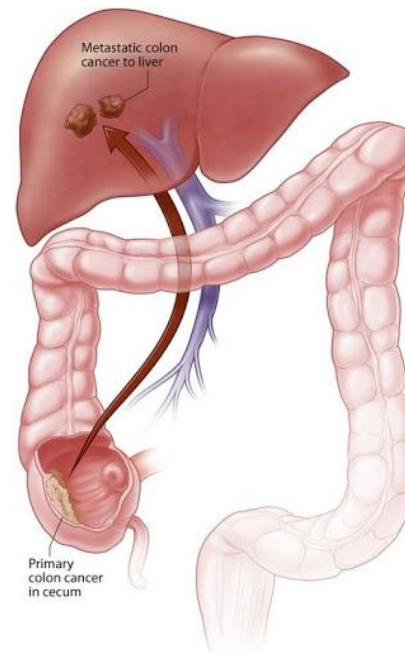
Here's What We Will Cover...

- What is liver cancer?
- How big a problem is it?
- What are the growing concerns about current trends?
 - International, national and in Arizona
- Causes of liver cancer
- Unique problems in managing and treating liver cancer
- The multidisciplinary approach of (Hepatocellular carcinoma cancer (HCC)
- Changing our focus on prevention
- Strategies for employers to help decrease the risk factors

What is Liver Cancer?



Hepatocellular carcinoma cancer (HCC)



Bile Duct Cancer

Liver Metastases

Liver Cancer: How big a problem is this?

JAMA Oncology | Original Investigation

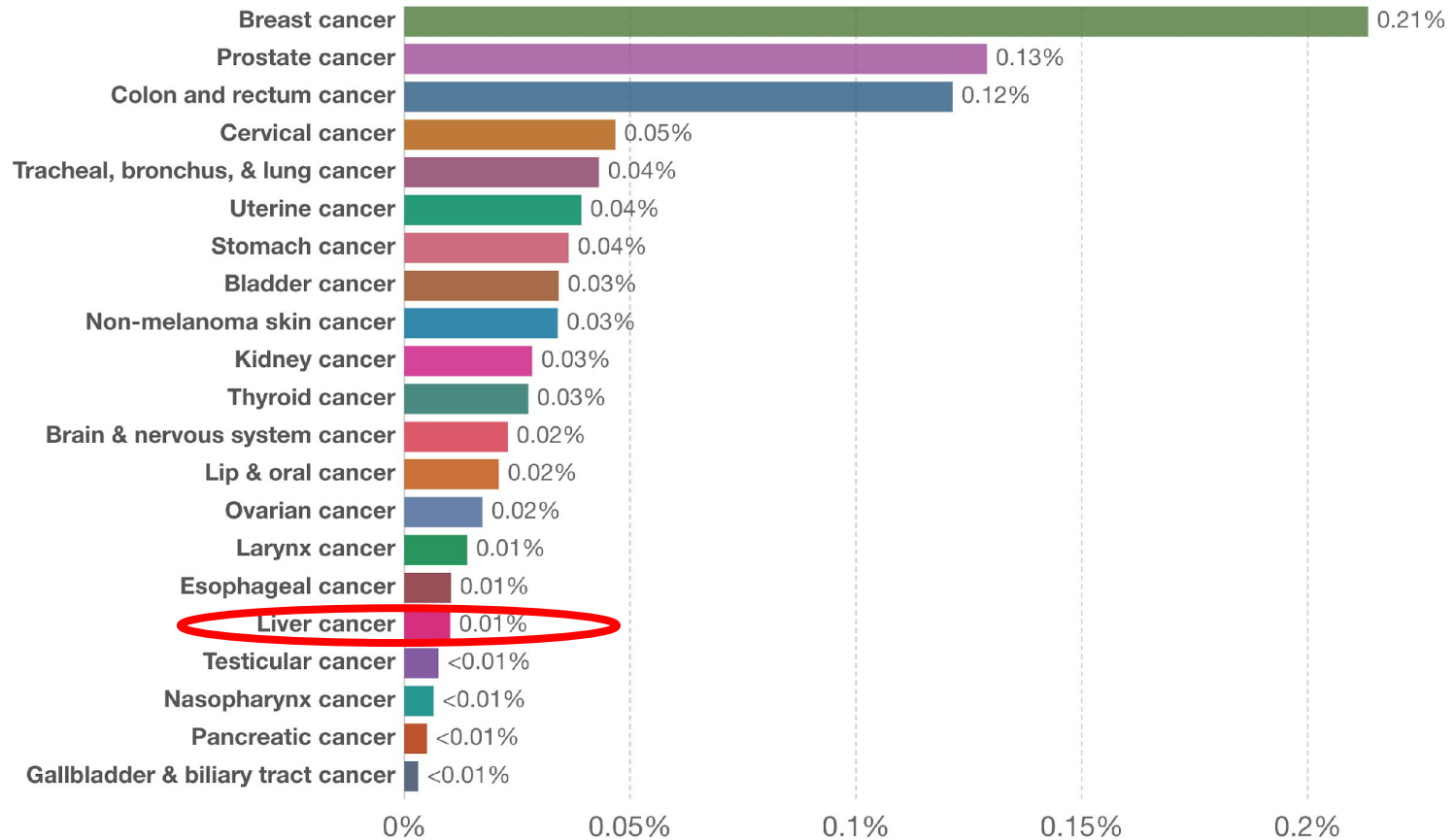
The Burden of Primary Liver Cancer and Underlying Etiologies From 1990 to 2015 at the Global, Regional, and National Level Results From the Global Burden of Disease Study 2015

Global Burden of Disease Liver Cancer Collaboration

- 195 countries or territories
- 1990 to 2015
- 854,000 new cases of liver cancer in 2015
- 810,000 deaths in 2015
- Case fatality rate is really high

Share of population with cancer, World, 2017

Our World
in Data



Source: IHME, Global Burden of Disease

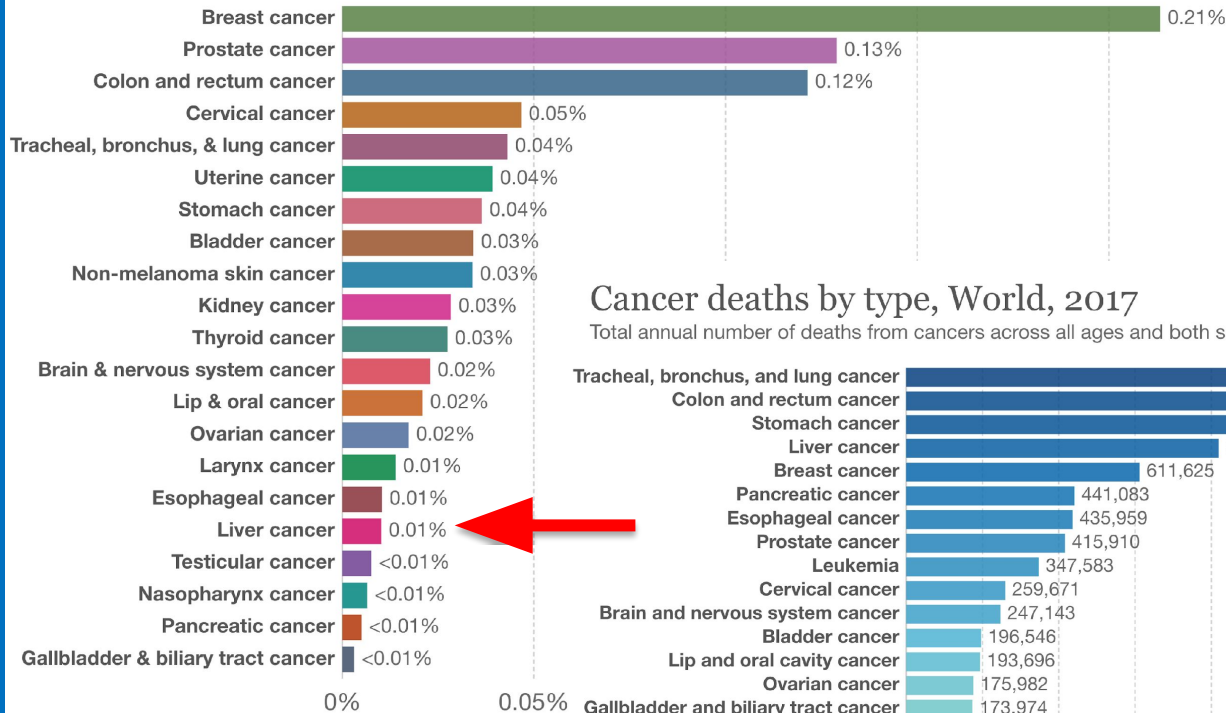
Note: To allow comparisons between countries and over time this metric is age-standardized.

OurWorldInData.org/cancer • CC BY

Cancer Deaths vs. Population with Cancer - International

Share of population with cancer, World, 2017

Our World
in Data



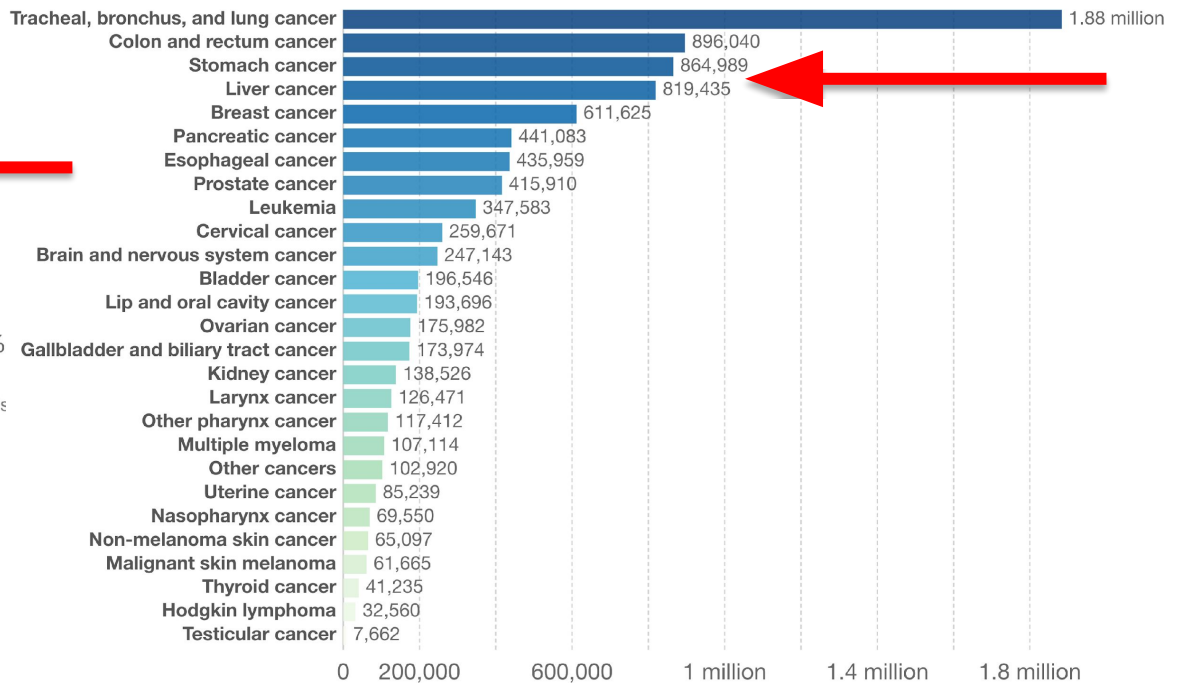
Source: IHME, Global Burden of Disease

Note: To allow comparisons between countries and over time this

Cancer deaths by type, World, 2017

Total annual number of deaths from cancers across all ages and both sexes, broken down by cancer type.

Our World
in Data

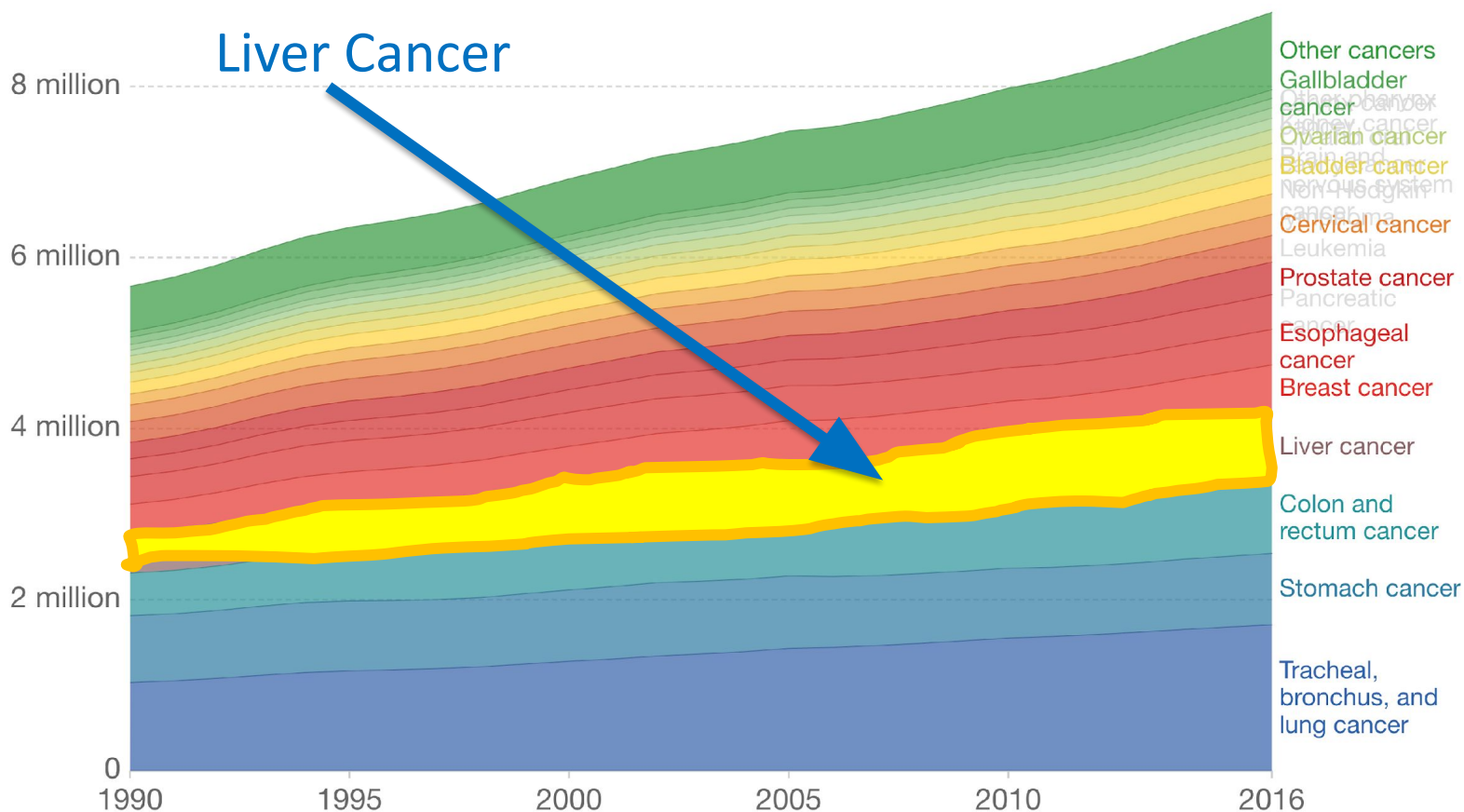


Source: IHME, Global Burden of Disease (GBD)

CC BY

Cancer deaths by type, World, 1990 to 2016

Annual cancer deaths by cancer type, measured as the total number of deaths across all age categories and both sexes. Smaller categories of cancer types with global deaths <100,000 in 2016 have been grouped into a collective category 'Other cancers'. See sources for list of grouped cancers.

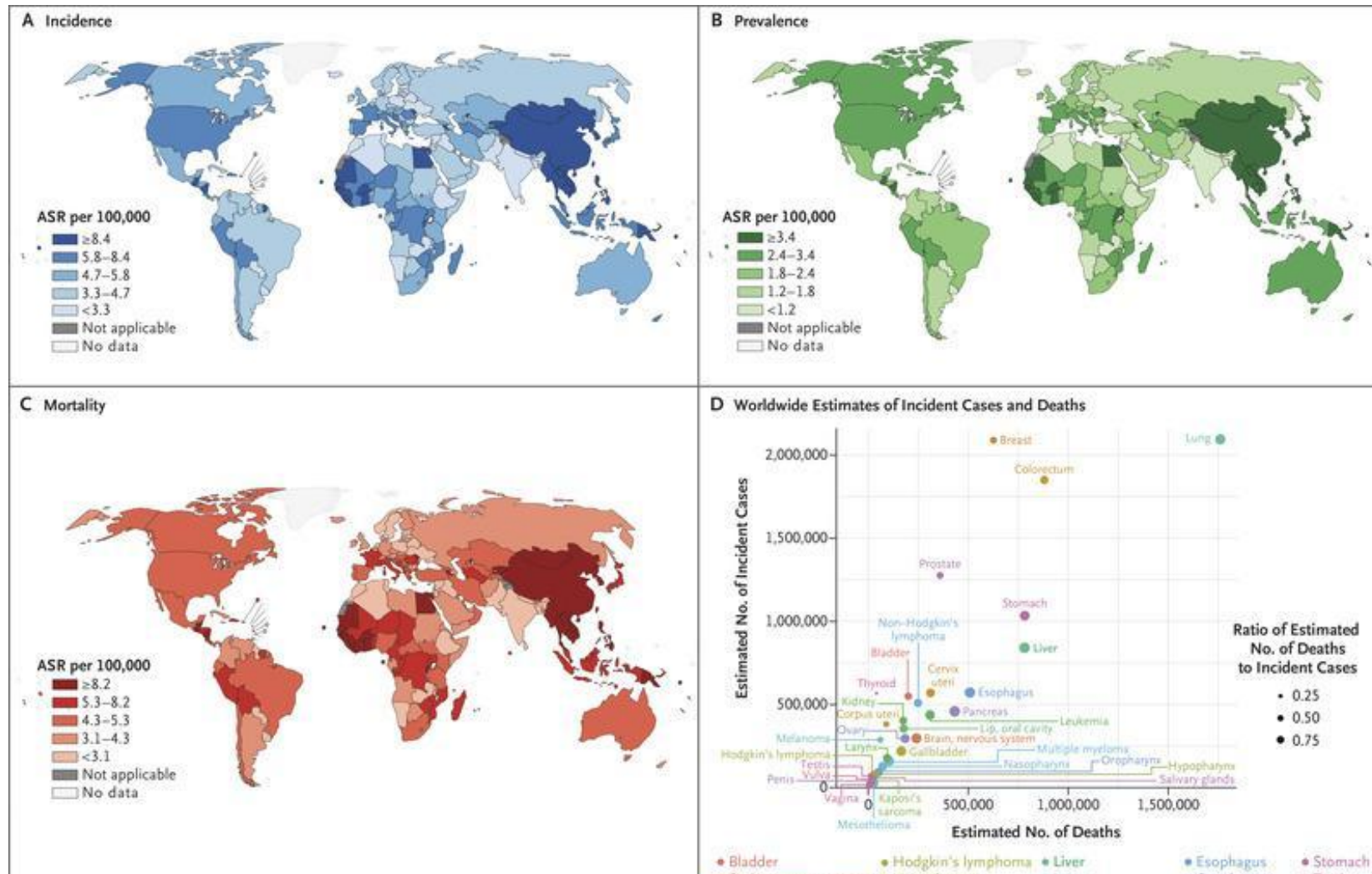


Source: IHME, Global Burden of Disease (GBD)

Note: All cancer types with less than 100,000 global deaths in 2016 into a collective category 'Other cancers'.

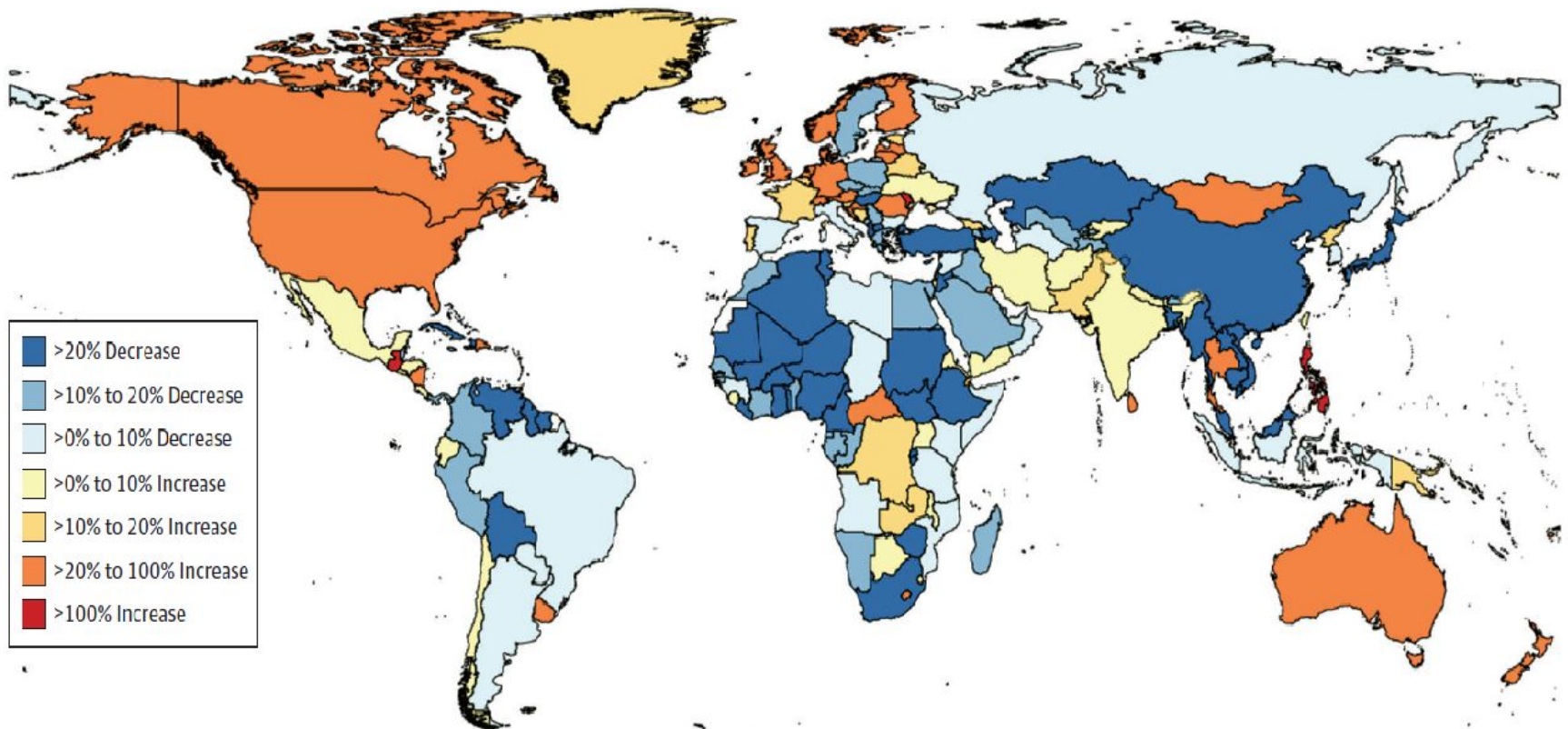
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Liver Cancer: National Trends



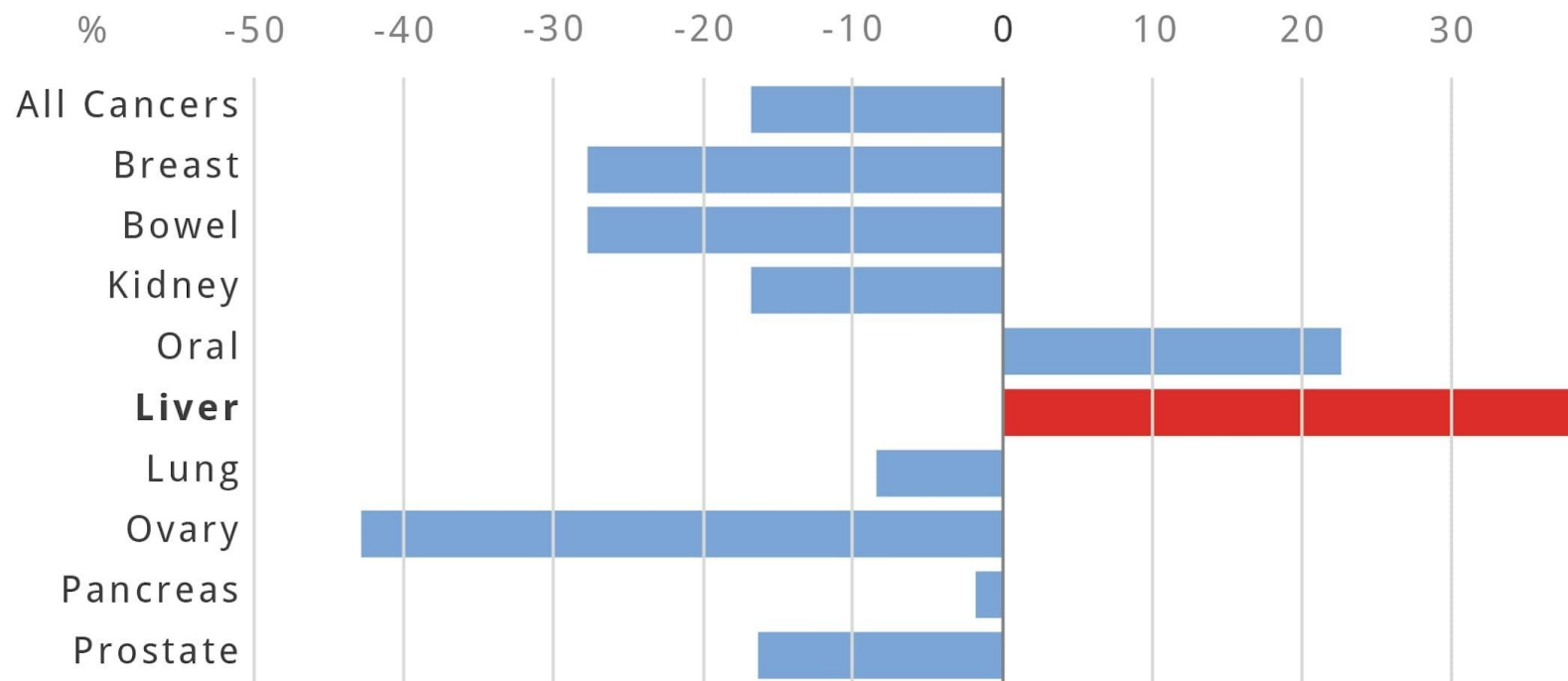
The trend is more concerning...

Figure 1. Relative Changes in Age-Standardized Liver Cancer Mortality Between 1990 and 2015 for Both Sexes in 195 Countries and Territories



PROJECTED CANCER MORTALITY RATES

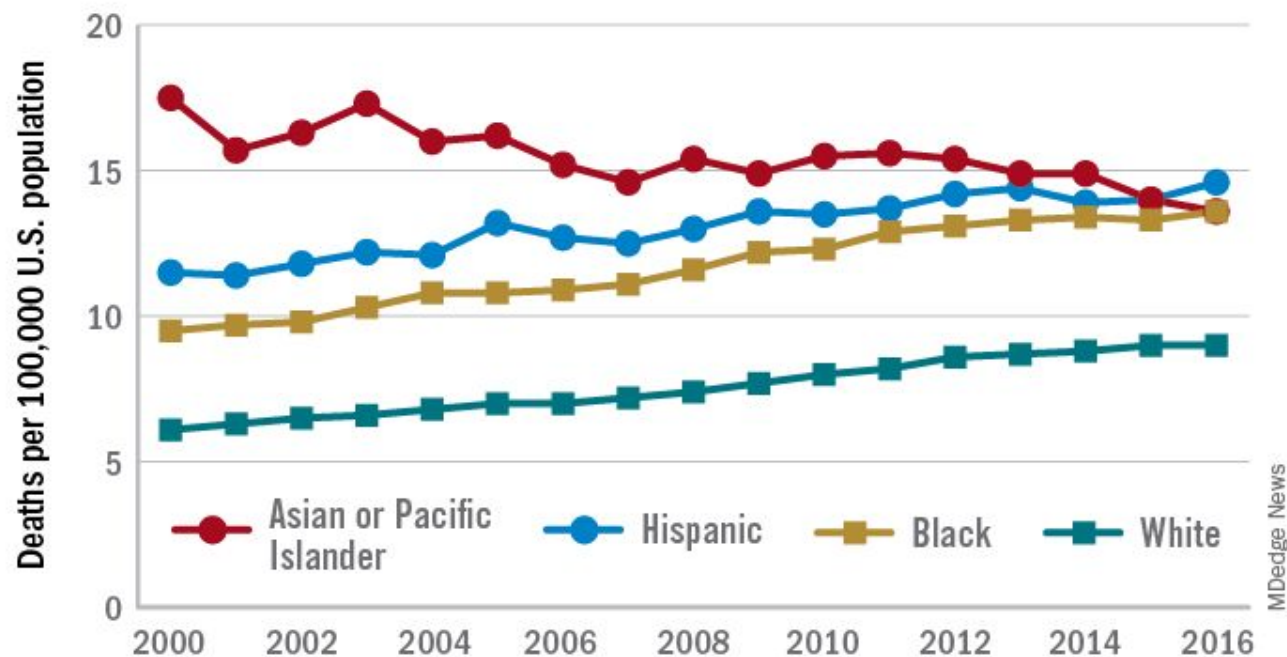
2010 - 2030



Source - Cancer Research UK

Liver Cancer: The growing burden in Arizona

Age-adjusted liver cancer death rate by race and ethnicity



Note: Based on data for adults aged 25 years and older from the National Vital Statistics System.

Source: National Center for Health Statistics

Impact on disability days / work



From: **The Burden of Primary Liver Cancer and Underlying Etiologies From 1990 to 2015 at the Global, Regional, and National Level: Results From the Global Burden of Disease Study 2015**

JAMA Oncol. 2017;3(12):1683-1691. doi:10.1001/jamaoncol.2017.3055

Table. Liver Cancer Incident Cases, Age-Standardized Incidence Rate, Deaths, Age-Standardized Mortality Rate, DALYs, and Age-Standardized DALYs, by Sociodemographic Quintile, Sex, and Region, 2015

Characteristic	Incident Cases, No. × 10 ³ (95% UI)	ASIR per 100 000, No. (95% UI)	Deaths, No. × 10 ³ (95% UI)	ASMR per 100 000, No. (95% UI)	DALYs × 10 ³ (95% UI)	Age-Standardized DALY Rate per 100 000 (95% UI)
Overall	854 (768-961)	12.8 (11.4-14.3)	810 (750-863)	12.1 (11.2-12.9)	20 578 (18 938-21 915)	292.1 (269.1-311.0)
Sociodemographic index						
Low	33 (27-40)	14.5 (11.5-17.1)	37 (30-44)	16.6 (13.2-19.7)	1183 (953-1408)	431 (347.8-513.1)
Low-middle	71 (62-85)	7.1 (6.2-8.3)	75 (66-88)	7.5 (6.7-8.7)	2099 (1822-2533)	179.9 (157.9-213.7)
Middle	283 (240-343)	15.6 (13.2-18.8)	287 (262-317)	15.8 (14.5-17.5)	7814 (7052-8674)	391.1 (354.4-433.3)
High-middle	235 (200-281)	13.7 (11.6-16.3)	250 (222-274)	14.5 (12.9-15.8)	6355 (5730-7013)	345.5 (310.9-380.6)
High	233 (214-255)	11.7 (10.8-12.7)	161 (155-167)	7.9 (7.6-8.2)	3116 (2984-3276)	166.4 (159.1-176.1)
Sex						
Men	591 (517-691)	18.6 (16.3-21.6)	577 (524-622)	18.2 (16.6-19.6)	15 413 (13 994-16 747)	448.5 (408.1-486.2)
Women	264 (227-314)	7.5 (6.4-8.9)	234 (204-255)	6.6 (5.8-7.2)	5165 (4465-5689)	143.9 (124.5-158.4)
Region						
Asia Pacific, high income	93 (80-112)	26.4 (22.9-31.1)	55 (53-58)	15 (14.3-15.7)	969 (920-1021)	307.9 (291.1-326.9)
Central Asia	5 (5-6)	8.6 (7.3-9.4)	6 (5-6)	9.4 (8.1-10.2)	154 (132-167)	219.5 (188.7-237.6)
East Asia	394 (317-499)	24.3 (19.6-30.9)	415 (376-458)	25.5 (23.2-28.1)	11 227 (10 203-12 494)	644.1 (584.3-715.0)
South Asia	43 (36-52)	3.9 (3.3-4.9)	45 (40-50)	4.1 (3.8-4.7)	1147 (1027-1280)	91.3 (82.2-102.1)
Southeast Asia	67 (55-79)	13.9 (11.3-16.3)	71 (58-80)	14.6 (12.1-16.5)	1860 (1497-2138)	334.3 (271.5-381.6)
Australasia	3 (2-4)	6.5 (4.8-8.7)	2 (1-2)	3.8 (3.4-4.2)	30 (27-32)	79.8 (72.3-86.8)
Caribbean	3 (3-3)	6.8 (6.0-7.9)	3 (3-3)	6.8 (6.3-7.3)	61 (55-66)	138.1 (126.3-150.1)
Central Europe	13 (11-15)	7 (6.1-8.1)	10 (9-11)	5.5 (5.1-5.7)	204 (190-214)	117.4 (109.1-122.9)
Eastern Europe	18 (15-24)	5.8 (4.8-7.4)	14 (13-15)	4.3 (4.0-4.6)	306 (280-329)	99.9 (92.2-107.0)
Western Europe	69 (60-83)	9 (7.9-10.4)	49 (46-51)	6.1 (5.8-6.5)	826 (772-868)	118.8 (111.3-124.9)
Andean Latin America	3 (2-4)	7.3 (5.8-8.7)	3 (3-4)	7.8 (6.4-8.7)	67 (55-75)	149.7 (122.8-167.4)
Central Latin America	12 (11-14)	6.7 (6.2-7.8)	13 (12-13)	7.3 (7.0-7.6)	268 (259-278)	138.6 (134.0-143.7)
Southern Latin America	4 (3-4)	4.9 (4.3-5.7)	4 (3-4)	5.1 (4.7-5.5)	69 (64-73)	98.6 (91.8-105.3)
Tropical Latin America	10 (8-12)	5.4 (4.6-6.8)	11 (10-12)	5.8 (5.4-6.7)	238 (220-277)	119.8 (110.8-139.0)
North Africa and Middle East	21 (18-23)	6.3 (5.5-6.9)	24 (21-26)	7.1 (6.3-7.8)	616 (502-683)	159.3 (133.2-176.0)
North America, high income	40 (33-52)	7.8 (6.5-9.7)	26 (24-26)	5 (4.8-5.2)	538 (512-560)	108.7 (103.5-113.1)
Oceania	1 (0-1)	10.8 (7.7-15.4)	1 (0-1)	11.4 (8.3-15.6)	20 (13-29)	276.5 (189.7-399.0)
Central Sub-Saharan Africa	7 (5-11)	16.9 (10.6-25.9)	8 (5-13)	19.9 (12.6-30.3)	234 (140-373)	460.1 (278.1-723.4)
East Sub-Saharan Africa	17 (13-21)	10.3 (7.9-12.8)	19 (14-24)	11.9 (9.0-15.0)	575 (433-750)	306.3 (231.1-396.2)
Southern Sub-Saharan Africa	4 (3-5)	8.6 (7.0-10.6)	4 (4-5)	9.5 (7.9-11.4)	114 (94-145)	218.3 (180.6-272.1)
West Sub-Saharan Africa	29 (22-39)	16.9 (13.0-22.4)	31 (24-41)	18.1 (14.1-23.4)	1055 (804-1422)	483.9 (372.3-640.7)

Abbreviations: ASIR, age-standardized incidence rate; ASMR, age-standardized mortality rate; DALY, disability-adjusted life-year; UI, uncertainty interval.

Liver Cancer Incident Cases, Age-Standardized Incidence Rate, Deaths, Age-Standardized Mortality Rate, DALYs, and Age-Standardized DALYs, by Sociodemographic Quintile, Sex, and Region, 2015Abbreviations: ASIR, age-standardized incidence rate; ASMR, age-standardized mortality rate; DALY, disability-adjusted life-year; UI, uncertainty interval.

So Overall...

- Liver cancer incidences are up trending worldwide and regionally.
- It tends to be more fatal than most other cancers.
- Has a significant impact on days off / disability / work years lost

The combination of these factors demands a stronger focus on prevention and treatment.

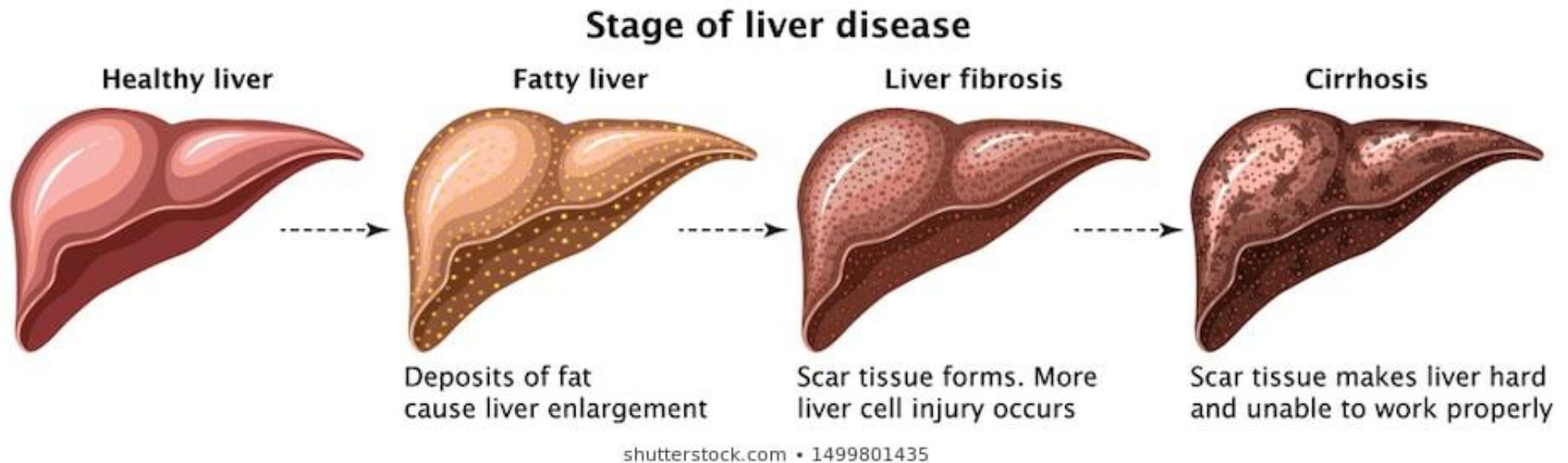
Causes of Liver Cancer

You can't really know where you are
going until you know where you
have been.

— *Maya Angelou* —

Causes of Liver Cancer

- Patients with **cirrhosis** from any reason
- 1/3rd of patients present with cirrhosis

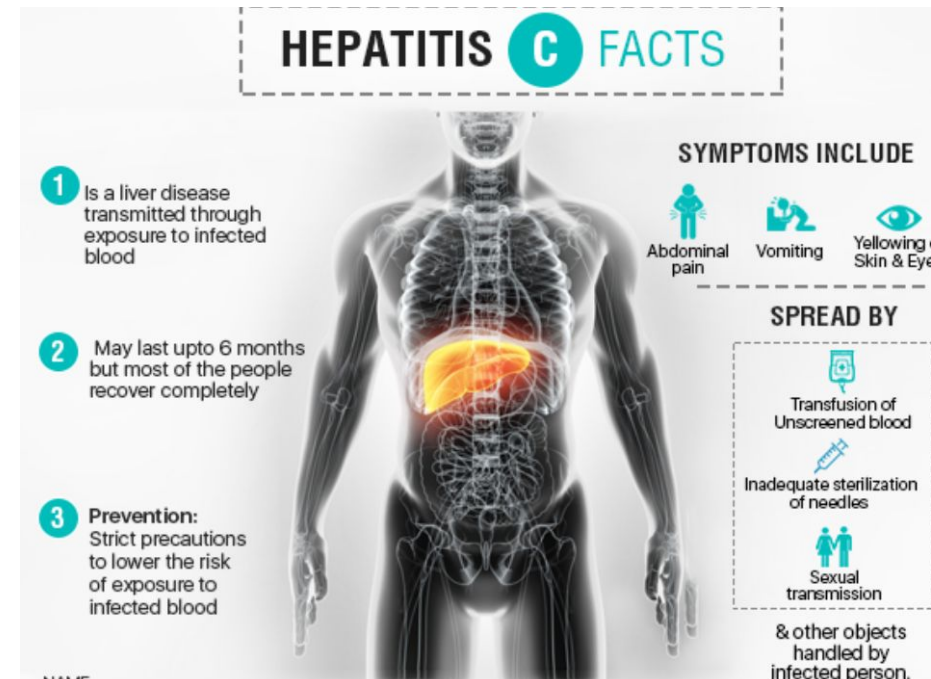
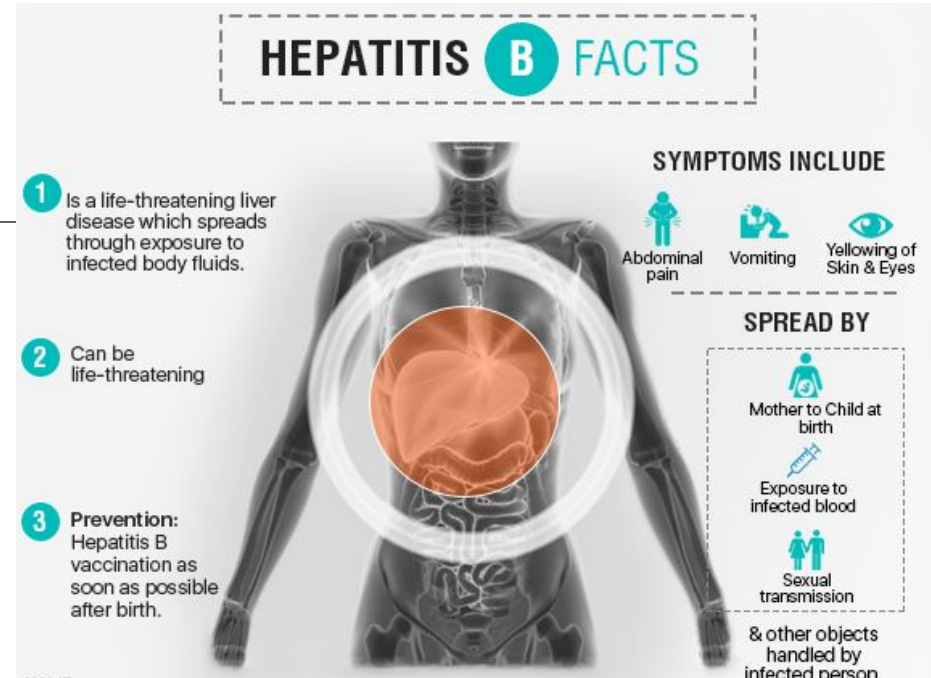


Causes of cirrhosis and hence cancer

- Alcoholic liver disease: direct toxin + with other factors
- Hepatitis B
- Hepatitis C: 1/3rd of cases of HCC in USA
- Hemochromatosis
- Non-alcoholic steatohepatitis (NASH) “fatty liver”
- Less common...
 - Exposure to arsenic
 - Anabolic ‘muscle building’ steroids
 - Aflatoxin – mold in grains

Hepatitis B / C

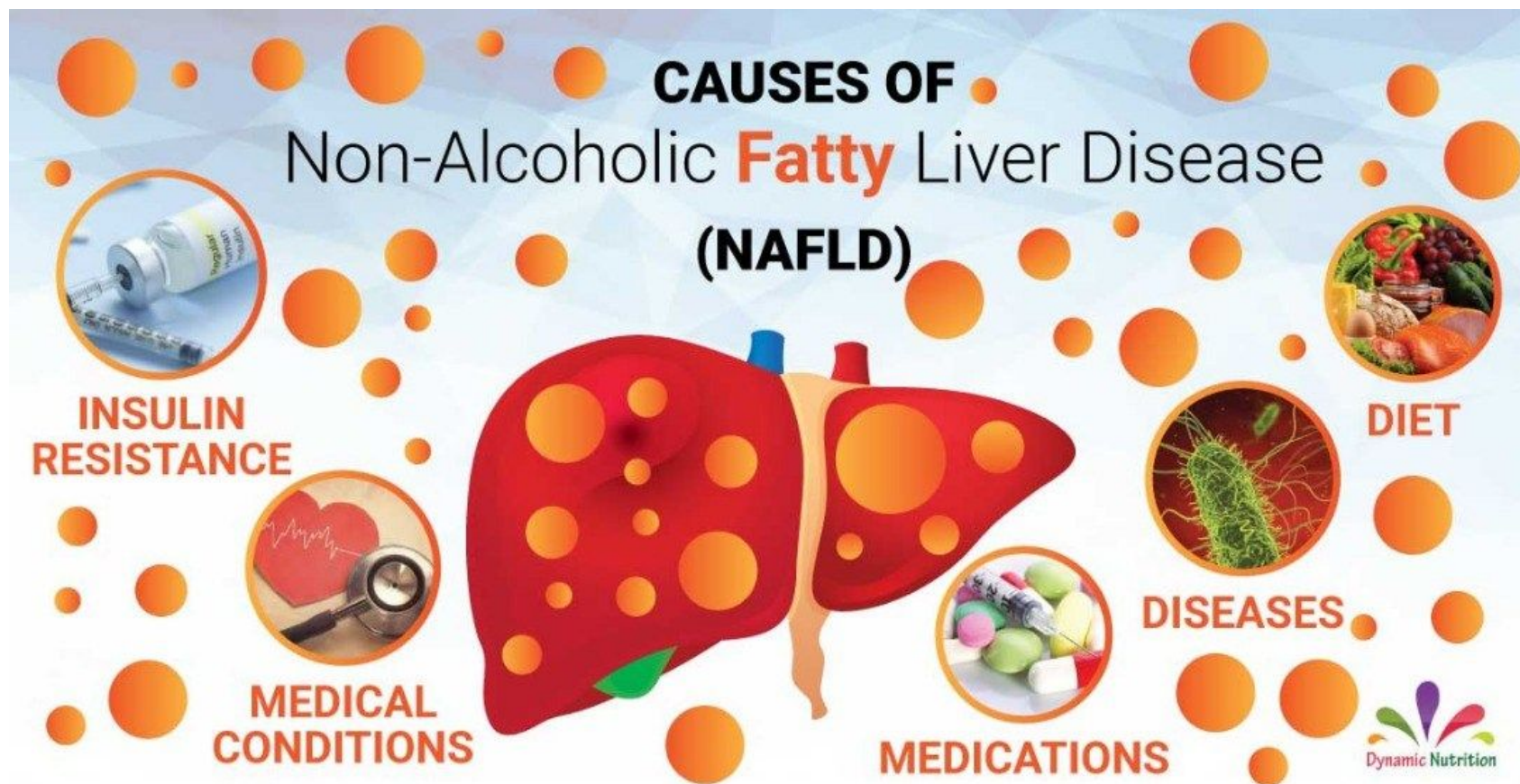
- 80% of cases worldwide
 - Unprotected sex
 - Sharing unsterilized needles
 - Blood transfusions (prior to 1992)
 - Develops slowly over 2-3 decades



Alcoholic Liver disease



Fatty Liver - Triglycerides accumulate in liver and lead to inflammation and then scarring.



Risk factors: Obesity, Type 2 diabetes, metabolic syndrome (high blood sugar, extra body fat around waist, abnormal cholesterol levels)

Understanding Fatty Liver

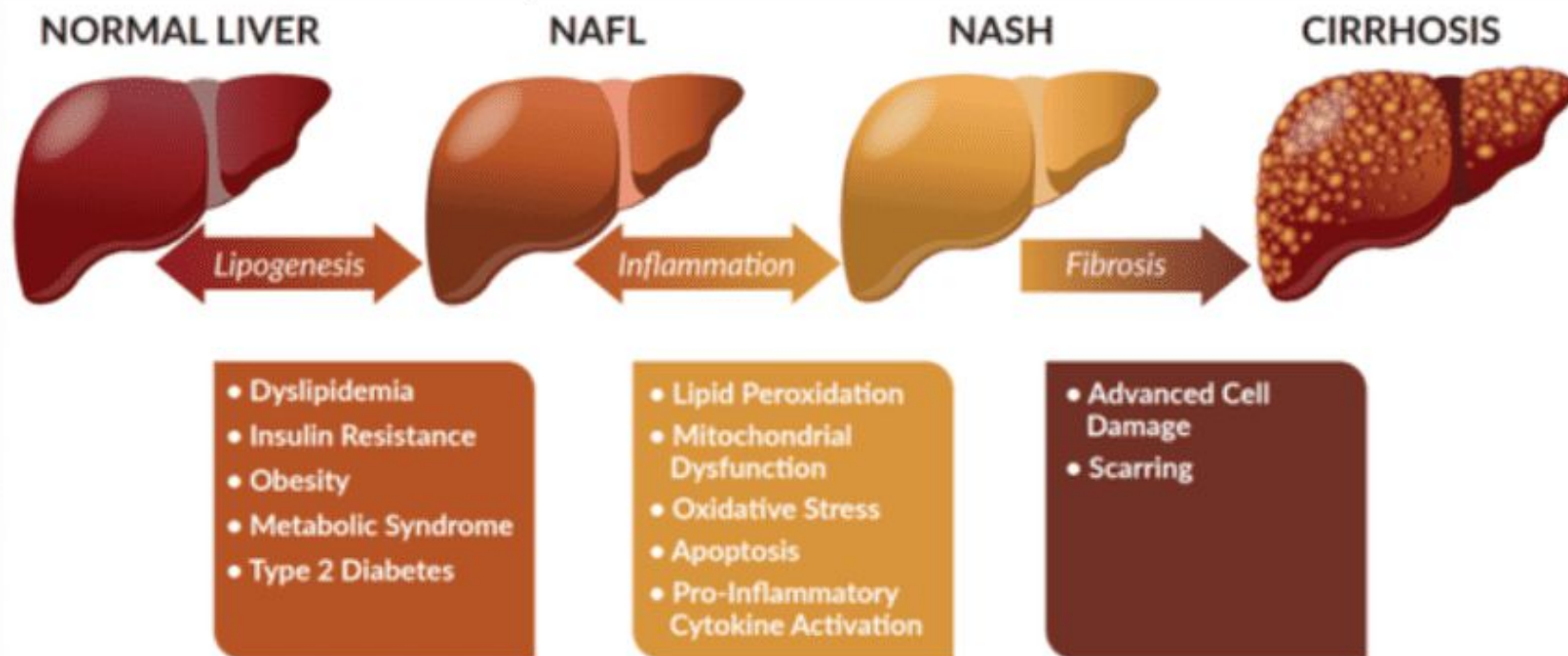
Fatty liver disease occurs when there is **abnormal amounts of fat in the liver**, which is called **steatosis**. If you have fat in your liver but no other damage, you are thought to have nonalcoholic fatty liver disease.

If left untreated, inflammation and liver cell damage can occur, causing a disease called nonalcoholic steatohepatitis (NASH).

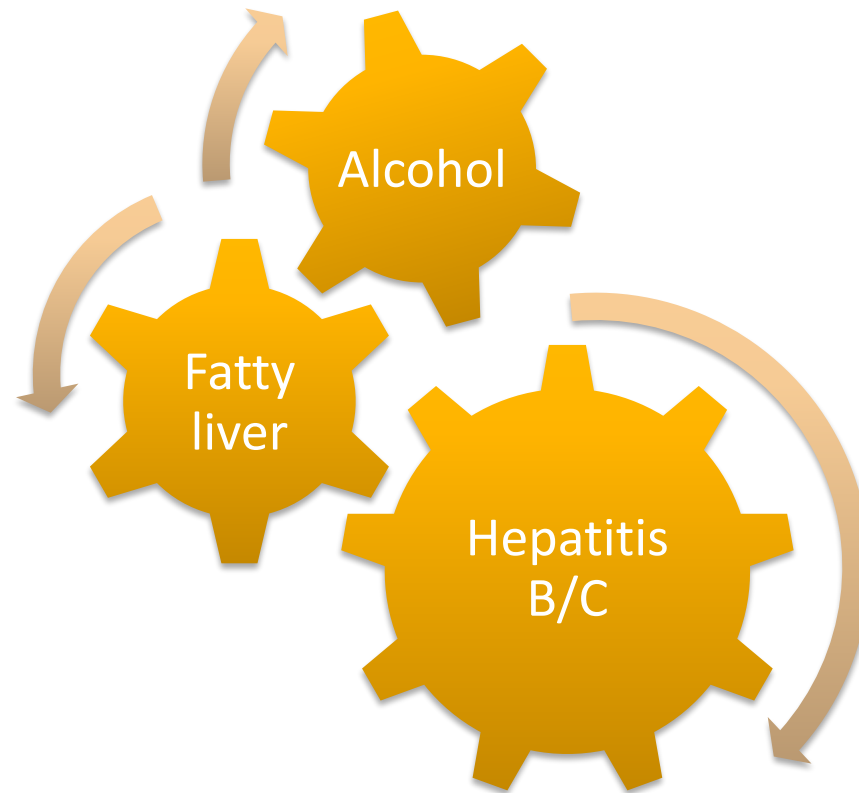
NASH is associated with cirrhosis, end-stage liver disease, and liver transplantation, and is often associated with cardiovascular-related diseases.

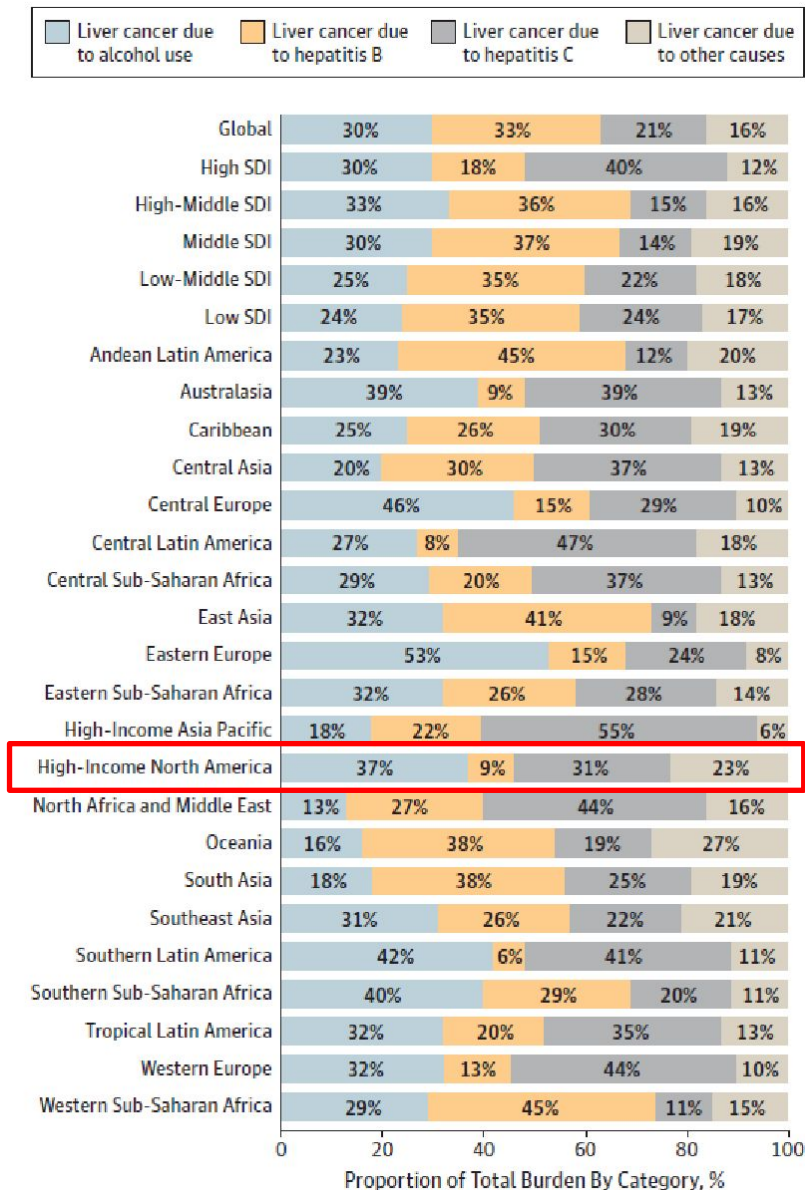
UNDERSTANDING

Fatty Liver Disease



In many patients all work together to cause cancer





Cirrhosis- and HCC-related mortality rates increased between 2007 and 2016 in the US.

Mortality rates for ALD/NAFLD-cirrhosis and HCC have continued to increase, while HBV-cirrhosis-related mortality declined during the 10-year period.

Importantly, minorities had a disproportionately higher burden of ESLD-related mortality.

Rising trend of fatty liver as cause of Hepatocellular carcinoma (HCC)

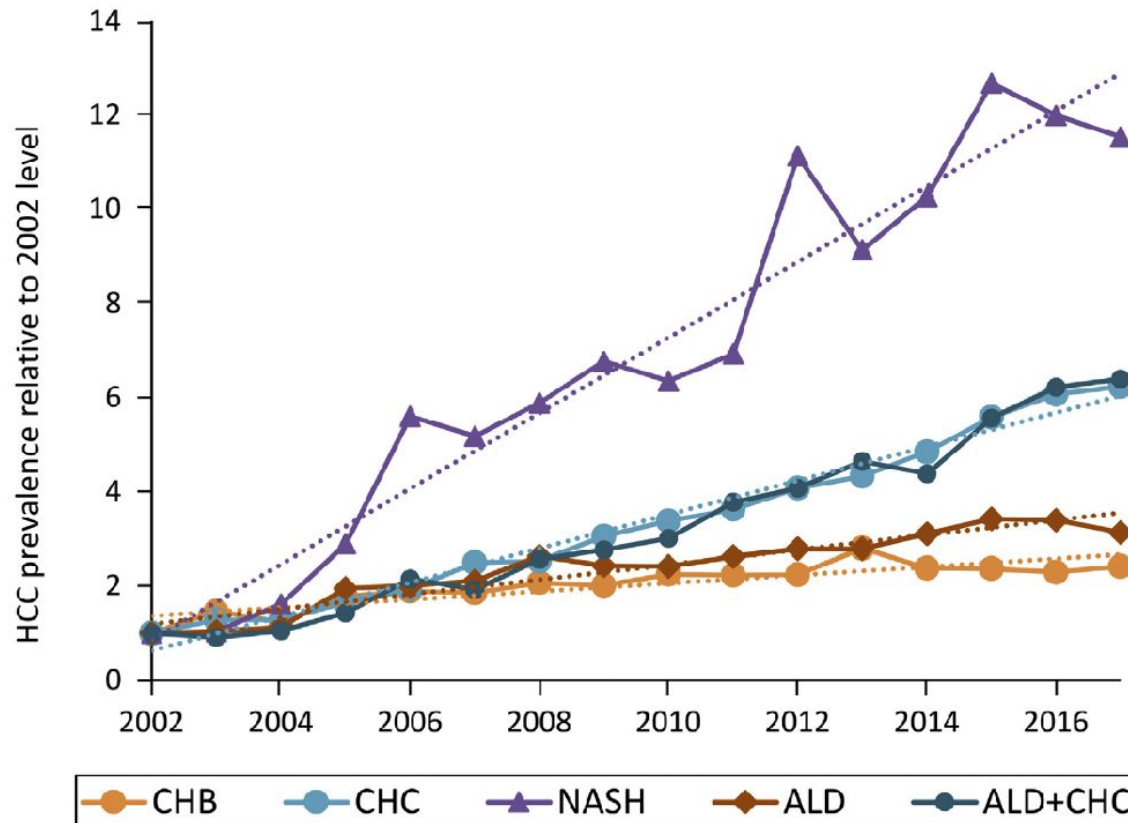
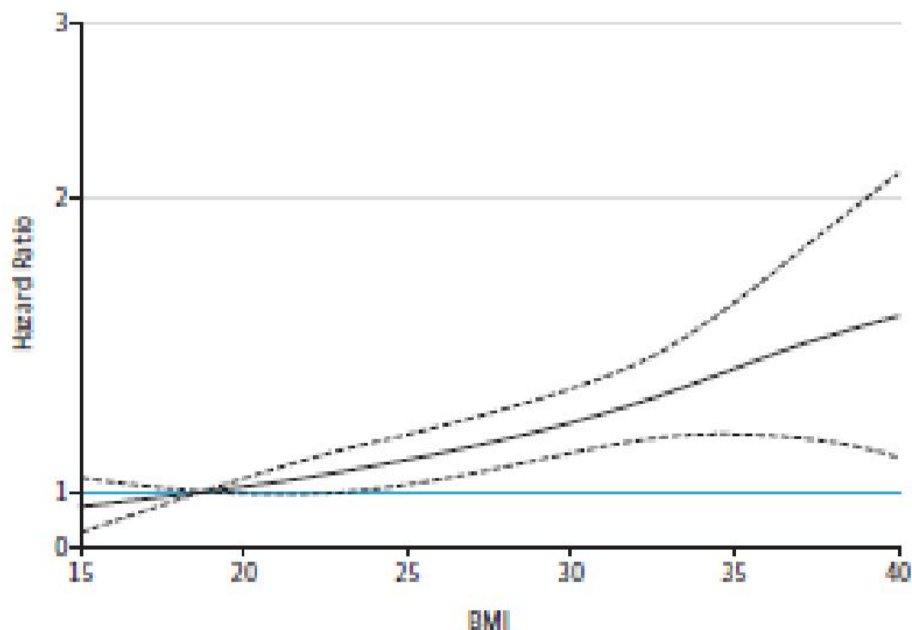


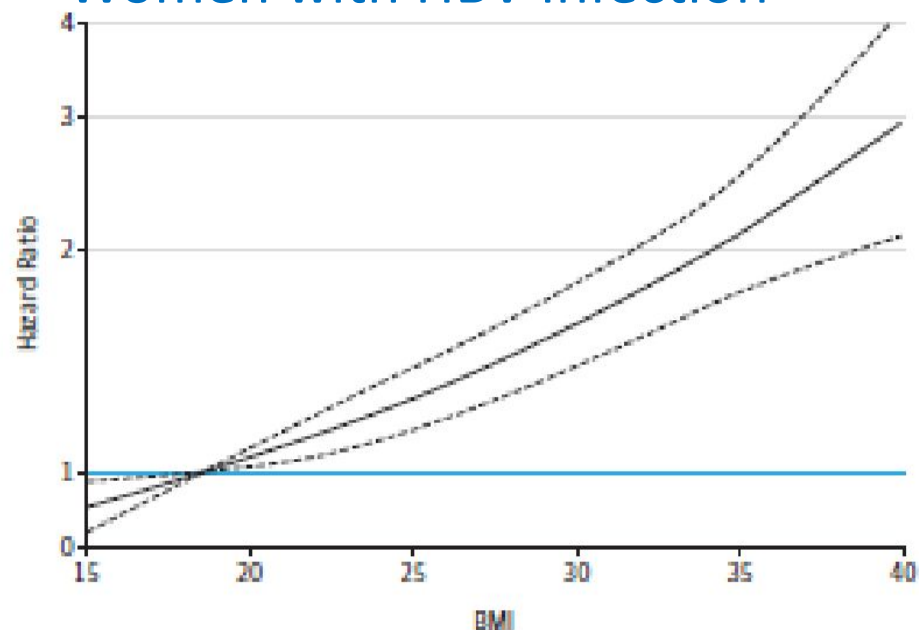
Figure 1. Prevalence of HCC in waitlisted candidates by etiology relative to that in 2002. *Dotted lines* represent linear trends.

Relationship between BMI and HCC in individuals with Chronic HBV Infection

Men with HBV Infection



Women with HBV Infection



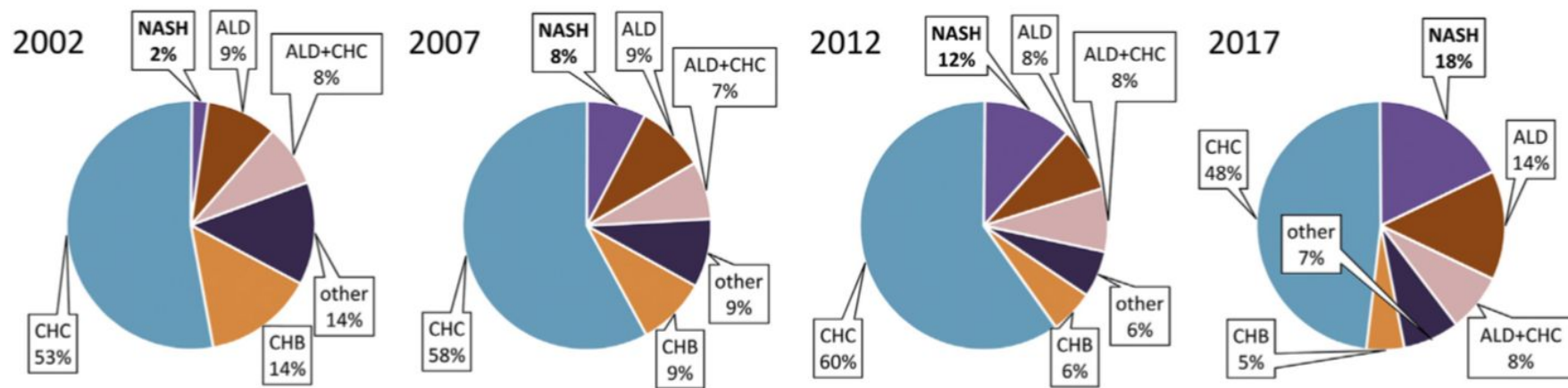


Figure 3. Etiologies of HCC in waitlisted candidates (with available HCC etiology).

So ..

- Cirrhosis leads to higher chance of getting HCC
- Alcohol and Hepatitis viruses remain the main causes in Northern America
- However, obesity and fatty liver trends are an area of growing concern

Management of Liver Cancer..... and the liver





Prevention is the
daughter of intelligence.

Walter Raleigh

“ quote fancy

Hepatitis Viruses (B and C)

- Screening for Hepatitis B and C with bloodwork
- Immunizations for Hepatitis B (even in patients with Hep C)
- Treatment of Hepatitis C for elimination of the virus
- Treatment of Hepatitis B for control of the virus
- Surveillance for cirrhosis with CT, MRI or US

Who should be screened for Hepatitis C

The CDC recommends that you get tested for HCV if any of the following are true:

- You were born from 1945 through 1965 (this is because most of the people in the US that are infected with HCV were born in these years)
- You ever injected drugs (even just once or a long time ago)
- You needed medicine for a blood clotting problem before 1987
- You received a blood transfusion or organ transplant before July 1992 (when blood and organs started being screened for HCV)
- You were or are on long-term hemodialysis
- You are infected with HIV
- You might have been exposed to Hepatitis C in the last 6 months through sex or sharing needles during drug use

Alcoholic Liver disease and HCC

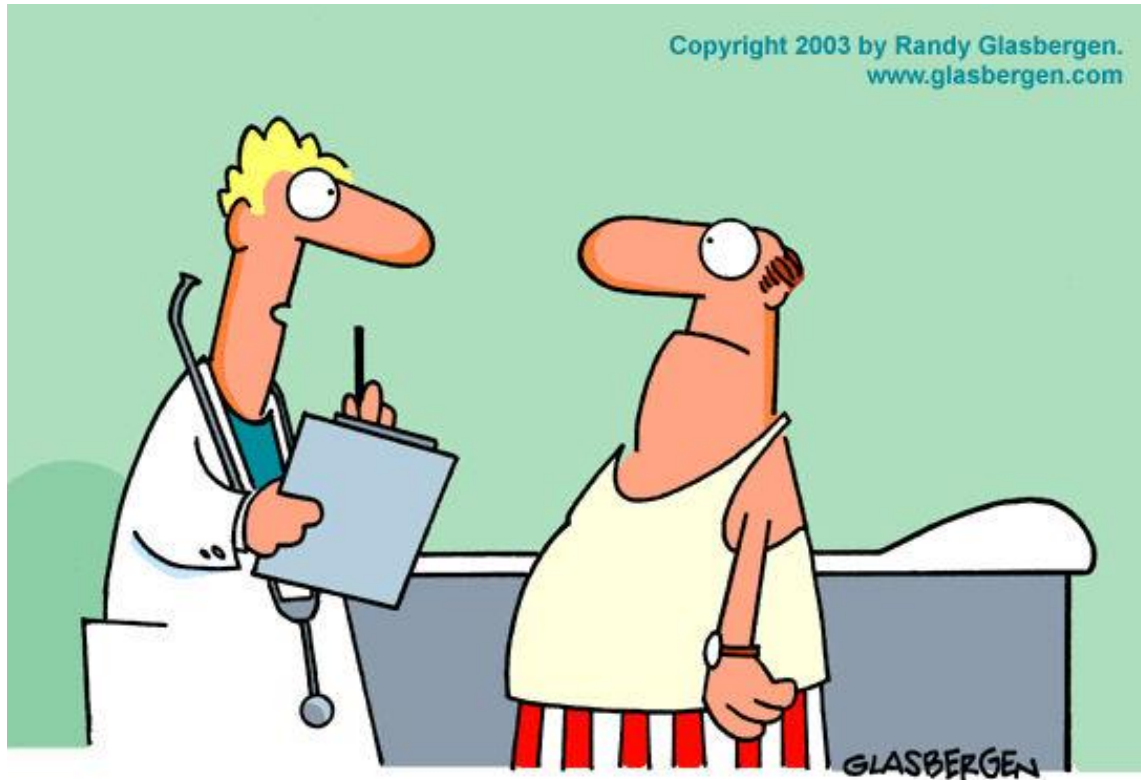
- Limiting alcohol intake
 - Men: 4/14
 - Women: 3/7
- Smoking cessation



What to eat if concerned about Fatty Liver



Controlling Fatty Liver: Exercise



“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”

If you have Cirrhosis...

- Screen every 6 months: MRI abdomen or US liver
- Screen every 6 months: Alpha fetoprotein level
- Follow up with a dedicated Liver team





























It is important to screen for Hepatocellular carcinoma cancer (HCC)


**The wellness and prevention
market will outgrow the
health care market.**

Leroy Hood

Create Awareness

Calendar of Cancer Awareness Months

January	February	March	April
 Cervical Cancer	National Cancer Prevention Month  Gallbladder/Bile Duct Cancer	 Colorectal Cancer  Kidney Cancer  Multiple Myeloma	 Testicular Cancer  Esophageal Cancer  Head & Neck Cancer
May	June	July	August
 Melanoma and Skin Cancer  Brain Cancer  Bladder Cancer	 National Cancer Survivor Month	 Sarcoma/ Bone Cancer	
September	October	November	December
 Childhood Cancer  Uterine Cancer  Leukemia  Lymphoma  Ovarian Cancer  Prostate Cancer  Thyroid Cancer	 Breast Cancer  Liver Cancer	 Pancreatic Cancer  Lung Cancer  Stomach Cancer  Carcinoid Cancer  Honoring Caregivers	 CHOOSE HOPE® WE'RE IN BUSINESS TO END CANCER 1-888-348-HOPE www.choosehope.com

- Choose a different cancer every quarter
 - National advocacy groups can provide 'fact sheets'
- 
- Get an expert to give a quick webinar or presentation
 - Link employees to resources in the community

What can employers, health and benefits staff do?

- Educate staff about health insurance offerings.
- Insurance Premium credits for health lifestyle (non-smoker, exercise, BMI)
- Develop team building events that address Liver cancer and other liver-disease risk factors
- Host weight loss challenges and educate about the importance of a healthy diet and lifestyle
 - Happy hours don't always need alcohol : Skipping it once –creates an awareness
 - Host employee screening events for Hep B / C
- Encourage annual physicals and routine follow-up for all employees

Thank You!

For more information about cancer prevention,
treatment, screening, or to request a speaker for your
worksite on any cancer-related topic,
call: 602.699.3366





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**THANK YOU
FOR WATCHING!**