

FROM THE DEAN OF BOYS' EDUCATION

ARTICLE BY PAUL DILLON ON ADOLESCENT ALCOHOL USE PART 2

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The article below by Paul Dillon follows on from the previous article on issues associated with adolescence and alcohol. The School has been very fortunate to have Paul speak to Year 12 during Pastoral Care week for over ten years on a range of drug and risk-related issues. He is arguably the country's leading drug educator and the article below provides parents with a very good examination of the issues surrounding adolescent alcohol use and brain development.

THE ADOLESCENT BRAIN AND ALCOHOL USE

Since the 1990s we have learnt a great deal about the developing brain. It was once believed that this complex organ finished developing around the age of 15 years. However, we now know it takes much longer and that during the dynamic changes that occur during adolescence, drinking alcohol can seriously damage long and short-term growth processes.

Before we look at alcohol's effects on the developing brain - let's first discuss what is different about a teenage mind. We all know that adolescence can be a troubled time but now we are beginning to understand why this is the case - and it's not just all about raging hormones and puberty! Certain parts of the brain are underdeveloped, particularly the prefrontal cortex (the part that deals with judgement, decision-making, planning and impulse control) and when teens make decisions they tend to use an alternative section - the amygdala (the emotional part of their brain). This results in a decrease in reasoned thinking and an increase in impulsiveness. This often leads us to think that somehow adolescent brains are 'defective' in some way but that's just not true. A professor of neurology was quoted as saying in the Harvard Magazine - "The teenage brain is not just an adult brain with fewer miles on it. It's a paradoxical time of development. These are people with very sharp brains, but they're not quite sure what to do with them."

What often defines adolescence is increased risk taking behaviour. In recent times we have come to understand what is actually happening here and why it occurs. Young people don't take part in risky behaviour because they want to hurt themselves and it's not that they don't understand the dangers - it's just that they weigh risk versus reward differently. As one academic is quoted as saying - "they don't downgrade the risk, they give more weight to the payoff."

So what about alcohol - where does that fit into the mix? Studies now show that drinking alcohol at intoxicating levels during adolescence produces permanent brain changes. 'Plasticity' is the term used to describe the brain's ability to physically change its internal structure when learning new things. During peaks of plasticity, the brain must make key neural connections to wire us to become fully functioning adults. Drinking alcohol during peak periods of plasticity damages this 'brain wiring'.

There are two parts of the brain that are affected by alcohol during the teen years - the prefrontal cortex and the hippocampus (the learning and memory area). Research has found that adolescent drinking could cause severe changes in the formation of adult personality, as well causing up to a 10 per cent reduction in the size of the hippocampus, reducing memory and learning capacity. It is now believed that young people who drink regularly who are affected in this way may never be able to catch up in adulthood.

The message is clear - alcohol and the developing brain do not go together. If a young person is going to drink during this period they should not drink much and they should certainly not drink regularly. However, the evidence clearly indicates that they should not drink at all if at all possible.

Not only does the School focus on these issues with Year 12 during Pastoral Care Week in Term 4, we also have an extensive emphasis on risk-taking and the 'party scene' during this term with Year 10 as part of the Life Skills programme. For more details, please refer to an overview provided on our website by clicking here. (http://www.trinity.nsw.edu.au/navbar/student_support/docs/pas_lifeSkills.pdf)

You can also access a range of resources and fact sheets on Paul Dillon's site at <http://darta.net.au/>. As was written last week, risk-taking is natural for boys and is a normal part of growing up. However dangerous risk taking behaviours associated with adolescent alcohol use can have serious negative consequences.



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