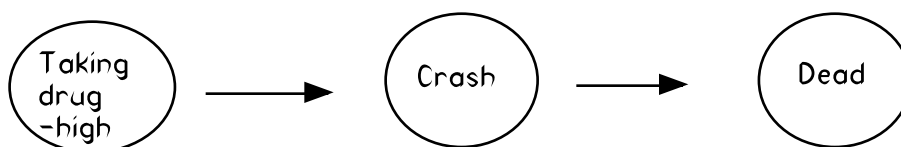


## IN THE BODY



— TOO GOOD IS JUST AWFUL



the parts in the circles are cartoons

*Addiction* is a series of comic books to help people understand how addiction works in the body, how people come to be addicted, how addicts can be helped, and how by helping them we help ourselves.

In this one you'll see the similarity of many kinds of addiction, what is common to them, how and why we're susceptible to them, and what repair of them means. The focus is on the "mechanics" of addiction in the body and why it's so hard to break free of addictions.

Also in this series:

*The Road to Addiction*

Archetypal stories of people who have become addicted.  
How they became addicted.  
The effects of their addiction on themselves.  
The effects of their addiction on their family and friends.  
The effects of their addiction on the rest of us.

*Helping Addicts—Helping Ourselves*

A survey of the main methods of "treating" addicts.  
Abstinence vs. harm reduction.  
The War on Drugs:  
The costs. The effects on society. The results.  
Comparison to alternatives: legalizing drugs; decriminalizing.

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Descriptions of cartoons are in *this font*.

What is described as a `node` is meant to be like a little light bulb on a stalk.

This is a sketch only. Criticism is very much wanted.

WHAT IS ADDICTION ?

WHAT'S GOING ON IN OUR BODIES ?

Our bodies, our brains want what is GOOD and try to avoid what is BAD.

Addiction is when the GOOD becomes BAD.

Someone shooting up heroin, happy for a moment, then croaking.  
Dog sniffing at the body—howling: what happened to my master?

TOO GOOD IS JUST AWFUL!

\* \* \* \* \*

Back with the first humans, some survived and had children.  
Others died young or didn't have children. We've evolved to survive.

On the African plains. Roaming.

MEAT! GOOD!

The ones who ate meat got more protein and more energy than those who ate only fruit and greens. They lived longer. Their children survived.

Gathered around a dead beast, eating the meat.

COOKING—Meat and Fat! GOOD

Some figured out how to control and use fire. They cooked their meat. GOOD!

Cooking meat on an open fire. Fat dripping.

They survived better: they could digest the meat more easily, getting more out of it.  
They could eat the fat, which helped them store energy for lean times. The ones who liked meat and fat survived.

Brain. Wiring, an arrow labeled "meat" points to one part where a few nodes light up. Next to it a part that's labeled "fat" and a few nodes light up. Also tongue and nose lighting up for taste and smell.

Their brains signaled what was good to them—they didn't have to make a choice.  
They passed on that kind of brain wiring to their children. And they survived better.

Mama and baby, cut away of skull to show brain of each. baby has small nodes ready to light up for meat and fat.

SWEETS! Fruit. GOOD!

Eating fruit helped them survive. Vitamins, minerals, instant sugar energy really helped.

Eating fruit. Moving camp, some sluggish. Eat berries and get energy and work better and they move, eating berries as they go.

Some with scurvy, eat lemons and potatoes and get well.

The brains of those who liked fruit signaled GOOD. And those humans passed on that kind of brain to their children.

Brain. Wiring, with nodes lighting up as eating fruit. Area labeled "sweet".

SALT! GOOD!

It's needed to survive. All of us have come to want it.

Eating salt. A few nodes in "salt" area light up.

EATING A LOT when there was meat or fat or sugar helped them survive. They were ready for the lean times.

Eating a lot. Brains continue to light up. They get fatter.  
Then lean times. Fat ones surviving, lean ones dying.

Too much fat, too much meat, too much sugar, too much salt—*not a problem*.  
There just wasn't that much they could get.

\* \* \* \* \*

RUNNING!

Being healthy. People who ran a lot got strong, survived, could escape or catch food. They felt fit. GOOD!

THRILLS! Escape! GOOD!

Danger avoided. They had to take risks for hunting, finding a new place to live.

Running to chase a deer. Running to escape a bear up a tree. Then looking healthy. Nodes light up in center for "feeling fit". Another part labeled "thrills" lights up.

\* \* \* \* \*

JOB WELL DONE!

It feels great to work and get praise.

Woman making skins into a coat for baby. Man praises her.  
Man making a shelter, standing back, feeling good.

People who could work to a goal survived better. Satisfaction was the reward.

Brain center for "job well done"—nodes light up spelling "satisfaction".

\* \* \* \* \*

We have lots of centers and nodes that light up when there's GOOD.

Show lots of wiring and nodes ready but not lit up in "centers", which are labeled: salt, sugar, meat, fat, thrills, healthy.

We don't choose to have them. We're born with them. Or we're born with some and others develop as we grow as children. Some centers get really big.

Child eating too much. Brain center for eating fat and sugar gets way more nodes—compare to other child's brain.

Child getting thrills, taught by parent. Thrill center gets lots more nodes.

Or we get parts that don't develop much because of how we're raised.

Parent teaching child that meat and fat is bad. That center shrinks.

Parent fearful, lazy, child emulates, center for thrills and fitness doesn't develop.

And some are born with or develop a center that's way too big. They're less likely to survive.

Thrill center too big, picking up rattlesnake, bitten, dies.

\* \* \* \* \*

Avoiding what is BAD was also crucial for surviving.

Eating a berry, makes person sick. Try again because tastes so good but stop. Avoid. BAD.

Ones who developed a control center that said STOP survived better.

Brain, lighting up for berries, control center putting up a STOP sign. Shuts down the nodes that were lighting up.

The control center is almost not there when we're small—we're all just impulse.

Small child wanting candy, mama says no, cries.

As we get older, it grows.

Child admonished, learns to wait.

Dog taught to sit before getting treat.

(asterisk: That's why we treat children differently in the law.)

The control center didn't develop to stop eating, or running, or working except when those made you sick or interfere with living—you could feel it was BAD and you stopped.

\* \* \* \* \*

Now there's plenty of food. The pleasure centers can't stop lighting up: fat, sugar, salt. The control center is not strong enough to stop it. OBESE.

Eating potato chips, eating from a package labeled "Fried Pork Rinds". Drinking Coca Cola. Stuffing it down at the BBQ. Obese.

More eating, less control—cut away of brain and big centers for salt, sugar, fat while the control center is small.

\* \* \* \* \*

## RUNNING

Now it's easy, just put on shoes and go out, not over rocks and through brush and thorns, not to escape. Running feels good: "runner's high". But the high is too good and you can't stop wanting it, even when you should. The control center isn't strong enough.

Brain lights up when running—"endorphins" washing over brain.  
 Runner keeps doing it. 1 mile. 5 miles. 10 miles. Shins hurt.  
 Forgets family. Knees bad. Ankle breaks. Wants to continue.  
 It's the only good she knows. Body breaks down.  
 Control center of brain small, "fit" center too large.

\* \* \* \* \*

THRILLS are now easy and seem safe.

Roller coaster. Horror movie. Sky diving. Bungee jumping.

But some can't stop. Their thrill center has become too strong, their control is too weak.

Car racing in city and crash.  
 Gambling. Thrill. Brain nodes light up.

\* \* \* \* \*

ACCOMPLISHMENT, feeling good by completing a good project is now SOOOO EASY with a video game. Each little step. "YES! I did it!" Sucked into the dreamland of being great through what you're doing, as if it were real, the center for job well done grows and the control center weakens.

Adult playing video game, clock shows passing of many hours.

\* \* \* \* \*

Some don't develop control centers enough.

Mother spoiling child, then child is adult and wants without thought.

No mother, no father, just growing up on street and no impulse control.

Boy not told to stop hitting his little sister. She hits her little brother. Sassing back to mama. No discipline.  
 Cut away: control center not developed.

They can't stop wanting to eat, or wanting to run, or wanting thrills, or playing a video game.

Adult continues playing video game (earlier cartoon). Adult ignores baby, continues playing. Baby continues to cry, cough, on floor, crawling toward stove. Adult ignores all.

Obese person eating and eating.

Gambling and not stopping though lover tries to get her to stop.

\* \* \* \* \*

## ADDICTION!

Any activity—eating, running, wanting thrills—that lights up the pleasure nodes and can make us feel good can become addictive. We want the pleasure nodes to light up.

Several pictures of the brain with pleasure nodes in one for salt and fat; in another for sugar; in another for thrills. Some with those nodes more plentiful, over-developed, control center small.

If the control center isn't strong enough, or habit makes your brain grow a lot more nodes in one of those centers, or your brain is wired to want a particular kind of good, you can't stop. Just wanting to feel good, doing it over and over again, that alone makes the control center smaller, weaker, so we can ignore it when it tells us it's BAD and we should STOP.

Someone eating. Pleasure center grows for that, control center gets weak over time. Control center holding up smaller and smaller "STOP" signs, until almost not there.

In brain, control center of an addict—small. Getting smaller with repeating the pleasure activity. In brain center of non-addict, control center bigger. No problem stopping.

## HABIT!

What worked before will work again, so keep doing it. That's good for survival, but out of control in addiction.

(Not really centers. More like wiring and nodes—neurons—that release chemicals that attach to other neurons in a big net that makes that GOOD feeling.

Wiring net, close up of a neuron. Label "That's science!")

\* \* \* \* \*

Some brains don't have enough nodes for pleasure.

Some people are born that way.

Baby with brain with few nodes for pleasure. Baby cries.

Mother drinking alcohol. Baby's brain small with very small control center.

Some develop that way.

Baby ignored when crying.

Child hit by parent. Fearful.

Parents always complaining and criticizing.

Parents always arguing, no love.

That's depression. You can't get the pleasure nodes to light up.

Few nodes in brain for pleasure. All "hiding".

Control center HUGE.

Someone with almost no pleasure nodes—only a few and

"out of order" signs on them, and person is preparing to hang self.

People turn to gambling, running, meat-salt-sugar, and video games to overcome the depression.

Gambling, and overcomes the depression nodes.

But it doesn't work for long. We have to continue doing it. And continue doing it.

Depressed again, and gambling again to get some pleasure nodes lighting up in depression brain. Again, and again.

\* \* \* \* \*

## DRUGS !

Cocaine, heroin, methamphetamine hijack the pleasure nodes. They light up all the pleasure nodes at once—release all the chemicals. WOW!

Couple kids, "Let's try it." Taking cocaine.

All the nodes light up.

Couple kids, "Let's try it." Taking meth.

All the nodes light up.

Couple kids, "Let's try it." Taking heroin.

All the nodes light up.

The greatest! EUPHORIA! Overwhelmed! This never happens normally.

Feeling good vs. euphoria. CHEAP THRILLS!

Someone takes heroin first time, blissful.

Someone takes cocaine first time, super feeling, sex.

Someone takes meth first time, powerful feeling, super capable.

DRUGS! Make you feel better than good—can overcome depression. Even if you're normal, it's SOOO GREAT! And lasts a long time!

Taking meth, pleasure nodes still lighting up 8 hours later.

Until the drug wears off. CRASH! Depression. Can't activate the pleasure nodes cause they're all worn out.

Afterwards. All the pleasure centers worn out—the nodes look pooped, hanging limply on their stalks. All grey Like a depression brain.



You want that good feeling again. But also to get over the crash-depression.

Looking for drugs desperately. Takes the drug again.

Yes, some stop after the first try.

Conked out. Child to revive the person. Finally person gets up, takes child to bathroom. Loving with child, "I can't take care of you if I'm out of it" and passes by the offer of more drugs.

Why? Their control center is strong enough to resist? They have good goals—like taking care of their child? They're not wired in the brain to want that much—like people who can't eat sugar or can't eat peanuts—and the body just stops you?

Getting drunk. Waking up the next morning hung over.  
"No more—that's awful."

Some don't stop after the first try because everyone's doing it.

At party offered more, like a beer. Only it's pills. Why not?

At the street corner with buddies. C'mon, are you chicken?

And some are hooked right away—the first time, they have to have more.

First beer, great! Then another, and another, and another.

First meth, great! Then conked out. Child looking on. Walks right past the child, unaware of it, and hurries out to find a meth score.

WHY? The control center isn't strong enough to stop it at the first try? Or the brain is wired badly and just susceptible, like people who can't stop eating sweets? Or they are depressed and it blocks out the bad feeling?

Depressed and cutaway of brain showing that depression. Then taking drugs and black cloud obscured.

Brain with nodes saying "Hit me!" "Hit me again!"

They take the drug again to have that feeling of euphoria, a "HIGH". WOW. Or just to feel normal. Or just to get over the depression.

Taking drug again and thought bubble of black cloud and rain goes away.

Then CRASH! So take more.

Black cloud comes back bigger. Takes more drugs.

2-page spread:

"Before": Man playing with his children at the park, with wife—brain is normal with a few nodes lit up.

"After": Man takes cocaine, all brain nodes lit up, he is running around yelling at kids, yelling at referee of kid's baseball game, crazy.

(Asterisk: not all people who scream at a referee at a kids' game are on drugs—they just act like they are.)

"After after": Brain looks like a war zone, all grey, demolished, nodes limp and out of commission, man sitting in car while kids play, head on steering wheel, then throwing up.

It's the same with any addiction.

Black cloud comes back bigger. Goes gambling again.

Black cloud comes back bigger. Goes running again.

Black cloud comes back bigger. Eats again.

Black cloud comes back bigger. Gets a fifth of whiskey.

Black cloud comes back bigger. Starts playing another video game.

The usual goods aren't enough to activate the pleasure centers.

Guy on drugs, sniffing cocaine, not interested in great meal.  
Gets thinner and thinner. Brain center for "meat", "fat", and "sweets"  
all pooped nodes, can't get up.

Athlete taking heroin. Stops running. Weaker and weaker. Brain  
center for "feeling fit" all pooped nodes, can't get up.

Only each time you take the drug, each time you do the habit, the pleasure nodes get more worn out. There are no more chemicals left to release. Each time the high is less, the crash bigger.

Repeating taking drugs, each time fewer nodes light up.

So take more—heroin, or cocaine, or meth, or alcohol to get any pleasure.

Guy sniffing some.  
Next time sniffing a lot more.  
Next time more, and then more.

Ditto alcohol.

Ditto heroin injections.

It's called tolerance. Your body needs more to get the same or even *any* effect.

Taking drugs also starts to shrink the control center. Can't say NO.

Addict's brain. Control center getting smaller and smaller.  
Then just a very small area with a sign "OUT OF BUSINESS".

And after enough times, it's not good at all. But you really want it because with all those nodes busted and the wiring changed, you get terrible crashes when you don't take the drug. It's called WITHDRAWAL.

Nausea.	Depression.
Vomiting.	Hallucinations.
Chills.	Crashing against walls.
Fever.	Violence—against others, against yourself.

Worse than the worst flu ever.

Alcohol is different—it makes you tired, it confuses you, and it shuts down the control center.

Man drinking alcohol—in the brain are waves of alcohol spilling over the control center, wiping it out till it dries out, but then still not as good.

Alcohol leaves you with all impulse—which feels like fun until you get beat up or fall asleep. Alcohol blocks bad feelings—or creates them!

Man drinks alcohol, smiling, happy—then tells friends he's OK to drive. All impulse. Gets in fight and beat up. Crashes car. Asks rescuer to give him his bottle of whiskey.

Woman drinks, gets nasty, wants to fight. Then sad and tries to kill self.

And stopping alcohol all at once can kill you!

Guy drinking a bottle of whiskey. Then next day a bottle and more. Then in jail, can't get alcohol, seizures, dies.

\* \* \* \* \*

All addictions affect the control center, shrinking it—you're on just impulse.

We say that an addict craves the drug. But that's way wrong, for you can crave a chocolate bar and not get it, big deal. No, it's a lot worse than that.

Hot sun, desert, guy sweating, walking, discards shirt, discards hat, sweating more. Clearly in distress. Write "THIRST—must have water!" He struggles on along a path. There is a big bag of gold that; he passes by. There is a beautiful woman he passes by. There is a big steak; he passes by. There is a baby crying, close to being attacked by a wildcat; he passes by. All because he can see a pitcher of water in the distance. He gets to the water. He drinks, then draws more water, drinks. Then satisfied. Then thinks about the gold, woman, steak, and baby, but they have all gone.

That's what addiction is like. You don't choose to have the drug. You can't live without it—just as you can't live without water.

You know it's bad, you know it's hurting you, but you can't stop. You dare not think about all the bad you're doing or the good you're passing up—that's too painful on top of need for the drug or gambling or alcohol. You're in DENIAL.

Girl drunk. Gets up, looks like hell, smokes, finds a beer, gives some to her child, drinks, belches.

Doctor: You're getting cirrhosis of the liver. You've got to stop drinking.

Girl: Sure, and I saw you at the bar last week anyway, I don't drink too much. I've cut down.

Opioids are for pain—some people need them to function at all.

Veteran without legs, pain, can't function. Then takes opioid, able to get out of house, gets a job, able to work.

But they also set up the same addiction. Some can stop.

Woman with back operation, pain, given opioid, then three weeks later stops taking them.

But a lot of people can't stop once they've started. They're "primed for it", ready. Because of their brain wiring? Because of the way they were raised? Because everyone's doing it? Because they can't get any work to make them feel they can do something good? One week, even a few days, and they can't stop.

Man with severe cut on hand. Given opioids. Can't stop taking them many weeks later.

If it's there, take it. More and more. They don't want to feel "normal" anymore.

The NEW NORMAL = deep in the drug or deep in the running or deep in the gambling.

Same girl in a bar. "I'll have just one", then another, then another until clearly out of it and taken out by a terrible looking man.

A guy taking cocaine, sniffs it. Great. Ten minutes later someone offers more, he takes it, too. Then again, at party.

Child kissing his face, tugging at him passed out on floor.

Woman gambling, husband takes her away from it, no money, back to kids. Later she rushes back to gamble more. "I'm just having a little fun."

\* \* \* \* \*

REPAIR? Withdrawal. OUCH.

Someone going through withdrawal. "HORRIBLE"  
Child trying to help but person can't feed the child.

## HOW TO STOP???

Fear won't work. Any threat has less horrible consequences than not getting the drug or not gambling.

Person with thought bubbles: one of prison, one of drugs.

Goes off and gets the drugs.

"It can't happen to me."

Girl told by a friend on the street that he's got HIV from the needles.

She says, "Yeah" dopily, then shoots up.

And the control center is also part of foreseeing consequences—such as being in prison and not getting drugs for years. But the control center isn't working.

Addicts brain. Small control center. No imagination.

Compared with normal person's—thought bubble imagines in jail.

You can't FORCE someone to give up drugs.

Taking drugs. Caught selling them. Goes to jail.

Shows 4 weeks. 8 weeks. 4 months. No drugs.

Sure she'll look normal again, putting on weight, feeling better.

Before: skinny, acne, shaking, hair straggly, crazy look, fights.

After: plump, skin clear, hair good, calm.

But IT WASN'T HER CHOICE!

Resentful. Guards.

Lying in bed in the jail cell, looking up at ceiling, thought bubbles of bad she's done, of being abandoned, depressed, anxious. Thought bubble of taking drugs with friends and feeling good.

So when she gets out . . .

6 months. She gets out.

Goes to friends, gets heroin.

Thinks "I know how much I need—just like before".

She uses the same amount she did before. Only now her body isn't used to it. She's lost tolerance to the drug. It's too much.

Takes the drug. Goes into coma. OVERDOSE.

This time she's lucky.

Ambulance, two injections labeled Naloxone. She revives.

Or you get an overdose from a batch of drugs that are too strong.

Buying pills—opioids. Guy says they're really good. Arrow with label "fentanyl" pointing to pill. Takes the pill. OD.

Addict friends try to help but too dazed to do anything. Dies.

You can't get addicts to giving up drugs through fear. The control center is not just to stop BAD but to lead to GOOD. Fear isn't enough. You need something that makes you feel good that isn't drugs and isn't addictive.

NOT Give up drugs and take up gambling.

NOT Give up gambling and take up drugs.

NOT Give up drugs and start running but can't stop.

NOT Give up smoking and start eating.

GOAL! Need a goal, a sight of GOOD. A life you want to live.

\* \* \* \* \*

We've developed to be social, to be loving—family, friends, empathy, touching.

Many together socializing around a fire. Walking arm in arm.  
As in earlier cartoons of early humans.

Living together, helping each other out, people survived better.

Someone sick on a litter being carried.  
Helping someone who's leg is cut.

Sheep with one that has broken leg and bleating and others ignore it.

Hunting together and sharing meat.

Sharing berries.

Ones who were social survived. All together.

Someone diving into a river to save a child. Man dies, child saved,  
his family lives because family of child takes care of them.

Ones with brains that want to help passed it on to their children.

Mama's brain center for social, loving, kindness lighting up as she  
cuddles baby. Baby's does, too.

This is so important for survival that our brains light up not only when we are helping and being helped but when we see or hear about someone else helping another person.

Same scene saving child. Those who see it have the nodes in their  
social-loving-kindness center light up.

That's what got us to live with dogs, which helped us a lot. Empathy and caring from the dogs and to the dogs helped us become more social and to survive.

Hunting with dogs.  
Dogs guarding, barking at lions.  
Petting dogs, sleeping with a dog.

BEING LOVING. That's a goal, a sight of a good life we can all go towards.  
Empathy, social, touching, helping, being helped.

Addict after *withdrawal*. Imagines a life of caring and giving.  
Starts to live it, bit by bit. Pleasure nodes start to *work* again.  
Control center starts to *grow*.

Slow repair, as the control center begins to function a little.

Then finally eating a little. Ice cream. Tiny bit of pleasure. Control center with sign "UNDER REPAIR—Opening Soon".

Lighting up pleasure nodes *when* helping. Control center says  
"Back in Business—Directions to the GOOD available here".

It's not just feeling good by doing good. It's JOY that comes.

A smile from someone and person feels joy.

A thanks, and someone feels joy.

Helping someone *who's* hurt and not *waiting* around for thanks  
and just a big smile, JOY.

Repair takes a long time! Habits replaced by new habits. HABIT is strong.

Smoker, trying to give up. After breakfast, going out the door, has  
to have cigarette.

Heroin addict, goes to the street corner *where* he had friends, they  
are there and offer heroin again.

It's not "Just say no". It's "Just say no" again and again and again and . . .

Car mechanic, "It's a big job come back in a *week*."

Person helping addict, "It's a big job, we'll help and be helped for a  
long time."

It takes a long time for cocaine and heroin addicts to get pleasure from what we do  
every day and to slide past depression. It takes a really long time for meth addicts  
and smoking addicts.

IT IS POSSIBLE.

Addicts slowly living better over time, pleasure in small things.

Seeing a good life makes you feel GOOD. Kindness, being loving, generous, feeling  
the power of a loving heart. Can do it—with help. And that help is part of the  
GOOD: empathy, being social. We can't force it because fear and punishment don't  
help us learn new paths to a GOOD LIFE that make us feel GOOD.

With a family. Taking care of child. Helping others.

Or no family, alone but loving heart, helping others.

All together.

A child says "I want to be like her".

A child says "I want to be like him."

Brain: lots of pleasure nodes light up a little, big smile on the control center.

Still . . .

The WANT is strong.

Minor version of the thirst cartoon.

DENIAL is strong..

Denial cartoon.

HABIT is strong.

Habit cartoon.

FEAR is strong.

Fear cartoon.

How do we get to wanting a good life?

How do we get to seeing a good goal?

Read about that in the next comic book *Helping Addicts—Helping Ourselves*.

THERE IS NO WAY TO PEACE. PEACE IS THE WAY.