

The American Issue

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MR Images Show How Fetal Alcohol Exposure Affects Children

By Medimaging International staff writers Posted on 08 Jan 2013

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Children exposed to alcohol during fetal development show brain structure and metabolism alterations that can be seen using various imaging techniques.

The study's findings were presented November 25, 2012, at the annual meeting of the Radiological Society of North America (RSNA), held in Chicago (IL, USA). Alcohol use by expectant mothers can lead to problems with the mental and physical development of their children—a disorder known as fetal alcohol syndrome. Research suggests an incidence of 0.2 to 1.5 per 1,000 live births, according to the US Centers for Disease Control and Prevention (Atlanta, GA, USA). Costs for care of individuals affected by fetal alcohol syndrome in the United States have been estimated at USD 4 billion yearly.

Developments in magnetic resonance imaging (MRI) technology are providing extraordinary clues into the effects of alcohol on the central nervous systems (CNS) of children whose mothers drank alcohol during their pregnancy. Recently, Polish researchers used three different MRI techniques to better define these effects.

The study group consisted of 200 children who were exposed to alcohol during their fetal stage and 30 children whose mothers did not drink while pregnant or during lactation. Researchers used MRI to evaluate the size and shape of the corpus callosum, the bundle of nerve fibers that forms the major communication link between the right and left halves of the brain, in the two groups. Prenatal alcohol exposure is the major cause of impaired development or complete absence of the corpus callosum.

The MRI scan findings showed statistically significant thinning of the corpus callosum in the children exposed to alcohol compared with the other group. "These changes are strongly associated with psychological problems in children," said Andrzej Urbanik, MD, chair of the department of radiology at Jagiellonian University (Krakow, Poland).

Dr. Urbanik and colleagues also employed diffusion-weighted imaging (DWI) to study six areas of the central nervous system in the children. DWI maps the diffusion process of water and can be a more sensitive means than traditional MRI for detecting tissue abnormalities. Children in the alcohol group exhibited statistically considerable increases in diffusion on DWI compared with the other children. "The increase of diffusion indicates neurological disorders or damage to the brain tissue," Dr. Urbanik said.

To noninvasively assess metabolism in the children's brains, the researchers used proton (hydrogen) magnetic resonance spectroscopy (HMRS), a typical addition to structural MRI scans. HMRS findings revealed a complex collection of metabolic changes. "In individual cases, we found a high degree of metabolic changes that were specific for particular locations within the brain," Dr. Urbanik said. ♦

From the National Organization on Fetal Alcohol Syndrome:

There is no safe amount or type of alcohol to consume during pregnancy. Any amount of alcohol, even if it's just one glass of wine, passes from the mother to the baby. It makes no difference if the alcohol is wine, beer, or liquor (vodka, rum, tequila, etc.)

A developing baby can't process alcohol. Developing babies lack the ability to process alcohol with their liver, which is not fully formed. They absorb all of the alcohol and have the same blood alcohol content as the mother.

Alcohol used during pregnancy can result in FASD. An estimated 40,000 newborns each year are affected by FAS, Fetal Alcohol Syndrome, or have FASD, Fetal Alcohol Spectrum Disorders, with damage ranging from major to subtle.

1 in 100 babies have FASD, nearly the same rate as Autism. FASD is more prevalent than Down Syndrome, Cerebral Palsy, SIDS, Cystic Fibrosis, and Spina Bifida combined. Alcohol use during pregnancy is the leading preventable cause of birth defects, developmental disabilities, and learning disabilities.

Australia's new non-drinking puritans

By Madeleine Morris / BBC News Magazine / 27 February 2013

Australia is known for its hard-drinking men and women rarely seen without a "tinny" of beer in hand, but something is changing. In some circles, ordering lemonade instead of lager is no longer seen as "soft" - it's fashionable. Mark Hobart is a typical, urban 30-something Australian male. He and his wife work hard at their office jobs, and to unwind they will often have a few beers of an evening, or share a bottle of wine. On weekends it's generally more. Hobart is by no means an alcoholic, but since he first started sneaking the occasional beer with his school friends aged 13, alcohol has been an ever present feature in his life. But for most nights this past month, Hobart hasn't touched a single drop. He hasn't given up forever, but says he is trying to "change his relationship with alcohol" by actively abstaining. "I felt like I was just drinking all the time and I'm at a point in my life where it's probably not doing a world of good for my health, so I thought I'd just go without for a while, and see how it goes."

Hobart is part of a growing number of Australians who are rejecting the notion that not drinking is a personality flaw. One in eight Australian adults has never had a drink, according to the National Drug Strategy Household Survey Report, double the number of 20 years ago. The figures for teenagers tell a similar story. In 1999, more than half of all 16- and 17-year-old secondary school students reported drinking in the previous seven days. By 2011 it was only a third. "We've still got a massive drinking problem in Australia," says Geoff Munro, the head of policy at the Australian Drug Foundation. "We've got a lot of people still regarding getting drunk as entertainment, but we've also got an undercurrent of people saying enough is enough."

One of the leaders of the abstention movement is Chris Raine, an affable 26-year-old former public school boy, who sold bootlegged liquor in his school dormitory before a damascene moment about his own drinking led him to start Hello Sunday Morning (HSM), a charity that encourages people to take a break from booze for between three and 12 months, and blog about it. "You'd think that if you go into a bar and tell people your job is to tell people not to drink for three months then they would scatter, but people are really interested," he says over a chocolate milkshake in a trendy Melbourne cafe.

HSM's aim is not to get people to quit drinking altogether, but to help them examine their relationship with alcohol, by soberly facing social situations where they would normally drink. And it seems to work. Since Raine began HSM four years ago, 8,500 people have signed up. According to the organization's own surveys, 12 months after completing an alcohol-free period, the average participant's alcohol consumption is 70% less than it was when they began the program. Raine thinks that although HSM's reach is still small, it is tapping into a changing mood in Australia. "I think there's a real change in the culture. People seem to be becoming more savvy about the things in their life that they don't necessarily have to have. And people are more conscious of their health."

And if the prospect of three months without booze is a little too much, Australians have plenty of other opportunities to give their livers and wallets a break. Step forward FebFast, Dry July and Oc-sober. Taking time off booze has become so popular that enterprising charities have jumped on the bandwagon. Instead of skydiving or running a marathon to raise money for a good cause, Australians can now be sponsored to stay sober for a month. According to FebFast's organizers, since its inception six years ago it has achieved 700,000 drink-free days by registered participants. In reality the number is likely to be many times that, as thousands more people are believed to stop drinking for February without officially signing up.

But Munro, of the Australian Drug Foundation, warns that although the trend towards short periods of abstention is growing, it doesn't necessarily mean that Australia's relationship with alcohol is maturing. "There are signs that there is a new awareness of the cost of binge drinking in Australia, but there are also signs that it is a major problem causing major harm." While fewer people may be drinking, those who are drinking are often consuming more. A survey of 5000 young people in the southern state of Victoria in 2009 found that 42% had consumed 20 or more drinks in a day in the previous 12 months. The figure in 2002 was 26%. And alcohol-related violence is prevalent. As many as 70,000 people are involved in alcohol-related assaults every year.

But while alcohol abuse remains a major problem for Australian society, Shanna Zemek, a 21-year-old student who didn't drink for three months in 2011, believes even one person changing their relationship with alcohol can have a wider effect. "We're not going to change alcohol abuse in the next 10 years, but if enough young people like me talk about it then that will make the difference," she says. "Even though my friends initially thought I was lame for doing it, it was a massive realization for them when they would come out with me and not drink for a night and discover that they could still dance and meet people. Once they tried they realized it's not that hard." ♦

Drinking and Jesus Turning Water to Wine

By Dr. Mark Creech

The late comedian, Milton Berle, once said he had a friend who swore the Bible condoned getting drunk. He argued the Scriptures taught that the one who sins should be stoned.

I've heard a lot of erroneous arguments myself made from the Bible in favor of drinking. But none more egregious than the one that advocates Jesus endorsed imbibing when he made water into wine at the wedding in Cana. I don't always have the occasion to challenge this assertion, but when I do, I like to ask the proponent to show me, prove that Jesus made an intoxicating beverage that was harmful. Never has anyone ever been able to do more than show the argument is based squarely on assumption. The facts just don't sustain it.

The Greek word translated wine in chapter 2 of John's Gospel is the word *oinos* – a generic term that does not always refer to a fermented beverage. John D. Freeman has accurately written:

“Throughout ancient times the word was used to refer to fruit juices, primarily grape juice, without regard to whether or not it was fermented, or had turned to vinegar. Recipes for preparing various kinds of wines without fermentation have been preserved by writers of antiquity; and the common practice of boiling their wines, and also of largely diluting them, showed that the action of fermentation was not regarded by the ancients as essential to the existence of *oinos*. Many authorities agree that the Greek use of *oinos* included fresh grape juice.” [1]

So whether one believes that Jesus made an intoxicating wine or a non-intoxicating wine at the wedding in Cana is purely a matter of personal interpretation. For the Bible never definitively says that Jesus turned water into alcoholic wine. There are, however, a number of reasons why this writer believes the preponderance of the evidence is against Jesus having made an intoxicating beverage. There is a sense in which God himself turns water into wine year after year in vineyards everywhere around the world. The rains fall from the heavens, the roots take in the moisture, the sunshine, and process the elements. Slowly comes the bloom on the branches, the grapes then form and ripen. In the miracle at Cana, Jesus simply sped up the process.

Fermentation, however, is something that comes about via decomposition. It makes no sense that Jesus would create something pure and at the peak of perfection and then drive it rapidly through the course of fermentation. It's true he could have done it, but why would he do such a thing? The miracle was meant to show the glory of Christ's person. Making what would have amounted to 120 gallons of a dangerous drug, while giving no restriction for its use, certainly isn't consistent with a manifestation of his magnificence. It makes no sense and runs counter to Christ's spotless integrity to purposely corrupt what was natural and healthy for a recreational mind-altering substance.

The concept itself defames the very character of Jesus and puts him in violation of the spirit, if not the letter of the law of God, which reads, “Woe to him who gives drink to his neighbors, pouring it from the wineskin till they are drunk, so that he can gaze on their naked bodies. You will be filled with shame instead of glory” (Hab. 2:15, 16).

With something of a modern parallel, David Brumbelow in his book, *Ancient Wine and the Bible*, states the scenario Jesus would have never created at the wedding in Cana:

“You can be assured that as the guest returned home they were not guilty of drunk walking, drunk donkey riding, or drunk chariot racing. No drunk men went home that day and beat their wives and children.” [2]

Moreover, if one was to assume Jesus drank such wine in participation with the wedding guests, as some have argued, then that act in itself would have violated Proverbs 31:4-5, which reads, “It is not for kings, O Lemuel – not for kings to drink wine, not for rulers to crave beer, lest they drink and forget what the law decrees, and deprive all the oppressed of their rights.” Is not Christ the King of kings? Is it reasonable to think the very Son of God would take into his body a recreational intoxicant, risk falling into sin, and endanger the great mission of the redemption of mankind? Banish the thought!

Moreover, it should also be noted that Jesus' first miracle – the turning of the water into wine – was a sign of the new covenant God was making. The writer of Hebrews explains, “For this reason Christ is the mediator of a new covenant, that those who are called may receive the promised eternal inheritance – now that he has died as a ransom to set them free from the sins committed under the first covenant” (Heb. 9:15). It besmirches the fresh, sweet, stainless, incorruptible nature of the new covenant that Christ brings with a beverage of fermentation. The word “ferment” itself means agitation, unrest, commotion, tumult, turmoil and mayhem. These are all matters the new covenant in Christ remedies, erases, and corrects in life. If the miracle of turning water into wine was the creation of a beverage inflamed with alcohol, then these negative associations would seem to tarnish the purity of that holy covenant.

This author understands many fine, even devout Christian people, disagree with the argument that the wine Jesus miraculously provided at Cana was not fermented or intoxicating. But there is nothing in John's account or the Bible's teachings as a whole, where one may conclusively show an endorsement for the recreational use of alcoholic beverages.

(Continued on Page 4)

American Council on Alcohol Problems
2376 Lakeside Drive, Birmingham, AL 35244

PURPOSE: American Council on Alcohol Problems is the channel of cooperation through which state temperance organizations, national religious bodies and similar concerned groups and individuals in America can unite to deal with the problems caused by alcohol and other drugs. ACAP provides the forum and the mechanism through which concerned persons can find common ground on alcohol and other drug problems and address these issues with a united voice. It is the successor organization to the American Temperance League and the Anti-Saloon League established in 1895. Membership of ACAP presently is made up of 30 local temperance organizations, 22 national Christian denominations, and other fraternal organizations that support ACAP's philosophy of abstinence.

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(Continued from Page 3)

Hardly! Orin B. Whitmore has eloquently summarized the matter, saying:

“Is all wine ‘a mocker’? [Proverbs 20:1] Then it was a ‘a mocker’ that Jesus made for the guest at the wedding feast in Cana, and ‘a mocker’ which Jesus introduced to his disciples at the Passover table, and bade them to drink. Does all wine ‘bite like a serpent’ and ‘sting like an adder’? [Proverbs 23:32] Then Jesus made wine for the guests at Cana with the ‘bite of a serpent’ and the ‘sting of an adder’ in it. Do you believe it? No, a thousand times no! Did Jesus give to His disciples a cup in which were the ‘bite of a serpent and the sting of an adder,’ and tell them that cup contained that which represented his blood, His life-giving blood – shed for the remission of their sins? Do you believe it? No...” [3]

According to the World Health Organization, alcohol today is responsible for nearly 4% of deaths worldwide, more than AIDS, tuberculosis, or violence. [4] In the United States, its abuse is the third leading cause of preventable death and precipitates an economic drain on the nation’s resources of approximately \$223.5 billion annually. [5] This doesn’t even account for the costs of heartache that it endlessly brings to millions and millions of people.

If one believes the wine Jesus miraculously made at Cana was intoxicating in nature, much like those of today, then the burden of proof lies with those who believe this to decisively demonstrate it in the text, as well as explain why it seems to find no support in the entire context of Scripture. Furthermore, they must effectively answer the question of why Jesus would create and encourage the use of a hazardous and deadly drug. For this writer, effectively addressing these assertions from Scripture is about as provable as saying the Bible endorses drunkenness because it instructs the person who sins to be stoned. The preponderance of the evidence just can’t sustain such claims and makes them somewhat laughable. ♦

Resources

- [1] Freeman, John D. *Shadow Over America*. Nashville, Tenn., Convention Press, 1957, pgs. 89,90
- [2] Brumbelow, David R. *Ancient Wine and the Bible*. Carrollton, Ga. Free Church Press, 2011, pg. 142
- [3] Ibid, pg. 145
- [4] *Alcohol Kills More Than Aids, TB, or Violence: WHO*. Reuters, 11, February 2011, <http://www.reuters.com/article/2011/02/11/us-alcohol-idUSTRE71A2FM20110211>
- [5] *Alcohol and Public Health*. Centers for Disease Control and Prevention, 1 October 2012, <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>

All passages of Scripture quoted from the New International Version



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