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Alcoholism Made Simple: the Brain, the Biological Process & Inheritance

Myth #1

“Brain damage occurs only in obvious alcoholics.”

There is no difference in aggregate levels of misbehaviors and personality problems in children raised in non-alcoholic homes, whether or not they develop alcoholism as adults.³ Practicing alcoholics engage in erratically destructive behaviors, while non-alcoholics rarely do. In recovery, alcoholics generally become, over time, gentle, kind, honest and non-destructive. These long-term observations of the life cycle of typical alcoholics suggest there is something very different about their brains while actively drinking vs. when not, whether before or after the drinking career. Since poor behaviors usually begin at or near the time of the first drinking episode, alcohol must be changing the brain's biochemistry. And, it must be occurring long before he or she becomes an obvious alcoholic, in which the personal and professional life has fallen apart.

To understand this, the biochemistry of alcoholism must be described. Don't let this scare you; it's really quite simple. Once understood, almost everything that seemed crazy and implausible about human behavior, whether public or private begins to

make sense.

The human body converts alcohol first into a poison, acetaldehyde, and then into acetate, both of which find their way to the brain. While the former substance—in the same class of chemicals as formaldehyde—perversely makes the drinker feel good, the latter causes feelings of nausea, hangover and sleepiness. Now think about it: if a person experiences a quick conversion into acetate, he feels lousy or sleepy and is unlikely to keep drinking. If, on the other hand, the body blocks the conversion of acetaldehyde into acetate, the former works its magic and he feels good. It shouldn't be surprising if this person, experiencing a buildup of the former substance and little or no increase in the latter, continues to drink. *Therefore, the speed at which the body converts alcohol into acetate determines a person's predisposition to alcoholism.*

It's that simple.

The non-alcoholic's liver slowly turns alcohol into acetaldehyde, then quickly into acetate. As a result, there is little or no buildup of poison in the brain and instead quick feedback from the acetate-induced ill feeling, which serves to stop the drinking. This generally occurs at relatively low blood alcohol levels, usually .04 to .10 per cent. The top range is barely legally drunk for purposes of operating a motor vehicle.

On the other hand, the alcoholic liver converts alcohol into acetaldehyde *quickly* and then into acetate *slowly*. There is no immediate feedback (nausea, etc.) suggesting that the drinker slow down. Instead, the buildup of acetaldehyde causes a release of "feel-good" neurotransmitters called isoquinolines, which are opiate-like substances. The "I'm feeling fine" response serves as positive feedback to keep on drinking. The top range of blood alcohol level-BAL-to which most non-alcoholics ever drink is where the typical addict is barely getting started. If it stopped there all would be well; after all, there's nothing wrong with feeling really good. However, for alcoholics, this is where the problems begin.

Unfortunately, acetaldehyde, the poison, causes brain damage. Evidence that this occurs even during the hidden early stages (usually the first drinking occasions) is generally observ-

able almost immediately in behaviors. Most parents chalk this up to adolescence. However, the changes should be assumed alcohol or other drug-related unless proven otherwise. Eventually, as poor behaviors continue and actual evidence of addictive use is uncovered, we can attribute the transformation to alcoholism.

When no other drugs are used, obvious personality changes may not become apparent without observing behaviors during and after several drinking events. Few alcoholics act badly every time they drink. On the other hand, they will misbehave at least some of the time. One set of misbehaviors occurs when young people become licensed to drive. Alcoholic teenagers will almost always, often with regularity, drive while intoxicated (we'll later discover why alcoholics can be *expected* to engage in such behaviors). This impaired judgment, manifest in behaviors, is indicative of brain damage rooted in alcoholism, even in the hidden early stage.

Myth #2

"The average age at which one becomes an alcoholic is 40."

Or 30, or 50. Any age but the early teens. Yet, most recovering alcoholics tell us they triggered alcoholism during their first drinking episode, usually at age 12 or 13. Looking back, they realize that alcohol did something different for them than for others. They often say, "I felt powerful." The feeling is described in almost heavenly terms as a "glow" or a "lift." We'll discover later that addicts act like they think they are Gods. If they act this way, they must think this, even if only on a subconscious level. If you felt god-like, you'd feel glowing and powerful too.

The buildup of poison on the brain results in brain damage causing distortions of perception and memory. The key distortion leads the afflicted person to believe that everything he says or does during a drinking event (and eventually, in many cases, in-between) is good or right and nothing bad or wrong.

This opinion of his own perfection is the reason he develops a god-like sense of self, which translates into an inordinately large sense of self-importance, or an “inflated ego.”

While we can’t read his mind, we can see the resulting misbehaviors, which may become extraordinarily gruesome. Sometimes, these are observable at or near the inception of alcoholism, often during adolescence. For example, the behaviors of Eric Harris became deadly at a very young age, as did those of Jeffrey Dahmer and Ted Bundy. Harris, whose favorite drink at age 18 was whiskey, had been taking Luvox, prescribed for Obsessive-Compulsive Personality Disorders and frequently used in treating depression, when he and Dylan Klebold murdered 13 innocents at Columbine High School in 1999. Dahmer and Bundy were obvious teenage alcoholics and became serial murderers in their late teens and twenties. Seemingly mild-mannered Charles Andrew Williams, who at 15 inflicted mayhem at a high school near San Diego, California in early 2001, killing two and wounding 13, had a history of drug use.⁴ As a young teen, he is said to have shared a pastime with the tougher boys in the neighborhood: smoking marijuana and stealing vodka and tequila from a local grocery store.⁵

However, the behaviors of most alcoholics are often not so grisly or even overtly destructive. One of the most common misbehaviors exhibited by early-stage alcoholics is promiscuity. This is a more subtle, less obvious way by which to wield power over sexual partners, which can be destructive even if masked with charm. It is this perverse need to misuse power, especially capriciously, which leads to many of the bad behaviors that observers frequently witness in early-stage alcoholics.

Myth #3

“Alcoholism is a spiritual disease.”

Recovering alcoholics often confuse cause and effect, believing that loss of spirituality precipitated their alcoholism.

The biochemistry of alcoholism results in an inflated ego. Having an inordinately large sense of self-importance inter-

feres with spirituality. If you are God, there can be no other God. As recovering alcoholics often say, in active addiction they were the center of their universe, and yours.

An effect of alcoholism (and, therefore, a clue to its existence) is loss of spirituality. Recovery requires abstinence and ego deflation. Without both, good solid recovery in which behaviors markedly improve is impossible. The 12-Step Program works to deflate the ego by replacing it with a higher power. Since loss of spirit is only an effect of alcoholism, it cannot be its cause. Regaining spirituality is, however, imperative for recovery.

Myth #4

“You can choose not to be an alcoholic.”

You can no more choose to not have alcoholism than to have or not have early-onset diabetes. All the alcoholic can do is choose not to drink. However, due to the biochemistry that makes him feel good and, at the same time, causes distortions in perception and memory, he cannot see that his drinking is a problem. Therefore, he needs to be convinced to make this decision.

It’s a difficult choice. After all, alcohol (and, usually, numerous other drugs) not only makes the early-stage alcoholic feel good, but also powerful. His brain chemistry distorts perceptions and memory so that he views everything from the perspective that he is always right. Ask yourself this question: would you want to stop using a chemical that, at some level, made you not only feel great, but also god-like? Why would *you* abstain?

You wouldn’t. This is the reason we need to help the addict make that choice by connecting his use of the drug to pain resulting from logical consequences. As long as close persons protect him from such outcomes, the odds of making the correct decision are remote. Instead, everyone must do all they can to hold the addict accountable for misbehaviors, which includes total disengagement from personal and professional

relationships for as long as active addiction continues.

The difficulty in disengaging is not only that every close person needs to learn the trademark behaviors of practicing alcoholics, but also that disenabling must follow. Even one enabler can greatly reduce the odds of permanent sobriety. While this may be challenging, it is not insurmountable. It will become easier once the stigma surrounding alcoholism is removed, allowing family, friends and associates to freely discuss the possibility that alcoholism accounts for misbehaviors.

Myth #5 **"The addict is in denial."**

The damage that the poison, acetaldehyde, inflicts on the brain results in distortions of perception. The key distortion experienced by the alcoholic, coined "euphoric recall" by the late alcoholism authority Vernon Johnson, causes the addict to remember everything he does or says in a self-favoring light.⁶ He does not act badly; you do. He commits no wrongs; you do. If he does something for which he should be held accountable, it is because *you* made him commit the act. Hence, euphoric recall leads to what appear to be rationalizations. However, he truly believes that no matter how grotesque, what he did was the right thing to do under the circumstances.

Or, he may remember nothing. Many recovering addicts admit to having no idea how they got home (or wherever they "came to") after a day (or two, or three) of bingeing. Their first thought is often to check the car's front fender for bloodstains. These episodes, termed "blackouts," are periods of time during which events do not even enter the memory banks and, therefore, *cannot* be recalled.

He may also remember nothing at the time, having unintentionally engaged in "memory repression." While we are all capable of repressing memories, the addict does so far more completely and efficiently. There may be a good reason for this: if he could remember everything he did while in active addiction during a moment of clarity, he might go into irreversible