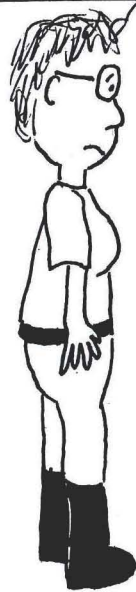


CHAPTER 2:

Hepsie
the Wonder Liver

I arrive at the sushi place first
and hesitate over the happy hour
menu. The only Action Item the
nurse practitioner has suggested
so far is "Avoid ALCOHOL".

The only thing I want in
the world is a drink.





My decades-old linguistics degree kicks into high gear, dissecting the semantics of this word.

AVOID.

Is avoid different than forgo, cease, renounce?

AVOID.

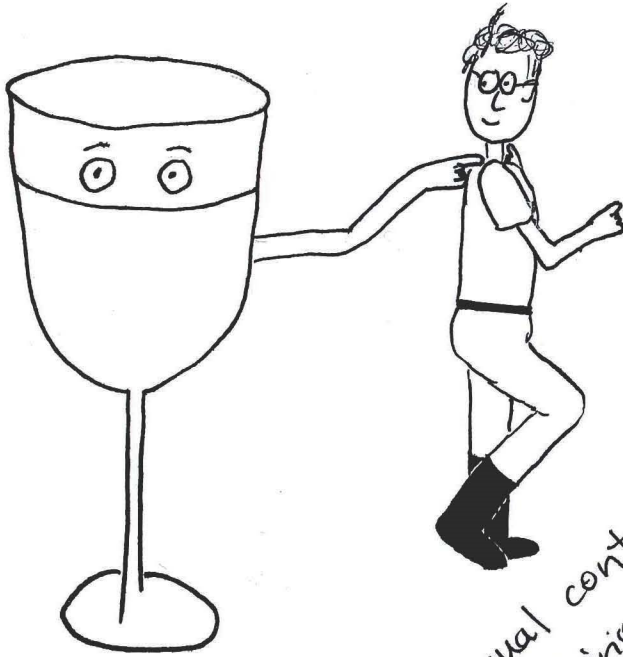
Keep away from.
Give a wide berth to.
Steer clear of.

Avoid suggests care & reason,
but not quite finality.

Avoid. Not abstain.



What about just a casual encounter?
What if I don't initiate, just reciprocate?



"Hepatitis C cannot be spread by casual contact, such as hugging, kissing, coughing, or sharing utensils or drinking glasses."



It is amazing how quickly you can become an expert in something you've hardly even heard of. Up through May 25, 2015, I barely had a clue what the liver does, much less hepatitis.

Here's what I know by 5pm on May 26. **Happy Hour!!!**

Almost everything that goes into your body travels through your liver. It is a filter, taking out nasty stuff before your blood moves on down the road.

I think I'm starting to feel a dull ache in my left side. Until a friend tells me the liver is on the right.

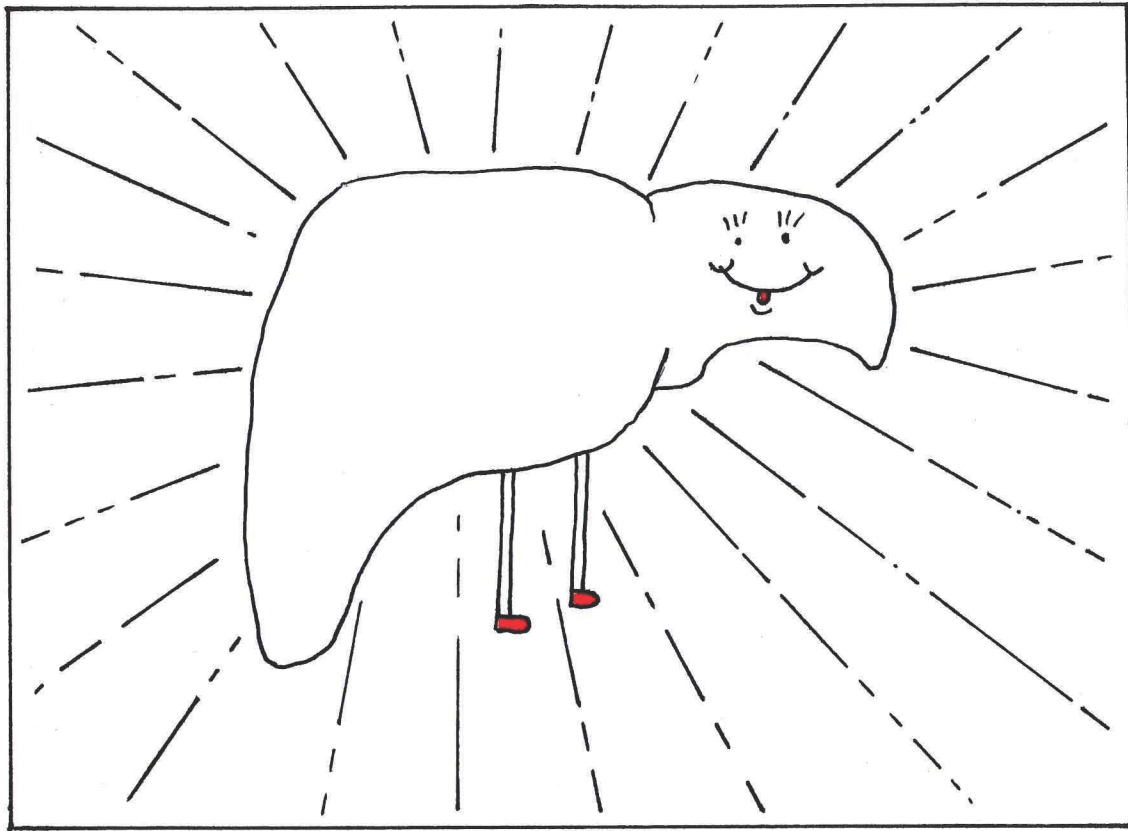


Your liver also assists in digestion, produces hormones, and synthesizes proteins (all stuff that is critical to your biochemical survival).

The liver breaks down alcohol, it removes toxins (such as...alcohol), it even takes dead blood cells and reprocesses them.



Your liver is a washing machine,
a savior, a sieve. Cleaning up
after all your mistakes. Absolving
your lost weekends and sleepless nights.



This is an
artists rendering
of my liver.

Her name is
Hepsie.

Hepsie the
Wonder Liver.

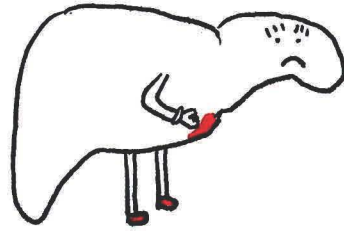
Thank you, Hepsie.

Please take a moment now
to thank your liver.

...I'll wait.

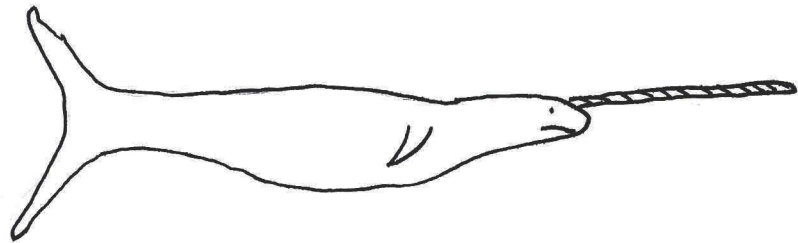
"Hepatitis" just means
"liver inflammation."

hepa- = liver
-itis = inflammation.



Inflammation is your body's response to attack. Swelling, redness, and irritation as your immune system acts up to defend you, and replace damaged cells with healthy ones.

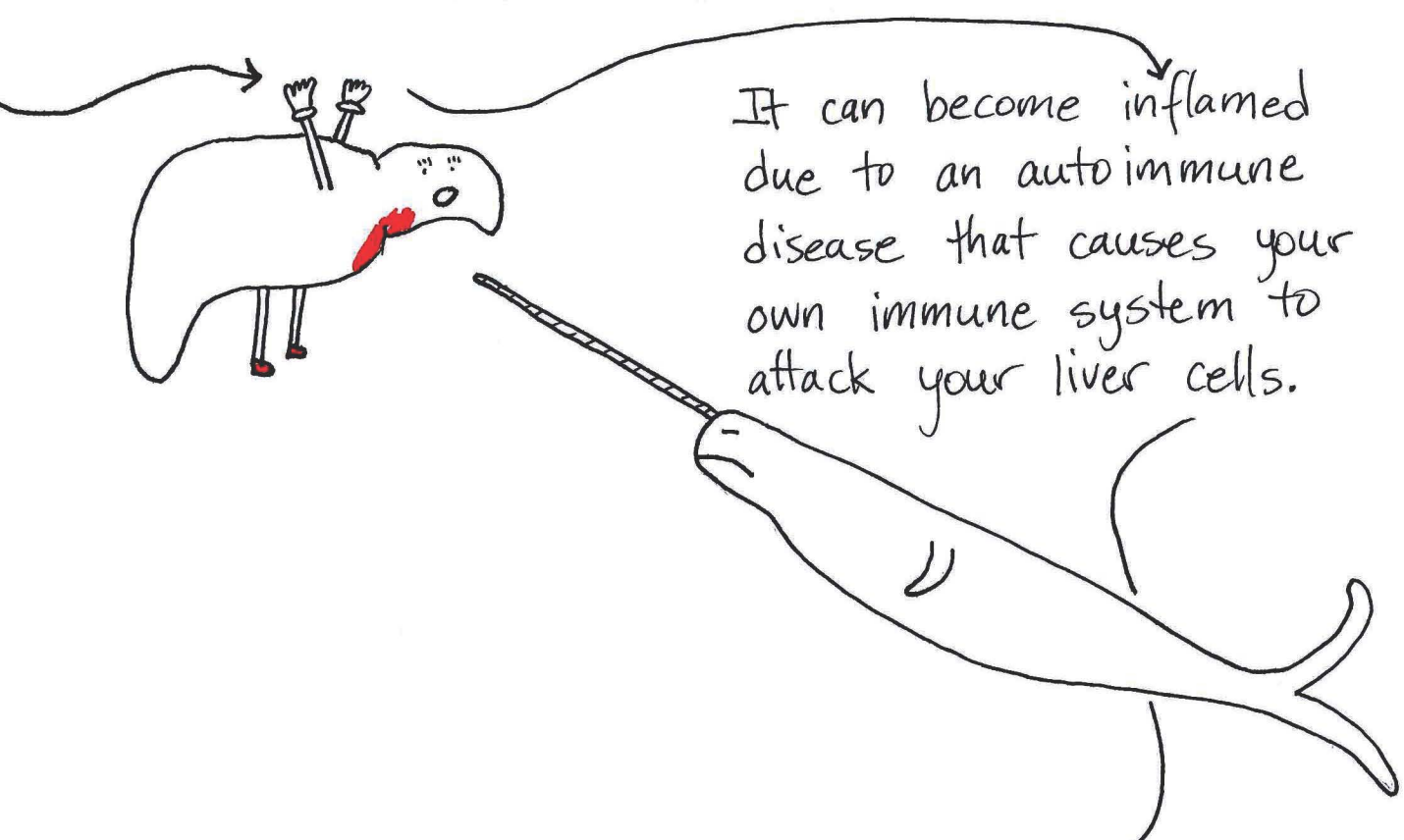
I imagine my immune system as a narwhal - magical, built for defense and whimsy, and somehow real.



AVOID
INDUSTRIAL
SOLVENTS



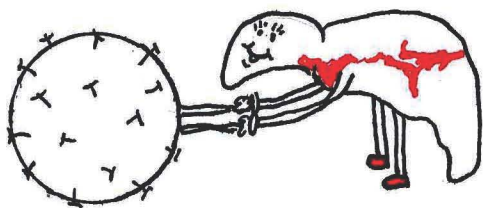
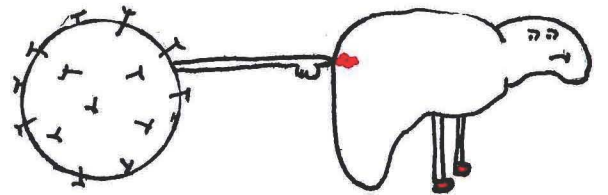
Your liver can become inflamed due to toxins, which includes everything from industrial solvents to too much beer.



It can become inflamed due to an autoimmune disease that causes your own immune system to attack your liver cells.

It can become inflamed due to foreign invasion.

Such as by a virus.



"...Cannot be spread by casual contact such as hugging, kissing, coughing or sharing utensils or drinking glasses..."

AVOID VIRUSES

Hepatitis C is the name of one virus that attacks your liver and leads to inflammation. There are five or six viral hepatitises: A, B, C, D, E, and G. Each one affects the body differently.

(the plural of 'hepatitis!' Delightful.)



When one of my friends searches for hepatitis on WebMD, she texts me, "I wish you had A!"

I imagine hep A causing shiny hair, a sexy rasp in your voice, and maybe a touch of sweaty palms. Perfect vision. Ideal weight.

I don't know why there's no hepatitis F. As I write this, I find out G may not technically be a hepatitis. The virus-formerly-known-as-hep-G, now-more-commonly-known-as GB virus C, does not actually invade the liver per se, or even harm humans at all.

But.



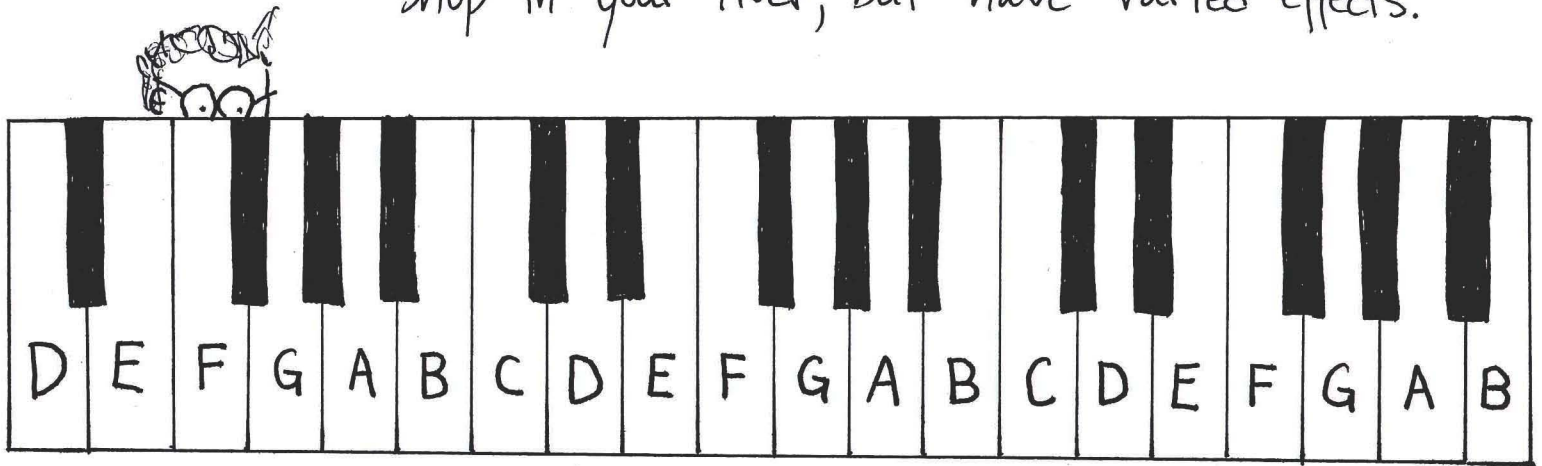
I wish there were seven hepatitises, A through G. No more, no less.

↳ Why?

I personally like the concept of seven hepatitis viruses because it would set up a tidy metaphor using the musical alphabet - with seven notes, A through G.

Then, I could write the names of the hepatitides on a piano keyboard for you, and say:

"Pushing any key on the piano causes a hammer to hit a string, but each makes a different sound. Similarly, all of the hepatitis viruses set up shop in your liver, but have varied effects."



For this important scientific reason, I will continue my false claim that there are seven viral hepatitides, A through G.

NUMBERS TIME!



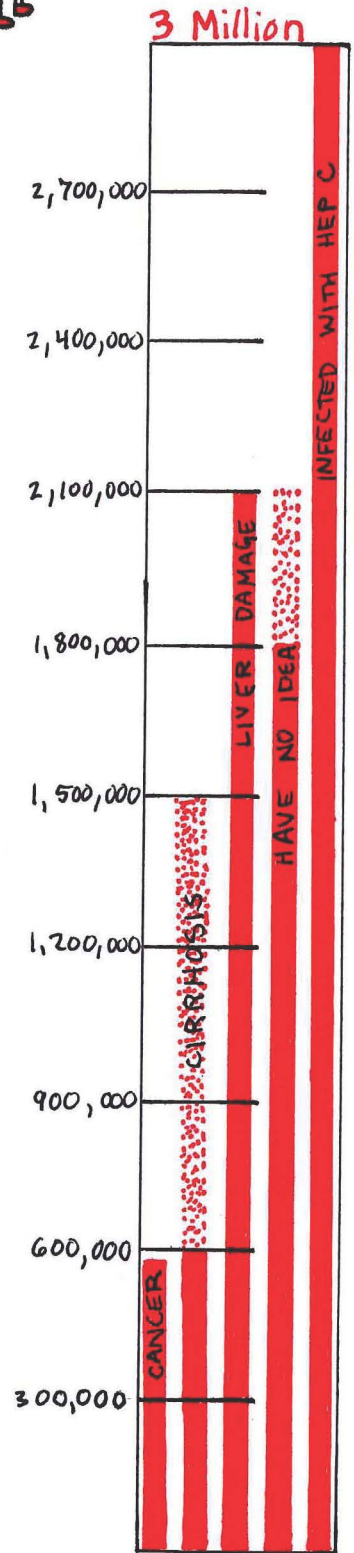
You can be infected with hepatitis C, or any other of the 7 (lies!) hepatitis viruses, and not yet have liver inflammation. Just like you can drink heavily for decades and not yet have cirrhosis.

Eventually though, **70%** of hepatitis C carriers show "signs of liver damage."

20-50% develop cirrhosis.
11-19% get liver cancer.

this range is disturbingly non-specific.

The Centers for Disease Control (CDC) estimates that 3 million people in the US have hep C, and among them, **60-70%** have no idea they have it.





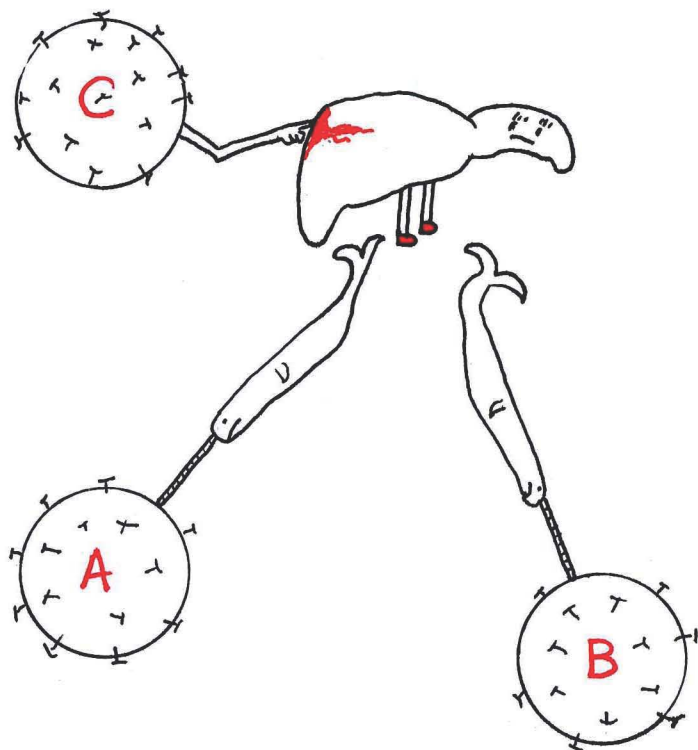
More people are now dying annually of hep C in the US than of HIV/AIDS.

The casualties are expected to grow, because most people have no symptoms and feel well until it is too late.

Scientifically speaking: This sucks.

If you discover there is a thing attacking your liver, one of your major life goals becomes preventing any other things from joining that fight.

There are vaccines against hep A + B (though not for C), so soon I'll need to get those shots. Although I have no risk factors for contracting A or B, I clearly managed C somehow. It's best to ensure



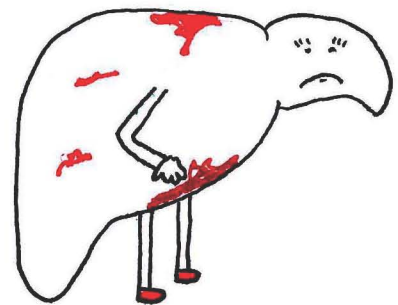
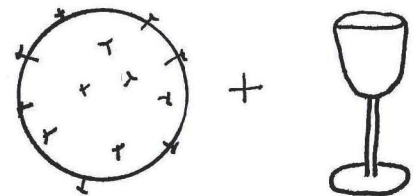
no other heps get in there.

So... why can't I have one lousy drink to soften the blow of today?

First: Because alcohol would be a second thing attacking Hepsie.

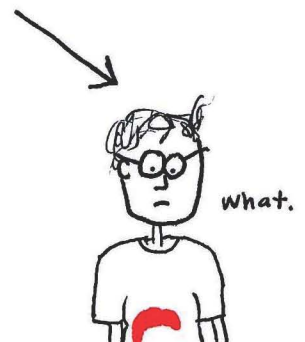
Second: Because alcohol may help hep C carry out its one & only function: to replicate itself using liver cells.
hepatocytes!

To recap so far:
Hepatitis just means liver inflammation, from any cause. Hepatitis C is one virus that causes hepatitis. Alcohol exacerbates both hepatitis and Hepatitis C. This may be worse news than having hep C.



What's more.

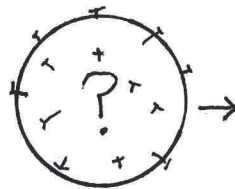
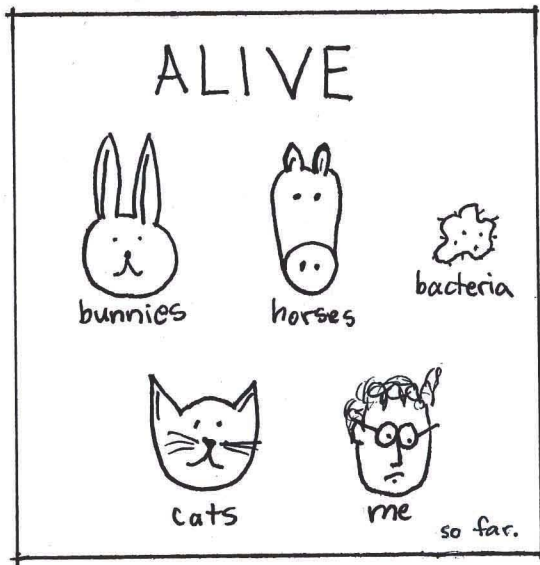
+
The thing attacking my liver isn't even alive.



"Life" is hard to define.

But biologists tend to agree that something is alive if:

ARE YOU ALIVE ELIGIBILITY		Yes	No
Do you take in and use energy?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you regulate yourself internally?	<input type="checkbox"/>	<input type="checkbox"/>	
Are you organized at a cellular level?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you grow?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you adapt to change?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you respond to external stimuli?	<input type="checkbox"/>	<input type="checkbox"/>	
Can you reproduce?	<input type="checkbox"/>	<input type="checkbox"/>	



The only thing a virus clearly does that fits these "is it alive?" criteria is reproduce.

And reproduce.

And reproduce.

But... it can't even reproduce on its own.

In order to replicate, a virus (such as hep C) needs to invade and use the cells (such as liver cells) of something that is living (such as me). so far.

SIDENOTE!

As if you aren't getting enough Science from me, here's a PSA:

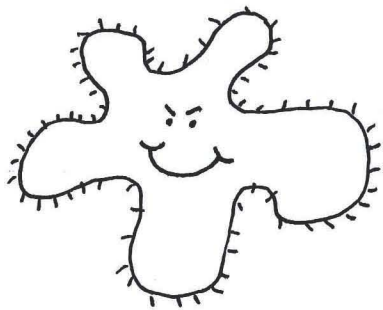
The Common Cold you get may be caused by a bacteria or a virus. Antibiotics only work against bacteria -- microscopic living things. If you have a cold virus, taking an antibiotic will do you no good.

In fact, it may do you harm, by making other bad bacteria grow stronger, and killing off good bacteria your body needs to stay healthy. Over-taking ^{or mis-taking} antibiotics can also train bacteria to become drug-resistant, leading to super bugs that will kill us all.

When you have a cold, do not demand antibiotics right away. Just Stay home. Fluids. Rest. Soup. You need to catch up on Netflix anyway.



OR



BUT



Your body is built based on your DNA.

→ deoxyribonucleic acid!

If you must know...

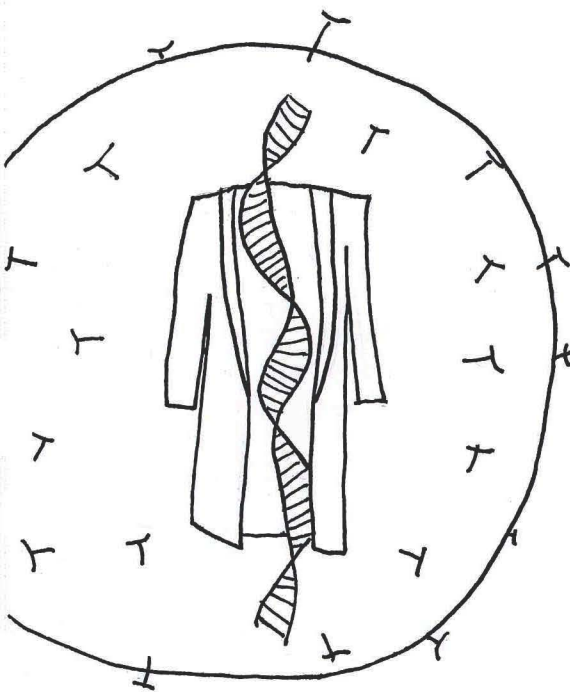
DNA is a double-stranded piece of nucleic acid that provides a template for building all the amino acids that make up all the cells that make up you.



According to Ben Folds (who is, like me, a piano-based scientific authority), your cells are replaced every seven years. To do this, your DNA unwinds and is copied within its parent cell. The cell then divides, and each child cell takes its own DNA copy, which will later tell those cells how to replicate + then divide.

I am oversimplifying here. But, as is usually the case when I oversimplify, you're welcome.

Your cells contain your DNA, plus all of the pieces needed for cells to survive & thrive, as well as the mechanics needed to copy that DNA.



Viruses, on the other hand, contain only genetic material - either DNA or RNA - plus a protein coat, and sometimes a lipid shell.

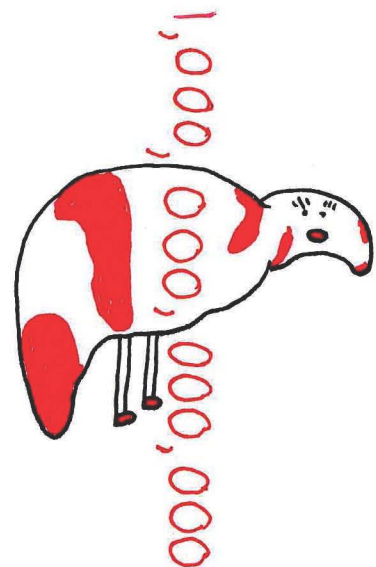
→ ribonucleic acid! (a single strand)

Viruses don't have the machinery to "live" or replicate on their own.

They're JUST genetic codes with a bit of clothing, and that's it.

They must use a host's cells to reproduce, and they tend to have favorites when it comes to mooching.

Hep C's fave place to replicate is inside hepatocytes - AKA liver cells. If you have hep C, the virus - the tiny piece of genetic material - enters your liver cells, takes over your own cells' replication mechanisms, and makes copies of itself. At the rate of a trillion times a day.



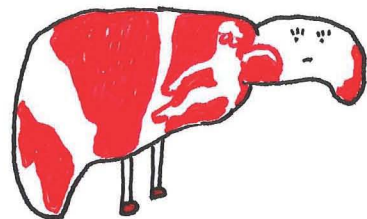
A trillion times a day.

Let's review again.

Hep C is a non-living, non-agentive, intention-less strand of ribonucleic acid that uses my liver cells to copy itself one trillion times a day.

You could not, as they say, make this shit up.

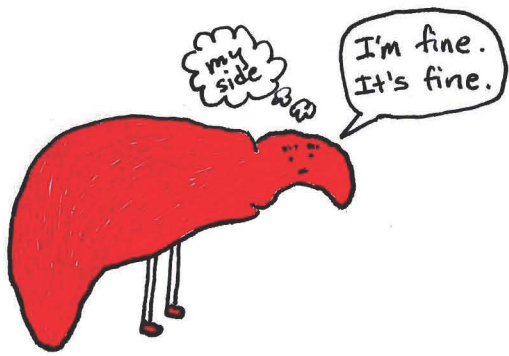
Over time, as the viruses enter and use your hepatocytes, the result is inflammation. Eventually, inflammation can lead to fibrosis (scarring) and its more well-known evil cousin, cirrhosis.



Cirrhosis can then lead to negative health outcomes such as

- ↳ hepatocellular carcinoma (aka HCC, aka liver cancer),
- ↳ hepatic encephalopathy (confusion, coma), and
- ↳ death (biggest bummer).





Your liver can keep working for a long time even with hepatitis, even with scarring. This condition is called compensated liver disease, because your awesome team player of a liver just keeps on doing its job and **compensating** for the damage. Even though it is injured and should really maybe take a breather.

This is why you could have hepatitis C for, say, 34 years* and never know -

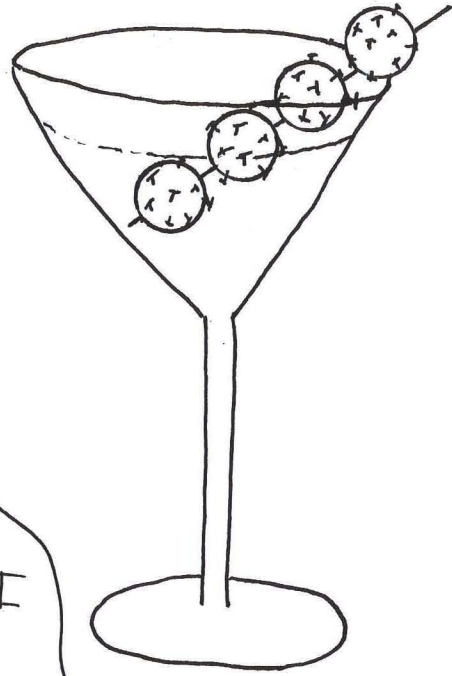
your invaded, sick, embattled liver keeps on working, and working, and working.

Until it doesn't.

*** FORESHADOWING!!**

And alcohol would just make "until it doesn't" arrive sooner.

I think back to the week in Texas celebrating my brother's wedding. I mull over the rivers of wine I drank over those 7 days. I deeply regret the light beers I didn't even want, and the free shots at the bars I didn't order but sure downed. I picture the viruses swimming around in my wine liver, growing ever stronger on my buzz.



I order sparkling water and wait for my girlfriend. When she arrives, I'm happy that she orders sake.

At least SOMEone here should be drinking.

