

{ SEPTEMBER 24, 2008 }

INSIDE
alcohol and
judgment

parental
influence on
use of alcohol

proven skills to prevent
underage drinking

how alcohol affects
the teenage brain

Underage drinking



Think underage drinking doesn't affect a teen's brain? Think again.

IT'S A FACT. New research shows alcohol affects a teenager's developing brain differently than an adult's. Memory, learning and impulse control can be impaired seriously. The risk of addiction goes up dramatically. So talk to your kids about the dangers of alcohol and set clear rules about no alcohol use. Visit www.hawaiicounterdrug.org for more information and the proven skills to prevent underage drinking.



Know where your kids are
and what they're doing.





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JAMES R. AIONA, JR.
LIEUTENANT GOVERNOR

Dear Hawai'i Parents:

You have more power over the choices your children make than you may realize. Studies show parental disapproval is the number one reason children choose not to drink alcohol.

The disturbing fact is that underage drinking is a serious public health concern in Hawai'i. Alcohol is the number one substance of abuse among Hawai'i's youth. In addition to the well known consequences of underage drinking including academic failure, risky sexual behavior, and injury and death, new scientific evidence shows that underage drinking can cause permanent damage to a young person's rapidly developing brain.

Children who drink are at great risk, which is why parents must stay involved in their children's lives. The most effective parenting techniques to prevent underage drinking are among the most simple:

- Set clear rules about no underage drinking.
- Know where your children are and with whom.
- Know your children's friends – and, if possible, their parents.
- Ensure your children's social environments are alcohol-free.
- Have daily, positive communication and interaction with your children.

I urge you to join us in addressing this serious and very real threat to our children's health and well-being by educating yourselves about the dangers of underage drinking and the proven skills to prevent it. Our keiki deserve the brightest possible future we can give them, so let's start talking before they start drinking.

I wish you and your family the very best.

Sincerely,

JAMES R. "DUKE" AIONA, JR.
Lieutenant Governor

Teen brain development and

alcohol



What parents may not realize is that children say parental disapproval of underage drinking is the key reason they have chosen not to drink.

THINK UNDERAGE DRINKING DOESN'T AFFECT A TEEN'S BRAIN? THINK AGAIN.

Most parents talk to their kids about drinking two years too late. Age 8 is not too early.

The brain's *hippocampus* (responsible for learning and memory) can be **10% smaller** in underage drinkers.

Alcohol affects a teen brain differently from an adult brain.

It can actually cause serious damage to the still-developing adolescent brain (10-21 years).

NEW RESEARCH SHOWS that alcohol affects a developing teen brain differently from an adult brain. "The brain goes through dynamic changes during adolescence, and alcohol can seriously damage long- and short-term growth processes" (American Medical Association, 2003).

Alcohol use may impair memory, learning, decision-making and impulse control; and it greatly increases the risk of addiction. In addition, alcohol use can cause young people to develop social problems, have poor judgment, get into trouble, do poorly in school and experience failure in achieving lifelong goals.

To compound this problem, research shows that parents generally underestimate the extent of teen drinking and its negative consequences. Thirty-one percent of youths who said they had been drunk in the past year were said by their parents to be non-drinkers. Others may view underage drinking as inevitable, but it isn't. To be alcohol-free, a teen needs the active involvement and help of a parent. All children need help from their parents to guide them through their teenage years. Staying bonded to parents is critical to the process of teenagers emerging healthy, safe and alcohol-free.



Increased
risk of

addiction

THE BRAIN REWARDS positive actions with feelings of pleasure so we want to repeat them. We remember pleasure from dopamine, a “feel-good” brain chemical, or neurotransmitter, which connects the pleasure to the thing we enjoyed. Alcohol affects our brain’s pleasure-reward system by pretending to be a neurotransmitter. It tricks the brain into generating pleasure-reward feelings from a harmful chemical instead of a real experience.

**In 2004, 463
Hawaii youths age
12-20 were
admitted for
alcohol treatment**

feel uncomfortable – sometimes even extreme discomfort – without it. He or she becomes addicted. Getting their next drink becomes more important than family, grades or even sports.

Because the teen brain produces an abundance of dopamine, it can go rapidly from liking, to wanting, to needing alcohol, programming it for alcoholism. Alcohol can also damage the brain’s ability to sense pleasure from normal, healthy things and experiences – leaving a young person feeling “flat” about things he/she previously enjoyed.

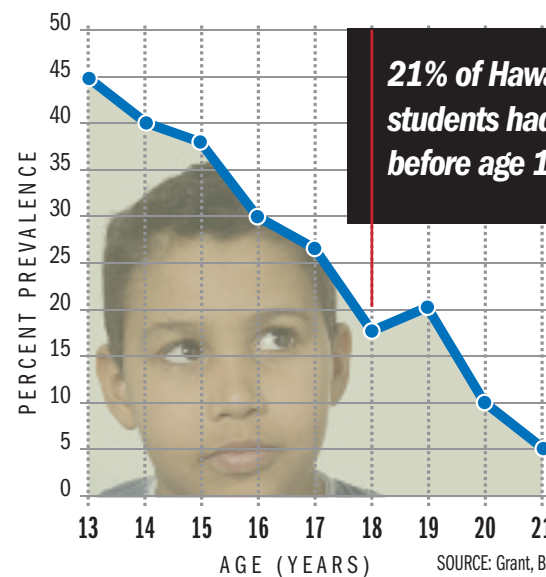
If a teen continues drinking, the brain changes and adapts to the presence of alcohol and soon the teen needs more and more alcohol to create the same amount of pleasure. If a teen still continues drinking, he or she will begin to feel a craving for it and

A person who starts drinking at the legal age of 21 has only a 7 percent chance of becoming addicted.

Children who begin drinking at age 13 have a 45 percent chance of becoming alcohol dependent.

Alcohol dependence

BASED ON AGE DRINKING STARTS



21% of Hawaii high school students had their first drink before age 13

SOURCE: Grant, BF and Dawson, DA.
Journal of Substance Abuse 9:103-110,1997

Parental influence on alcohol use

START TALKING

BEFORE THEY

START DRINKING

▶ Sharing values and family history regarding alcohol will create an environment of trust and understanding.

If parents drink, they should:

Be clear that they do not want their children to drink alcohol until they are 21 years old and then only in moderation.

Tell their children that some people should not drink alcoholic beverages at all. These include:

- Children and adolescents.
- Individuals of any age who have a problem restricting their drinking to moderate levels.
- Women who are pregnant.
- People who plan to drive or take part in activities that require attention or skill.
- People using prescription and over-the-counter medications.

If parents don't drink, they should:

- Explain their reasons for not drinking, whether they are religious, health-related or due to family history.
- Encourage children to talk about concerns and questions about drinking.
- Be clear that they do not want their children to drink.
- Explain that when the children are 21, if they should decide to drink, they should do so in moderation.

Binge drinking now begins as early as elementary school, and parents are often unaware of their child's use of alcohol.

▶ *In fact, a national survey found 31 percent of kids who said they had been drunk in the past year had parents who believed their children to be non-drinkers.*

How parents can help their children to remain

ALCOHOL-FREE

1.

Explain the risks.

Learn and explain the risks of underage drinking. Emphasize that drinking alcohol is not a "rite of passage" but a dangerous drug for a teen brain.

2.

Talk early and often.

17% of Hawaii middle school students report drinking alcohol for the first time before age 11.

3.

Set clear rules.

Set clear rules about no alcohol use. Be specific: "Absolutely no underage drinking in our family."

4.

Know your children's friends.

Get to know your children's friends and their parents. Help them choose friends who support your family rules.

5.

Monitor children's activities.

Always know where your children are, whom they are with and what they are doing. For example: "If alcohol is at a party, call me and I'll come and get you."

6.

Make alcohol unavailable.

Ensure that alcohol is not available to your child at home or from others when your child is away.

7.

Be involved.

Develop close bonding experiences and have daily positive interactions with your child.

8.

Stay in contact.

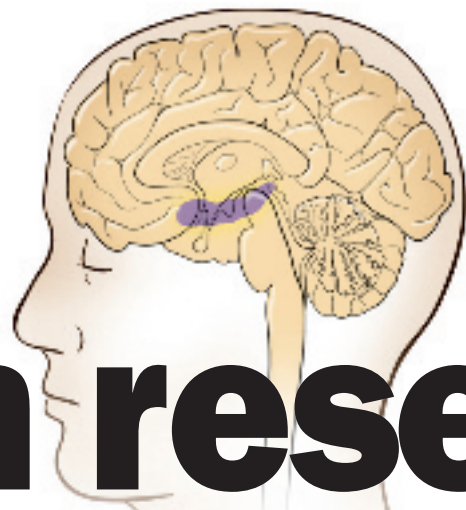
Studies show children are more likely to drink between the hours of 3:00 – 6:00 PM, when unsupervised by parents. Give your kids a call.



New

brain research

and the effects of alcohol



The brain's *hippocampus* (responsible for learning and memory) can be **10% smaller** in underage drinkers.

"... it has become clear that, during adolescence... the brain is highly plastic and shaped by experience.... Alcohol appears to interfere with the changes in circuitry that occur during learning."

DR. AARON WHITE, DUKE UNIVERSITY

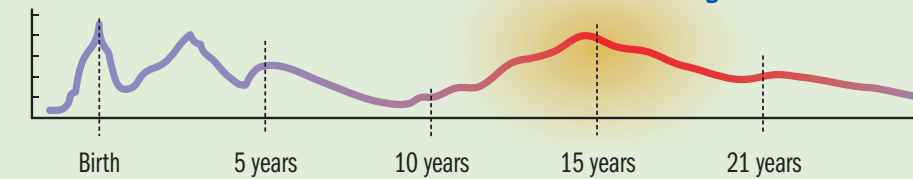
"Teens, through their choices and actions, have the power to direct the development of their own brains."

DR. JAY GIEDDI, CHIEF OF BRAIN IMAGING, NATIONAL INSTITUTES OF HEALTH

"The use of alcohol, by itself or with other drugs, can retard the normal growth and development of young people."

AMERICAN ACADEMY OF PEDIATRICS, ALCOHOL: YOUR CHILD AND DRUGS

Peaks of brain plasticity



Neural plasticity refers to the ability of circuitry in the brain to physically change and grow new dendrites as a result of new learning and experiences.

Brain plasticity

During peaks of plasticity, the adolescent brain is "wiring" two important brain areas: the **prefrontal cortex** (responsible for planning, decision-making, good judgment and impulse control) and the **hippocampus** (involved in memory and learning). During this period of development, the brain must make the key neural connections to wire itself to become a responsible, thoughtful adult. Alcohol, which acts as a depressant, slows down brain activity and hinders development.

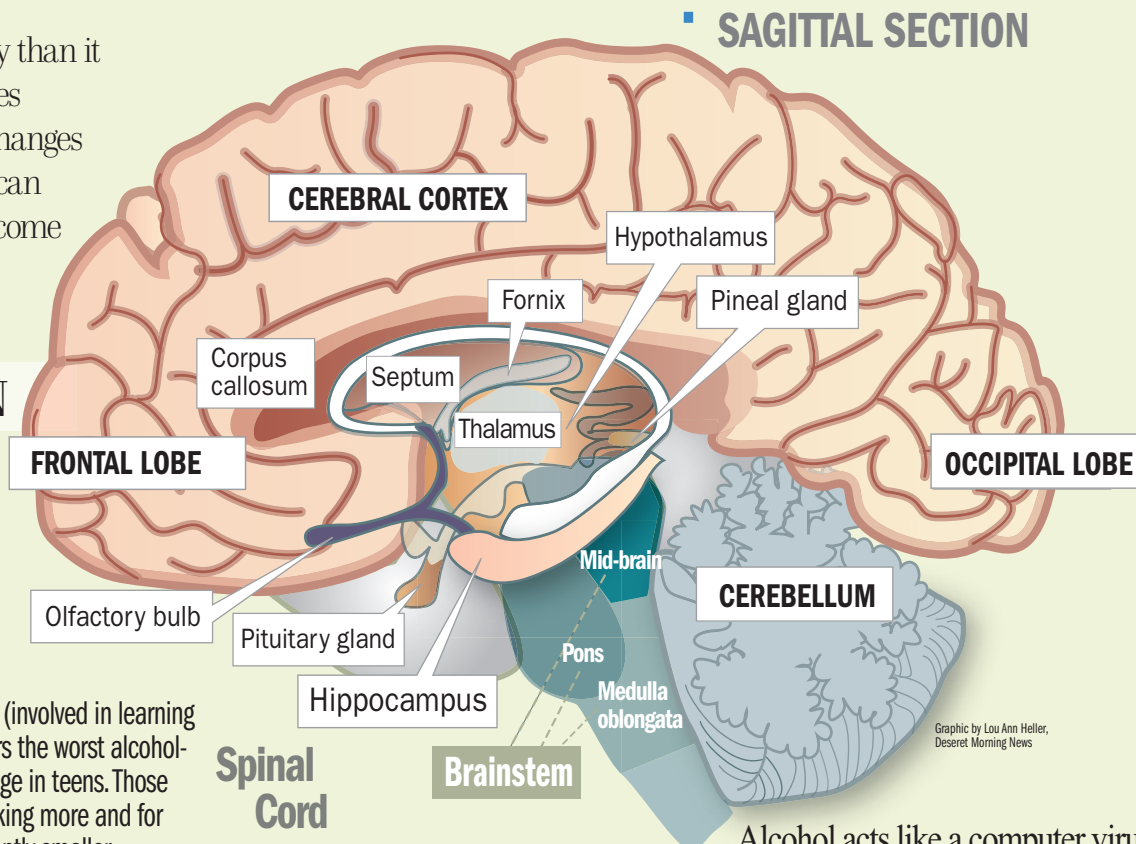
About the brain:

The **brain** is the major organ of the central nervous system and the control center for all the body's voluntary and involuntary activities. It is responsible for everything we think, feel, see, say and do.

The **brainstem** controls vital body functions, such as breathing and digestion. The **cerebellum's** main functions are the maintenance of posture and the coordination of body movements. The **cerebrum**, which consists of the right and left cerebral hemispheres, is the site of most conscious and intelligent activities.

ALCOHOL AFFECTS a teen brain differently than it affects a mature adult brain. The brain goes through rapid development and "wiring" changes during the ages of 12 through 21. Teen alcohol use can damage this brain wiring, which is essential to become a mature, thoughtful, responsible adult.

THE BRAIN



Alcohol can damage two key brain areas:

"The **prefrontal** area (responsible for thinking, planning, good judgment, decision-making and impulse control) undergoes the most change during adolescence. Researchers found that adolescent drinking could cause severe changes in this area ... which plays an important role in forming adult personality and behavior. Damage from alcohol at this time can be long-term and irreversible."

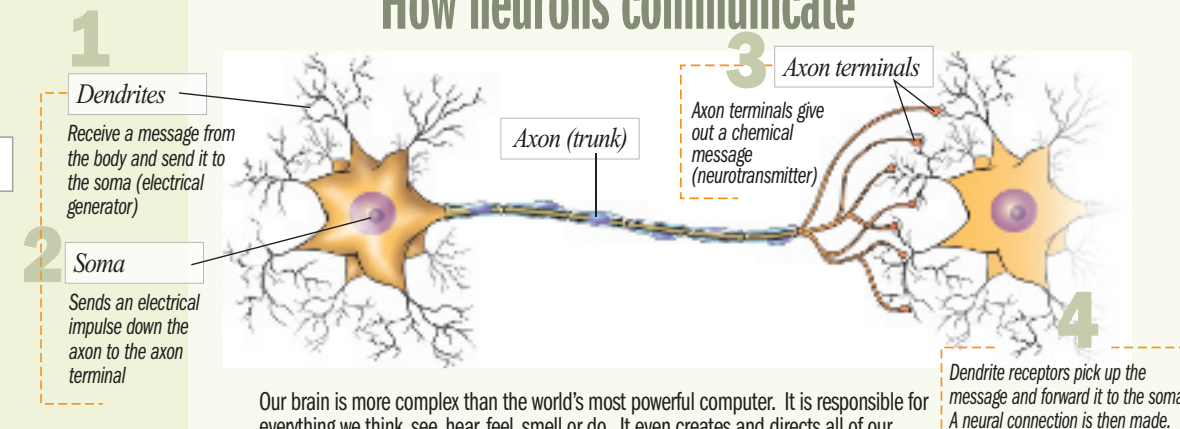
"The **hippocampus** (involved in learning and memory) suffers the worst alcohol-related brain damage in teens. Those who had been drinking more and for longer had significantly smaller hippocampi (10 percent). In addition, short-term or moderate drinking impairs learning and memory far more in youths than adults. Frequent drinkers may never be able to catch up in adulthood, since alcohol inhibits systems crucial for storing new information."

American Medical Association Fact Sheet, 2003

Alcohol acts like a computer virus in the brain by:

- ▶ Slowing or shutting down brain activity.
- ▶ Deleting or distorting neural messages.
- ▶ Damaging neuro-connections.
- ▶ Hindering formation of mature brain wiring.
- ▶ Rewiring a brain's pleasure-reward system, which can lead to alcohol dependence/addiction.

How neurons communicate



Our brain is more complex than the world's most powerful computer. It is responsible for everything we think, see, hear, feel, smell or do. It even creates and directs all of our emotions. The brain is divided into different areas that direct different parts of our body. Like a complex computer, all the different parts of the brain can work at the same time - like parallel processing.

It does this through more than 100 billion brain cells called neurons. A neuron looks sort of like a tree, with "branches" called dendrites, a "trunk" called an axon, and "roots" called axon terminals. The tip of each "root" contains tiny sacks of powerful chemicals called neurotransmitters. At the top of the "trunk" is a tiny electrical generator called a soma.

The brain neurons communicate by sending electrical and chemical messages from the "roots" of one neuron to the "branches" of another. If a thought or action is repeated often, the "roots" of one neuron send more chemical, and the receiving neuron makes more "branches" to receive it. The neural connection is strengthened until it begins to look like a bushy tree instead of a spindly tree. It becomes a dominant neural pathway.

40 percent of our neurons are "wired" at birth. They perform automatic functions such as breathing, heart and lung functions, digestion, etc. The other 60 percent are waiting to be stimulated by our learning and experiences to make connections or "wiring." When we learn new things or do new activities, new "NEURAL CONNECTIONS" are made in our brain. This is referred to as "wiring" our brain. It is like loading new software into a computer so it can do more things. The more neural connections we make, the smarter and more capable we become.

Alcohol and judgment

The teenage brain is still developing. Alcohol can impair the parts of the brain that control the following:

- ▶ **Motor coordination.** This includes the ability to talk, drive and process information.
- ▶ **Impulse control.** Drinking lowers inhibitions and increases the chances that a person will do something that they will regret when they are sober.
- ▶ **Memory.** Impaired recollection and even blackouts can occur when too much alcohol has been consumed.
- ▶ **Judgment and decision-making capacity.** Drinking may lead young people to engage in risky behaviors that can result in illness, injury and even death.



Risks associated with underage drinking

Alcohol use among children is strongly correlated with violence, poor academic performance and other harmful behaviors. Education alone will not keep your kids from using alcohol because there are constant pressures and opportunities to drink.

ALCOHOL POISONING

Most kids have not yet developed the “cut-off” switch that makes them go to sleep or pass out from too much drinking. They can consume dangerous amounts of alcohol before they realize it’s too late. This can result in alcohol poisoning, which can cause difficulty breathing, unconsciousness and death. Binge drinking can and *does* kill – killing as many young people as all other drugs combined. If a young person ever passes out from drinking, 911 should be called for immediate medical attention.

Further, the areas of the brain that encourage impulsivity and risk-taking develop early in a teen, while the areas that improve self-control don’t develop until the very late teens or early twenties. You must stay actively involved as a parent in bonding with your teen, setting boundaries and monitoring to help your teen remain alcohol-free.

Violence

Children who start drinking before age 15 are 12 times more likely to be injured while under the influence of alcohol and 10 times more likely to be in a fight after drinking, compared with those who wait to drink until they are 21.

School

Teens who use alcohol have higher rates of academic problems and poor performance than non-drinkers. Among eighth-graders, higher truancy rates are associated with greater rates of alcohol use.

Promiscuity

Alcohol use by teens is a strong predictor of unprotected sexual activity and unwanted sexual advances.

Illicit drug use

More than 67 percent of young people who start drinking before the age of 15 will try an illicit drug. Children who drink are 7.5 times more likely to use any illicit drug, more than 22 times more likely to use marijuana and 50 times more likely to use cocaine than children who never drink.

53.4% of current alcohol users age 12-20 last drank at someone else’s home.

30.3% of current alcohol users age 12-20 last drank at their home.

Stay in contact

Be aware that studies show kids are more at risk for alcohol between the hours of 3 p.m. and 6 p.m., while many parents are still at work.

Find ways to check on your kids when you are not around, either with phone calls, text messaging or through a neighbor dropping by.



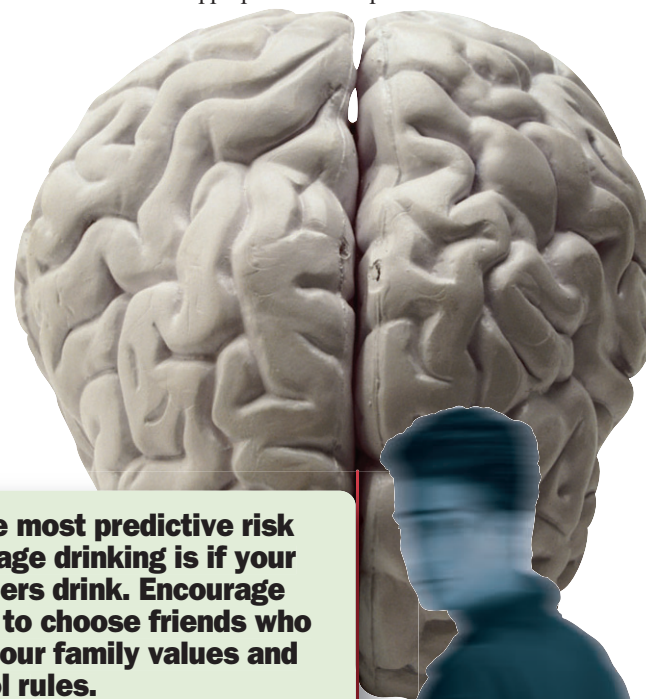
Friends and **peers**

Students with high-refusal-assertiveness skills are less likely to drink underage. Decide good ways to say “no” and practice them often in role-play situations. Some ideas are:

- *“No thanks. Drinking is not my thing.”*
- *“No thanks. I need all the brain cells I’ve got.”*
- *“No thanks. I’ve only got one brain. Why would I want to trash it?”*
- *“No thanks. Under the new Use & Lose law, I can lose my driver’s license just for holding a beer!”*

Help your child to choose friends wisely

Get to know your child’s friends and their parents. Discuss your no-alcohol rule with the parents and enlist their support. Ensure that teens and their friends have planned activities with appropriate adult supervision.



The single most predictive risk for underage drinking is if your child’s peers drink. Encourage your kids to choose friends who support your family values and no-alcohol rules.

The law

Possessing, purchasing or drinking alcohol before age 21 is illegal.

It is illegal for anyone to furnish or supply alcohol to anyone under 21 – punishable by up to 12 months in jail.

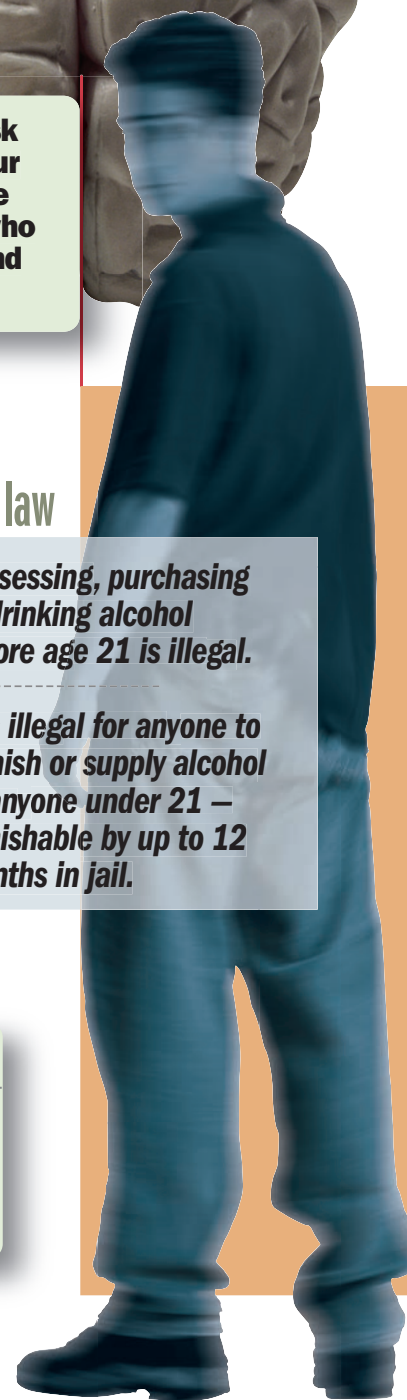


If there is alcohol at a party, LEAVE.

Keep your social environment alcohol-free.

Peers

Children often think that other people their age are drinking regularly, but most are not.



Encouraging news

Central to this media campaign to eliminate underage drinking is the encouraging news that studies show parent disapproval is the **No. 1** reason children choose not to drink alcohol. Parents empowered can trump peer pressure.

The most effective parenting techniques are among the most simple, including:

- Set clear rules about no underage drinking
- Know where your children are and whom they are with
- Know your children's friends
- Ensure your children's social environments are alcohol-free
- Have daily, positive communication and interaction with your children
- Eat dinner together

Research shows teens who regularly eat as a family (5-7 times per week) are **33 percent** less likely to use alcohol.



Most parents don't realize they are the No. 1 influence in their children's lives.

When parents were asked to draw the greatest influences on their teens, they placed themselves last.



When teens were asked to draw the major influences in their lives, they placed their parents first, before peers and activities.

Teen's view



HAWAII'S USE AND LOSE LAW - YOU DON'T EVEN HAVE TO BE DRIVING!



If you are under 21, you can lose your license for drinking, buying, or holding alcohol, and you DON'T have to be driving.

For more information visit teenlinehawaii.org or call

Coalition for Drug Free Hawaii at 808-545-3228



FUNDED IN PART
BY THE
HAWAII STATE DEPARTMENT
OF HUMAN SERVICES



Additional Online Parent Resources

**Stop Underage Drinking
Portal of Federal Resources**
www.stopalcoholabuse.gov

**Leadership to Keep
Children Alcohol Free**
www.alcoholfreechildren.org

**Underage Drinking
Enforcement Training Center**
www.edetc.org

**Substance Abuse and Mental Health
Administration, Office of Applied
Studies, Underage Drinking**
www.oas.samhsa.gov/underage.cfm

Mothers Against Drunk Driving
www.madd.org

Center on Alcohol Marketing & Youth
www.camy.org

Centers for Disease Control and Prevention
[www.cdc.gov/alcohol/quickstats/
underage_drinking.htm](http://www.cdc.gov/alcohol/quickstats/underage_drinking.htm)

**The Cool Spot – NIAAA
Website for Middle Schoolers**
www.thecoolspot.gov

Thank you for taking the time to read this publication. We are continually trying to improve our educational programs. Please take a moment to visit our website <http://survey.hawaii.counterdrug.org> and leave comments or suggestions.



You have more power over the choices your children make than you realize.



Become a Parent Advocate

We can all do things to help our children make good choices about alcohol. In fact, everyday citizens in communities across Hawaii are working together to limit alcohol access by young people. Some issues these groups are working on include:

- **Alcohol at underage parties:** When adults allow minors to drink, or provide alcohol to minors, they are committing a crime. In addition, teenagers interpret it as a blanket permission to drink – even when adults are not around. Adults should not allow underage drinking in their presence, homes or on their property under any circumstances.
- **Alcohol advertising:** Americans are subjected to \$4 billion in alcohol marketing each year in the form of advertising and product placements on youth-oriented television and radio shows, internet advertising and movies. Restrict alcohol advertising and promotions targeting the youth market.
- **Alcohol and Minors:** Do not purchase or provide alcohol for people under 21.
- **Liquor licenses:** Businesses that sell or serve alcohol must be diligent in training and educating employees on Hawaii liquor laws. County Liquor Commission members can fine and/or terminate liquor licenses for failing to comply with laws.
- **Alcoholic energy drinks:** A new wave of energy drinks which contain both stimulants (e.g. caffeine) and alcohol have hit retail market and are marketed directly at young adults. The packaging of these drinks are extremely similar to energy drinks which do not contain alcohol. Write to alcoholic energy drink manufacturers and request they redesign product packaging to clearly state the alcohol content.
- **Check ID's:** Every time alcohol is purchased, the sales clerk should check the ID of the purchaser. Many businesses have begun the practice of requesting the ID of everyone who looks under 30 when purchasing alcohol. Encourage sales clerks to do the right thing and ask for an ID on all alcohol purchases.