College is a great time to learn about oneself and begin to make important choices and decisions about the future. It’s also a time to expand one’s knowledge, which is why understanding Brain Health is important.

Brain Health is related to Lifestyle. If we want to have healthy brains it’s important to understand how to take care of ourselves.

Some of the key factors associated with Brain Health include; Nutrition, Sleep, Exercise, Mental Fitness, Stress Reduction, Social Connection and Physical Health.

**Nutrition** is fuel and vital to a healthy brain. “Your brain is always on” It takes care of your thoughts and movements, your breathing and heartbeat, your senses — it works hard 24/7, even while you’re asleep. This means your brain requires a constant supply of fuel. That “fuel” comes from the foods you eat — and what’s in that fuel makes all the difference. “Put simply, what you eat directly affects the structure and function of your brain and, ultimately, your mood” ([**Nutritional psychiatry: Your brain on food**](#))

**Sleep** is important to the brain. This is a time when the brain rests and resets itself. When we are tired, we worry more, experience more stress, are subject to emotional dysregulation, have less tolerance, encounter disorganization and have difficulty problem solving.

**Physical Health and Exercise** keeps everything flowing throughout the body and the brain through “both direct and indirect means. The benefits of exercise come directly from its ability to reduce insulin resistance, reduce inflammation, and stimulate the release of growth factors—chemicals in the brain that affect the health of brain cells, the growth of new blood vessels in the brain, and even the abundance and survival of new brain cells. Indirectly, exercise improves mood and sleep, and reduces stress and anxiety. Problems in these areas frequently cause or contribute to cognitive impairment” ([**Regular exercise changes the brain to improve memory, thinking skills**](#))

**Read:** [The Mental Health Benefits of Exercise](#)

**Stress** can influence the physiology of the brain and effect memory, depression and cognitive functioning. Finding ways to relieve stress can improve brain health. There are many ways to reduce stress. Some stress reduction techniques include meditating, breathing exercises, talking to a friend, walking, exercising and nutrition, sleep, dancing, or simply listening to music. Other ideas involve aromatherapy; lavender, yoga, Tai chi or simply taking a time out reading a good book. How we manage our stress matters.

**Mental Fitness** “Build Your Brain Reserve. We all have something called “brain reserve,” which helps our brain adapt and respond to changes and resist damage. Your brain reserve begins to develop in childhood and gets stronger as you move through adulthood. People who continue to learn, embrace
new activities, and develop new skills and interests are building and improving their brain reserve” (Cleveland Clinic - Healthy Brains)

Social Connection improves self-esteem and empathy, lowers rates of anxiety and depression and increases longevity. To learn more about Social Connection and Health check out this infographic from Stanford Medicine: Connectedness & Health: The Science of Social Connection

What about Alcohol and Brain Health?

According to research, “If you are 25 years or younger and you drink to excess even once a week, your brain may exhibit some deficits as a result of binge drinking. The ability to pay attention and use visual working memory could be compromised. Drinking to excess or Binge drinking is defined as drinking five or more standard alcohol drinks for males, and four or more for females within a two-hour interval. In the United States, up to 45 percent of college students report binge drinking or heavy drinking episodes at least once a week. Much of our brain develops early in life, but some regions of the brain continue to develop until age 25. Researchers say it is those very regions that are affected most by heavy episodic drinking” (How Binge Drinking Affects Attention and Memory)

Episodic drinking becomes a means to be social, and influences interactions, and perception. Having “one more” drink than before influence an individual’s tolerance level and what use to be two drinks becomes three and then four.

Sometimes college students say, I’ll stop in a couple of years or when I “get older”, “have a family” or “begin a career” and then … it becomes more difficult. It’s natural for our bodies and brains to develop tolerance because our brains and bodies are trying to protect us, the brain and body adjust to the alcohol being consumed and begins to believe alcohol is necessary to function and perception changes and people begin to believe they need to alcohol to function crediting alcohol to social attributes and interactions. With this belief many people continue to drink, still all the while thinking with moderate use, they would be able to manage negative consequences associated with alcohol use, however a recent British study reported after “decades of observational studies, of moderate drinking — (defined as no more than one drink a day for women and two for men — (A drink equals 1.5 ounces of 80-proof spirits, 5 ounces of wine, or 12 ounces of beer), moderate drinking is associated with shrinkage in areas of the brain involved in cognition and learning) (This is Your Brain on Alcohol).

“What they found was that higher alcohol consumption was associated with a greater decline in some language skills, even in those only having four to eight drinks per week. The researchers also discovered that those who drank more than eight alcoholic beverages per week had a greater loss of volume in the hippocampus, which is the brain region associated with memory and Alzheimer’s disease. Based on these findings, the researchers argue that the current U.S. guidelines for safe drinking—one drink per day for women and two for men—may be too high” (New Study States Light Drinking Can Harm Your Brain)
Alcohol and the Brain- A Scary Combination

Others will say that having a drink a day, or glass of wine is good for cognitive health, however more research is revealing that this may not be as conclusive as many have been led to believe. “Some studies have shown an association between moderate alcohol intake and a lower risk of dying from heart disease. But it’s hard to determine cause and effect from those studies, says McEvoy. Perhaps people who sip red wine have higher incomes, which tend to be associated with more education and greater access to healthier foods. Similarly, red wine drinkers might be more likely to eat a heart-healthy diet.

There is some evidence that moderate amounts of alcohol might help to slightly raise levels of “good” HDL cholesterol. Researchers have also suggested that red wine, in particular, might protect the heart, thanks to the antioxidants it contains. But you don’t have to pop a cork to reap those benefits. Exercise can also boost HDL cholesterol levels, and antioxidants can be found in other foods, such as fruits, vegetables and grape juice” (Alcohol and Heart Health: Separating Fact from Fiction). In addition to heart health, our brains also benefit from diets rich in antioxidants, Consuming Fruits, vegetables and exercising is also good for our brain (12 foods to boost brain function)

After Alcohol leaves the body

The latest research on the topic was a meta-analysis of several studies that examined brain impairment hours to a day after heavy drinking. With few exceptions, these studies showed that our cognitive abilities, like attention and memory, are debilitated even when alcohol in the blood is no longer measurable. Online: A systematic review of the next-day effects of heavy alcohol consumption on cognitive performance

“Impaired performance in these abilities reflects poorer concentration and focus, decreased memory and reduced reaction times,” said lead study author Craig Gunn of the Department of Psychology at the University of Bath” Innovation

“Why this happens is largely about how embattled our bodies and brains are from the chemical assault that comes with heavy drinking (defined by the CDC as more than four drinks for women or more than five for men). Alcohol is a potent diuretic that causes the body to lose a lot of liquid, up to four times what’s consumed while drinking, leading to dehydration. To compensate, organs draw in as much fluid as they can, leaving the brain fighting to stay hydrated. As a result, the brain dura—the membrane that encases the brain and spinal cord—actually shrinks.

As all of this fluid is leaving our bodies, magnesium, potassium, sodium and other nutrients necessary for stable cognitive functioning are flushing out as well. Those nutrients aren’t immediately replaced once the alcohol is gone, nor do the depleted membranes instantly bounce back. Recovery from the ethanol siege takes time.
Alcohol and the Brain- A Scary Combination

The brain won’t return to form for many hours, perhaps more than a day in some cases. And attention, memory, reaction time and decision-making abilities aren’t fully engaged until that happens. Believing we can jump right into our regular routines and perform as usual is unrealistic, as this research analysis shows”

Online: How Long Does It Take For The Brain To Recover From Drinking? Science Says Longer Than We Think

For More Information check out USM Substance Misuse Prevention

Curious, check out ScreenU on the University Health and Counseling web site.

For Comments on this, newsletter or suggestions for future articles please contact:

Diane Geyer, LCPC, LADC, CCS, NCC~ Coordinator of Clinical Substance Use Services at USM~

207-780-4050 Email: diane.geyer@maine.edu