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Co-founder, PRI


For so many of us, Prime For Life is not just something we do, it is something we live. It is one of the things that fulfills the need many of us have to make the world a little better place than we found it.

The 40th year of PRI has me thinking about so many things, and recently my attention turned to things that have surprised
me. At the time we are creating something there is no way to know its longevity, importance, where it will go, or what we will learn from it. That comes later by reflecting on what has transpired. This 40-year journey has had some surprises. Here are a few of them.

## The Power of Intensity

The first surprise that comes to mind is the role of intensity in bringing about change. For decades, our field has had data that treatment success is related to duration how long the person remains in treatment. As a result, decisions were made about how many days or weeks a treatment should last. This idea got ported into indicated prevention such as DUI programs, and many states adopted requirements that the program be spread out over several weeks in keeping with the idea that duration was important. It all made sense, but what do we do with data that a 15 -minute meeting with a doctor
at the right time can lead to change? What if duration is a proxy for something else? What if it is contact hours, or hours spent thinking, or intensity of the experience versus how many weeks it encompasses? I saw a TEDx talk recently where a professor experimented with students experiencing a whole semester in one immersive week. He made some great points, and it made me think of our experience with Prime For Life.
 on others wanted to do the entire DUI program in a weekend plus a couple of evenings, I was skeptical. It seemed to fly in the face of everything we knew - or thought we knew - about what works. But I was wrong. When I attended a weekend class, I admit I entered with a bias that it would not work well. People would be tired and not able to process it all - or so I thought. The reality was quite different. People
were engaged and were thinking deeply. They experienced intensity. The Transtheoretical Model of Change tells us emotional arousal is one of the processes of change, and I suspect intensity begets emotional arousal. Is this a reason why weekend programs seem to work? Do we lose intensity when we spread it out over weeks? I don't know, but we are continuing to learn. I love it when our instructors or systems teach me something new!

## Snapshots in Time vs. The Long View

In the 1970s when I started the work that led to Prime For Life, there were exactly zero alcohol and drug prevention programs that demonstrated behavior change. Zero. Clearly there was a deep flaw in how we were going about it and I wanted to find a better way. I began reviewing research on the causes of addiction, on how change happens, and how to communicate in ways that promote change. I literally went through thousands of studies to find several hundred that might shed light on how to make prevention education work. I highlighted like mad and made copies of the abstracts and put them on $4 \times 6$ cards and ended up with a stack that was about $18^{\prime \prime}$ tall. It was overwhelming. So, I set up four folding tables and started sorting them into stacks of articles that seemed to show related findings. (Office computers were not a thing back then.) Then I looked for relationships between the stacks and rearranged them again. By the end of the process, ideas began to emerge and that ultimately led to everything that became Prime For Life: the Lifestyle Risk Reduction Model (wow, this is like heart disease), the formula (wow, underneath the complication is something simple), the persuasion process (hey, this helps people think deeply), and later the phases (there is logic to how this progresses).

## $\int$ we get to the long view by taking care of everything in the moment

One of the things it took time to appreciate is how most research is a snapshot in time, and it takes a long time and multiple studies to sort out what is really going on. For example, research "snapshots in time" led many people to conclude addiction is caused by depression, based on the number of people with addictions who were also depressed in any given "snapshot." It took a fifty-year study to teach us that the relationship is a two-way street, with addiction sometimes preceding depression and depression sometimes preceding addiction. The common element in both was the amount of a substance used. If I use a lot in response to
depression, I am likely to become addicted. If I use a lot in response to my addiction, I am likely to become depressed. It is a reciprocal relationship, and we could only see it by taking the long view.

But the long view is not just for understanding research. It is also for delivery of the program. We ask a lot out of you, our instructors. Delivering Prime For Life is not for those who want to walk into class, push a button and go on social media while the group watches a video. It is a lot of work. And we ask you to pay attention to process and timing to allow the group time to do the deep thinking they need to make fundamental and lasting change. Sometimes it means holding back to give participants time to come to the conclusion on their own or to finish their thinking process. It has to do with what we call "Finish-Line Focus;" the ability to know not just what you are doing at any moment but why

## 3 Delivering Prime For Life is not for

 those who want to walk into class, push a button and go on social media while the group watches a video.you are doing it and how it ties into what is coming next and what the finish line is. Don't you love watching the process unfold and knowing they are likely to be in a different state of mind by the end of the program? I did not expect it at the beginning, but it is the long view that counts. And we get to the long view by taking care of everything in the moment and not getting ahead of ourselves. We come to trust the process and know if we take care of the process, the process will take care of the participants.

## The Sense of Mission

Another thing I never could have predicted is the incredible sense of mission so many instructors, and the PRI staff, develop. For so many of us, Prime For Life is not just something we do, it is something we live. It is one of the things that fulfills the need many of us have to make the world a little better place than we found it. I am touched and humbled every day by how many of you treat this work as a mission, a service, or even a calling.

## The Many Ways it Gets Applied

And I never expected the many ways people would apply PFL beyond their alcohol and drug choices. A DUI participant wrote me a letter one day thanking me for Prime For Life, saying she thought it saved her life - not because of her alcohol and drug choices so much as her heart disease choices. Others have applied the principles to weight loss, diabetes, budgeting, their marriage, and so many ways I

standing of not only how to do something, but why we are doing it at a particular moment and how this affects our clients, requires us to build our capacity for self-reflection. To understand this better, I've spent the last two years reading, thinking, training, and writing about a method called Self-Practice/Self-Reflection. If you've done one of our CE sessions titled Someone Good To Talk To you've gotten a taste of the Personal Practice Model (PPM), an evidence-based training approach that undergirds this process. If you haven't joined Michelle Stephen Seigel and me for one of these sessions yet, please do. Expect to hear more about this over the coming year, and in the interim check out the illustration Mike O'Bryan created about the PPM. TJ


PRACTITIONER EFFECTIVENESS


Michelle Stephen Seigel
Director of Program Development \& Training, PRI 4

The surprising thing about PFL is it keeps surprising me
even after 31
years!

Have I really taught Prime For Life for 30 years?! Pondering this, I realized it's actually been
31. Thirty-one years ago, in September of 1992, I was fresh out of college and recently hired by a non-profit agency who sent me away to training before I even stepped a high heel into the office. To Diane Thomas at SASC, let me formally say THANK YOU again, for taking a risk hiring me and knowing intuitively how I would fit with Prime For Life in my role working in school-based services, in treatment, and with impaired drivers.

Off I went to a 5-day training in all things Prime - TWYKAA, TWYSAA, TAADUI, and OCTAA - delivered by Ray, Terry, and Frosty. I never imagined this one training would chart the course of my career for the next three decades.

I recently had the opportunity to teach PFL
to real participants. As the Prime For Life Computer Application intro music played on my laptop to kick off the weekend, jail-based experience, I reflected on how the PFL setup has evolved over the last 30 years.

## Group Setup

In 1992, when I delivered to my very first PFL group, I was tethered to a slide carousel projector - look that up on Wikipedia if you have never had the luxury of using one!

The projector was precariously perched on an AV cart, which was plugged in close to the group room wall for power - a trip hazard for certain. Many a participant and instructor found that out the hard way. The group room lights had to be dimmed low to see the slides and the only "voice" to PFL was my voice.

# Alcohol and Adolescent Brain Development: 

 Dogma, Laws and Reasons for Caution

It is often stated that any amount of drinking could harm the adolescent brain since it is still developing. This is also one of the most common rationales given for the legal purchase age
Mark Nason
Research Analyst, PRI
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## Though most

 youth try alcohol prior to age 21, there is evidence that having legal age laws is a significant influenceon fewer teens drinking and
fewer engaging in HED
(Ahammer et al., 2022)
of 21. I get why this happens. When my children were younger, I wanted to have a good rationale to support the legal purchase age. Why? Because my experience and research told me that simply telling youth about the law and imposing consequences is often not enough to get compliance, especially in situations where risk of being caught is low. While "because I said so" might also seem to be a reasonable statement for many parents, it is often ineffective with teens. To be as persuasive as possible, discussions about alcohol with youth—particularly rebellious youth—best include valid risk information in addition to sharing values and expectations and providing consequences. I wanted something to make my parenting job easier on this topic. Unfortunately, science does not always give me what I want.

This article focuses on what we do know about the effects of alcohol on the adolescent brain, with a brief discussion of drinking laws and their relevance to prevention.

Over the 43 years I have been in the alcohol and drug field, I have heard many explanations as to why even low-level drinking could harm the adolescent brain. However, every time I delved into these claims, they turned out to be based on speculation rather than good evidence. Before getting into specifics, I want to make it clear that there is other research which suggests the legal minimum purchase age of 21 in the U.S. serves prevention goals. [More on this research after a deeper look at brain studies.]

From its inception, PRI has looked carefully at research on the effects of alcohol on the adolescent brain. Most recently, I examined several systematic reviews published in the past two years, as well as other relevant articles on the subject published in recent years. Each provides evidence for caution about adolescents drinking, yet none supports being dogmatic about abstinence being the only low-risk choice for adolescent brain development.

What does research say about the effects of alcohol consumption on adolescent brain development and cognitive functioning?

When it comes to the effects of low-level alcohol consumption on adolescents, we
know virtually nothing; and to our knowledge no research has been done on drinking within the 1-2-3 guidelines taught in Prime For Life ${ }^{\ominus}$ (PFL) (which include having food in the stomach and making downward adjustments for individual differences). More specially, all the studies we have seen with adolescent humans and animals were conducted with amounts and/or speed of consumption that are impairing for most adults (thus, high risk at any age), and most examined the effects of heavy episodic drinking (HED). [HED, commonly referred to as "binge drinking," is often defined in research as females consuming four or more, and males consuming five or more, drinks on at least one occasion within the past 30 days.]

The absence of research on adult-sized adolescents making low-risk drinking choices other than abstinence certainly gives reason for some degree of caution about youth consuming even low-levels of alcohol, particularly on a frequent basis (even when drinking at home with parents). As detailed below, though, such caution is best expressed carefully.

First, a little about the reviews themselves and more specifics about the research findings. A 2021 systematic review (de Goede, et al.) closely examined 77 studies with humans that met their inclusion criteria. Of these, 31 were judged by two independent researchers to be of sufficient quality to include in their review. Another (Kuhns, et al., 2022) only examined peer-reviewed studies which directly compared the outcomes between adolescents and adults, resulting in a review of 59 studies conducted with rodents and 4 with humans. An extensive overview of research on alcohol's effects on the adolescent brain was published as part of the 50th anniversary of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). (Tapert and Eberson-Shumate, 2022) This overview was based on a presentation by Dr. Susan Tapert, who is one of the leading researchers studying the effects of addictive substances on the adolescent brain. The effects of HED on adolescent brain development was systematically reviewed by Perez-García, et al. (2022). Of the 214 neuroimaging studies they examined, 33 met their inclusion criteria, with 10 of the 33 judged independently by two of the authors to be of high quality, 20 of intermediate quality, and 3 of poor quality. Since some brain differences could exist prior to the time adolescents start drinking, I also examined a review of 18 longitudinal studies begun prior to initiation of drinking (Boer, El Marroun, and Franken, 2022) and two recent studies on the effects of prenatal exposure on brain development (Long, and Lebel, 2022; Nakhid, et al., 2022).

More details on the effects of drinking on the adolescent brain structure and function and related issues

Results of studies of specific changes in brain structure and function from drinking during adolescence vary substantially. Below are some of the major results reported in recent reviews of the literature and some of their implications.

Animal and human studies indicate adolescents have less sensitivity to some of the negative/aversive effects of high doses of alcohol than do adults. You read that right—less sensitivity. For example, adolescents have less physical impairment and less sleepiness than adults at the same blood alcohol level. At first that might seem like adolescent use might be less risky than we thought, but as with most everything applying to adolescence, the full picture is more complicated. Adolescents who drink might also receive stronger reinforcement than adults. This combination of less impairment and more reinforcement would tend to encourage adolescents to drink amounts that are at least mentally impairing, and to drink for a longer time per occasion. And once impaired, adolescents are even more likely than adults to make impulsive, risky decisions (Kuhns et al., 2022). So, the complete picture is that adolescent brains might make high-risk use seem more appealing to those who use more than small amounts.

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Differences in gray matter and cortical thickness were found among adolescents who engaged in higher levels of drinking (de Goede et al., 2021; Tapert and Eberson-Shumate, 2022). In many studies the consequences of these differences were unclear. (de Goede et al., 2021) However, a review of studies looking specifically at HED found that changes in gray matter and its dendritic features among those who engaged in HED were associated with negative effects on executive aspects of working memory, impulsiveness, attention, visospacial skills, reward and motivation, and a later likelihood of heavier drinking and developing an AUD (Pérez-García et al., 2022). In contrast, no clear association has been found regarding the integrity
of white matter, and one of the higher quality studies with high school students found better working memory among those with higher alcohol consumption. The relationship of heavier drinking with some cognitive functions appears to be unclear (de Goede et al., 2021; Pérez-García et al., 2022). In sum, there is evidence of negative effects of a pattern of extensive drinking on prefrontal regions of the adolescent brain, which is still in development-resulting in poorer executive functioning of the brain (Pérez-García et al., 2022).

Reviewers of neuroimaging studies of brain activity levels in humans found evidence of several differences between adolescents who reported having engaged in HED and those who did not. For example, HED during adolescence is associated with greater response to alcohol cues in the environment, though this disappeared after a period of abstinence-unlike those who eventually developed an AUD. In addition, negative effects of HED on socio-emotional processing have been found, such as greater difficulty with controlling emotions after something negative happens (de Goede et al., 2021). Other neuroimaging studies found that while male adolescents who engaged in HED were able to perform some functions on an equal level with adolescents who did not engage in HED, they needed greater brain activity to perform these functions (Pérez-García et al., 2022; Squeglia, 2020).

The results summarized above indicate that heavier drinking has negative effects on adolescent brain structure and functioning but do not address the question of whether these negative effects are greater during adolescence than in adulthood. While the reviewers could not draw any clear conclusions from the comparative studies with human adolescents and adults, the animal studies which directly compared effects of drinking on brain functioning in adolescent and adult rodents provided evidence of greater effects during adolescence. In addition to the greater impulsivity and risk-taking when impaired mentioned earlier, there appears to be reduced working memory function during intoxication after extended exposure to alcohol (Kuhns et al., 2022). In contrast, the greater resilience of the adolescent brain might make reversal of these brain changes more likely once the adolescent stops or reduces their drinking, as compared to adults (Tapert and Eberson-Shumate, 2022; Kuhns et al., 2022).

One of the major difficulties in drawing clear conclusions about the extent to which heavier drinking harms the adolescent brain is due to the fact that longitudinal, prenatal, and epigenetic studies indicate some structural
differences likely existed prior to the initiation of drinking. [Epigenetic effects refer to environmental factors and some of our behaviors altering how genes function, without altering DNA. For more details, see https://www.livescience. com/37703-epigenetics.html.] More specifically, initiation of any drinking was predicted by pre-existing differences in structural areas of the brain responsible for the processing of rewards, motivation, and decision making. Some pre-existing structural differences were also found to predict later heavy drinking (Boer, El Marroun, and Franken, 2022). In addition, even low levels of frequent prenatal exposure to alcohol have been found to be associated with lower brain volumes in some areas of the brain (Nakhid et al., 2022; Long, and Lebel, 2022). Research also indicates having a family history of AUD, experiencing severe or repeated trauma in childhood, major depression, and poor sleep are associated with some brain differences and lower executive function prior to drinking. These factors also predict a greater likelihood of engaging in heavier drinking later-which in turn can alter the brain (Tapert and Eberson-Shumate, 2022). Thus, it can be difficult to determine which effects are due solely to heavier drinking.

Several major longitudinal brain studies have begun in recent years. Together, these will likely make it much clearer which brain changes exist prior to drinking and which result from drinking, and from what level of drinking. One of these is the Adolescent Brain Cognitive Development (ABCD) Study. It is the largest long-term study of brain development in the U.S., and recruited 9 - to 10 -year-olds, with only about $7 \%$ reported to have consumed a full drink by the start of the study. Early results from the ABCD study indicate two of the top predictors of greater odds of trying substances by ages 12-13 were having parents with drug problems and youth having externalizing symptoms like acting out, impulsivity, and aggression (Sullivan et al., 2022). Other research has identified some of the brain differences that seem to underlie externalizing behaviors (Andre, Geeraert, and Lebel, 2020).

A related issue is whether it is harmful for parents to allow their teens to drink at home. That is, some parents believe their children are less likely to rebel and drink more heavily if they allow their teenagers to drink at home. Results of studies on this also vary substantially. Much of the variation in findings seems to be due to differences in broader cultural influences, parents' drinking choices, frequency of allowing drinking, allowing sips versus a full drink, and age at which drinking is first allowed. For example, decades ago some Mediterranean countries had little acceptance of heavy
drinking and drunkenness. Despite the common practice of parents allowing children to drink at home at a young age, those countries used to have a very low rate of HED and alcohol-related problems among their youth. As influences promoting high-risk drinking increased, so did HED and related problems among their youth. Research suggests that in societies with many social influences that accept and encourage high-risk drinking, like the U.S., allowing adolescents to drink at home on a regular basis increases risk for future alcohol-related problems. Nonetheless, when parents either abstain or drink at a low level themselves, communicate clear expectations, and monitor their children's behavior, allowing their children (at least older adolescents) to drink infrequently and at low levels does not seem to increase risk for future heavier drinking or problems; and neither does accepting abstinence and not allowing children to drink at home (DOC 308).

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 creases risk for developing an AUD because the brain is still developing.Another related issue is whether starting to drink at an early age increases risk for developing an AUD because the brain is still developing. While several (but not all) studies indicate the risk for developing an AUD is much greater for youth who initiate drinking at a young age, a causal relationship has not been established (de Goede et al., 2021). In fact, the findings of several studies suggest there is not likely to be a causal relationship. In addition to the experience of some Mediterranean countries decades ago not supporting a causal relationship, some of the other study results mentioned earlier indicate that brain differences which exist prior to drinking can increase both the likelihood of youth choosing to drink at a younger age than most of their peers and choosing to drink heavily during adolescence-resulting in more problems like the development of an AUD. Examples include greater levels of externalizing behaviors in childhood that are due to brain differences, having a biological family history of AUD, and experiencing childhood severe or repeated trauma prior to initiating drinking (Tapert and Eberson-Shumate, 2022).

## Why be cautious about saying any amount of drinking harms the adolescent brain?

- We have not found adequate research support for this claim.
- It is just speculation, if not erroneous, to generalize from studies of brain changes among adolescents who engaged in high-risk drinking to saying drinking within the low-risk guidelines would be harmful.
- It is not clear that brain differences always result in impairment of cognitive functioning. For example, some brain differences among adolescents engaging in HED are associated with needing greater brain activity to perform some cognitive functions on an equal level with adolescents not engaging in HED.

Some of the brain differences found among adolescent drinkers were likely present prior to their drinking. These pre-existing brain differences could be due to factors such as pre-natal exposure and epigenetic effects (Mychasiuk and Metz, 2016), early childhood trauma, pre-existing depression, characteristics associated with both brain differences and later heavier drinking like impulsivity, acting out, aggressive behavior, high sensation seeking, and genetic differences among persons with a family history of alcohol use disorders.

- Even studies of youth in treatment for alcohol dependence have found limited impairment of cognitive functioning. One example is a study of youth who during the three months prior to entering treatment drank an average of 154 drinks over an average of 19 days per month (8 drinks per drinking day, on average), an average maximum of 16.3 drinks per occasion, and had an average of 753 alcohol use episodes over approximately five years in early to middle adolescence. This study found that compared to the controls, these youth with a history of heavy drinking and withdrawal exhibited "subtle to modest" deficits in cognitive functioning (Brown, et al., 2000; p. 168). More specifically, the researchers noted, "... poorer performance on verbal and nonverbal retention in the context of intact learning and recognition discriminability. Recent alcohol withdrawal among adolescents was associated with poor visuospatial functioning, whereas lifetime alcohol withdrawal was associated with poorer retrieval of verbal and nonverbal information" (p. 164).
- Given that some of these deficits could have pre-existed, were characterized as subtle to modest, could have been caused or worsened by other drug use, were measured just three weeks following detoxification (so
cannot keep up with them. Instructors also tell me how their experience with Prime For Life has made them better parents, better counselors, and one told me it changed how he coaches and how he related to the kids on a team he coached. When we throw a rock in a pond, we have no idea who the ripples will touch or how. Thanks for being in the pond and making ripples with me.


## The Longevity

Frankly, I am also surprised we are still here, learning and growing after 40 years! When I incorporated PRI, it was a dream coming to fruition. I was working at the Kentucky Alcoholism Council when I did the initial work, and I told the board the outcome might have national implications. They made it clear their mission only included Kentucky and if I wanted to take it further, I should start a new organization and come up with a way to fund it. That was a daunting task and if I was going to start it, I imagined I would lead both organizations. But by the time I was ready to open the doors at PRI, I had begun working with Terry O'Bryan and it was clear to me for several reasons that she was the better person to get it started, with decisions being made jointly. I felt a little like the cartoon strip, Calvin and Hobbs, trading off who was general and who was admiral. For us it was "you be director and I'll be president." So, she left her job in Cincinnati and came to start a fledgling organization with very little fund-
 ing but a lot of grit. I had incorporated PRI as a nonprofit, and we decided seeking grants could cause mission drift and fundraising could take all our time, so we were going to try to fund it on a fee for service basis. That meant workbooks and training fees. It was a risk, maybe a high-risk choice, but it worked, and every time you order workbooks you are sustaining this mission.

The day we started I took Terry to lunch, and we agreed that if PRI lasted a year, we would not be embarrassed. Now here we are celebrating 40 years and we have begun the initial work on the 10th version of Prime For Life (give us a while, this is a huge undertaking!). Of the alcohol and drug curricula that were available when we started, Prime For Life is the only one still alive, to say nothing of thriving. I think part of the reason is that we do keep it fresh and updated. The most recent version is never more than a few years old and often only a few months. We never stop asking, "What is another right way?" It is constantly renewed and, with the process staff has put in place and the app as a vehicle for delivery, it will stay that way. I think it also lasts because, rather than following the trends, we have stuck with basic principles and people still find those relevant regardless of changes in the larger society.

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 bring change and expected resistance. I expected neither gratitude nor vitriol and was surprised by both.
## The Program is Not the Only Part of the Equation

I can't say this next thing was a surprise, but I did not anticipate it. When I started the work that led to Prime For Life, I thought the process would be to figure out why things were not working, develop a program that would work, and train people to use it. I did not anticipate what should have been obvious. Implementing a new way of thinking - a protocol - would be a lengthy process and it would require ongoing training and support. I have come to see that the curriculum and the support services are two equal thirds of the whole picture. They serve each other and neither can exist without the other. Perhaps that is another reason why Prime For Life has lasted. It is not just a program. It is a living system that involves PRI and you...or as the name says "PRI" and "ME": PRIME. You are the other third of the equation! Without you, this would never work. Thank you!

## Both Gratitude and Vitriol

The Prime For Life message was a big change for our field. I hoped it would bring change and expected resistance. I expected neither gratitude nor vitriol and was surprised by both. There were those who celebrated the new approach and found it professionally invigorating or personally life changing. As one long-time addiction professional said on the last day of training, "This is not an evolution of thought, it is a revolution of thought." Well, with any change that big not everyone will be happy, and we went through several rough years that tested our resolve to stay the course. During the zero-tolerance era, a few thought we were the enemy . One person got so upset she sent a 16 -page letter to the governor of every state accusing us of being "responsible for a generation of chemically dependent leeches on society." Wow! I wonder what she really thought. By the way, she had never been through the program! Several states that were already using Prime For Life had to justify to their governor's office why they were using it. Later, I had a person publicly say he wanted to harm me over the phases. Seriously! But the gratitude far outweighed the conflict and that storm passed.

## From Controversy to Acceptance

The next surprise was how quickly the ideas in Prime For Life ceased to be controversial and even became more mainstream thinking. We had research on our side and what we were saying fit people's experience, so the naysayers slowly faded away. I like this phase of our growth a lot better!


## The Breadth of Its Impact

There are other things that surprised me, but I will stop with one more. I never expected Prime For Life to be used worldwide in the US Army, Navy, Marine Corp, and Coast Guard, adopted by so many state systems, or for it to be used in places like Sweden, Cyprus, the Virgin Islands, and Ireland. Soon, Canada and Nigeria will join that list, and the National Guard is in the process of taking it to every state Guard that wants it. Other
interesting opportunities are in the mix. I never expected it, but here we are. Years ago, an instructor quipped, "Prime For Life is going to be like the kudzu of prevention - next thing you know it will be everywhere."Those from the south can both appreciate and wince at the analogy. It has not reached kudzu status yet, but it is growing. It continues to change people wherever it goes. Speaking for myself, working on Prime For Life has changed me. I am a better person for what I have learned and experienced over these 40 years. And you are a big part of that process. When it is my time to fully retire (will that happen?) or my time on this earth is over (that will happen!), I will go out knowing that I have had the honor and privilege of getting to know, often love, be loved by, and always serve with some of the finest people on earth. Thank you for the privilege.

## 03 I am a better person for what I have learned and experienced over these 40 years.

If you want to share thoughts, you can reach me at ray.daugherty@primeforlife.org. Tb
from Reflecting on decades..
The slide images were cartoon figures and there were hundreds of slides contained in four carousels that would rotate into action during break. A 10-minute break could quickly turn into 20 if the carousel was dropped, spilling slides onto the floor. There was always ONE slide that was upside-down or backward in the mix; I often wonder if a playful participant or co-worker planted those purposefully!

Group setup and delivery is not the only big change I noticed. Our ability to gather data on the PFL experience has also seen radical change.

## Research Is Our Middle Name



After the intro music, the next click in my weekend group transitioned us to the evaluation QR code scene. Before I could even describe the project fully using the intended verbiage in the e-manual,
the group of 21 pulled out their smart devices and pointed them toward the large screen at the front of the room (Side Note: Unlike our general expectation to avoid reading from the e-manual, please DO read Scene $\mathbf{2}$ from the e-manual to ensure fidelity of the research project. In 8 minutes, the entire group had completed the pre-evaluation! I was smiling thinking it probably took me 8 minutes just to hand out the old pen-and-paper evaluation versions, another 8 minutes to pick them up, and at least an additional 8 minutes to stuff them into an envelope to seal and return them via snail mail to PRI.

In both group setup/delivery and gathering data, technology has been the biggest change I have experienced over the last 30 years of teaching PFL. I hauled slides to seven different schools, three college campuses, and countless workplaces, just narrowly missing the precursor to slides the overheads! I transitioned to CDi, Laptop/Powerpoint, DVD, and most recently The App.

During that weekend class, in addition to my voice, participants experienced a variety of media including short video segments, animations, and testimonials. These moments offer a change in focus, engage unique learning styles, and allow instructors to take a breath, a gulp of coffee, or to do a quick check of the syllabus timeline or a note.

## Support

Another technology-driven change over the past 30 years is in the area of program support. In 1992 when I had a question, concern, comment, or need, I called PRI. On the telephone. There was no email. Read that again: There was no email! I called a lot. In fact, one might say I was as tenacious as a car warranty telemarketer, and I often joke with Ray that it's why he hired me. He was likely very tired of me pestering him on the phone. I remember when Diane Padgett announced the first email support available at PRI somewhere around 1997. More than 25 years later, Diane remains one of my go-to supports. Today we connect through Teams, Zoom, text messages, and the good old telephone. We still have a live voice at PRI answering the phone, and, at the risk of sounding like my Irish Grandmother Catherine, I am glad we do. Other support methods today include live chat on www. primeforlife.org and a remarkable and ever-present team of PRI staff responding to email through our support@primeforlife.org email address.

## Workbooks

Participant workbooks have shifted as well, though not as much. I remember blocking off an hour before PFL groups back in the 90's to "assemble" workbooks. Participants had a mini three-ring binder, and before each session instructors added more content to the binder. Version 9 paper workbooks were the norm the last weekend I taught, and a digital workbook has been available for the last three years. QR codes have been added to bring segments of the paper workbook to life for participants to reflect on after the course or share with others. The request for QR codes actually came from a PFL participant who wished to share the content with his daughters post-PFL. He requested to purchase three additional workbooks at the end of his PFL group so he could share his experience with his family members! This led our team to think outside the box - something the media team excels at - to creatively push this request into action in V9.

## Moving ForWarD (MFWD) Quality Assurance Tool

While the expectation of fidelity has not changed over the last three decades, how we measure program fidelity radically shifted in 2007 with the advent and testing of the MFWD tool. For those of us who live and love life coloring outside

the lines, this tool keeps us grounded in the critical areas of content and process delivery of PFL.

My co-instructor and I recently debriefed the weekend experience using this tool to guide our feedback and growth opportunities with each other using a similar structure and language to focus on what we know matters most in our evidence-based program.

MFWD is a helpful personal feedback tool, even in the moment. As I was sharing PFL recently, many moments of self-coding were going on in my head under the water line. The constant push of Finish Line Focus (FLF) - making sure all syllabus items make it to the "finish line" - balanced with the relational element, Working With (WW), is a three-decade long challenge for me. Both are critical to attend to. Establishing and nurturing the WW environment by creating a space where participants feel safe to explore and express change and growth; being non-judgmental, playful, and listening deeply for change talk (sometimes in the midst of dissent); and responding with reflections and affirming strengths when we hear them, matter less if we don't get across the finish line of each Unit. MFWD helps us each assess these nuances of what we bring to PFL and adjust in the moment. Looking back, I wish I had that structure to help me map my own development and goals in 1992. Personal feedback helps me serve people better, and that's the bottom line in a PFL delivery.

## What hasn't changed?

Participant engagement. Recently, 21 people shared deeply with us and each other about future goals, hopes, aspirations - values. Engagement has been a constant theme since my first PFL group. My Mom asked me about a decade ago, "How can you still enjoy teaching this course?!" She knows me well; I am easily bored as a sensation seeker, and PFL has yet to bore me. EVERY group surprises me. As Ejna Mitchell often remarks,"The surprising thing about PFL is it keeps surprising us."

The weekend group surprises included curiosity from participants, interesting moments of disclosure-one woman professional stated that before arrest her life was "cocaine and Burger King..."That is a statement that requires courage and feeling safe to share. Another participant was silent with arms crossed and came alive in the Protecting Unit. It took longer for him to emerge. Many disclosed about family history and its relevance as a biological risk they didn't wish to engage. Another shared deeply of moving through grief and referred to PFL as a floatation device, a "life saver."

As participants shared the final activity, "My Message,"I was struck and in awe at the amount of change talk, motivation and confidence they publicly stated. Emotions were high, tears were flowing and there was that feeling of "not wanting the group to end" alive in the room from people who mentioned they came in dreading the course, not knowing what to expect and not planning to share personally with a group of strangers. All these surprises will keep me "Prime-ing." Maybe even for another 31 years. 7b
from Alcohol and Adolescent Brain Devlopment...
might improve with ongoing abstinence), and there is yet to be evidence that these deficits typically are permanent, it seems unlikely that a couple of drinks consumed by adult-sized adolescents over a couple of hours along with food would cause harm to their brains. Nevertheless, since the adolescents in the comparison group were not lifelong abstainers (they averaged 82 occasions of drinking in their lifetime, a maximum of 2.6 drinks per occasion, and 3.4 drinks per month, and drank on an average of 1.8 days per month), it is theoretically possible that some minor deficits occurred among the comparison group.

- Research has not confirmed that brain changes associated with HED or alcohol dependence during adolescence are permanent.


## Why be cautious about saying low-risk amounts of drinking do not harm the adolescent brain?

At this time, we have no data to support this either.

## Law and science

Laws about minors and alcohol are not based solely on science. In fact, some of these laws vary from state to state and from country to country. In addition, there is good evidence that the brain continues to develop until about age 25, with some cognitive processes still maturing until about age 30. (Nguyen-Louie et al., 2017) Consequently, a minimum purchase age of 25 based soley on research or biology might make sense. Also, biological risk does not change overnight-from age 20 years and 364 days to 21 years of age. [For more on the sometimes-confusing legal issues regarding minors and alcohol, see the sidebar.]

Why were minimum purchase age laws raised nationally? In general, adolescents who drink experience more problems than do adults. If this was not the case, there would likely not have been any motivation to enact drinking age laws, nor to raise them. For example, after some states lowered their drinking age below age 21, there was evidence of a higher rate of fatal crashes caused by youth who had been drinking. In response, the U.S. government required states to have a minimum purchase of 21 in order to receive federal highway funds. (Toomey, Rosenfeld, and Wagenaar, 1996) Similarly, some countries which historically had low rates of alcohol-related problems among their youth (such as France, Italy, and Spain) raised their legal purchase age to 18 in response to increases in heavy episodic drinking among their teens and the resulting increase in alcohol-related problems (Kadiri, 2014). [The most common legal purchase age in Europe is 18, with a typical range of 16-20 (https:// en.wikipedia.org/wiki/Legal_drinking_age).]

Below are some factors which help explain the greater prevalence of problems resulting from adolescent drinking.

- Adolescents who drink are more likely to choose to drink to impairment than are adults (Tapert and Eber-son-Shumate, 2022).
- Adolescents who drink are less sensitive to some of the negative effects of high doses and might receive stronger reinforcement than adults. This could help explain why adolescents are more likely than adults to drink high-risk quantities.
- Once impaired, adolescents are even more likely than adults to make impulsive, risky decisions. [As a side note, I used to (only somewhat jokingly) tell my son that sometimes his functional IQ is cut in half when he
is with one peer and is $1 / 3$ of its normal level when with two peers (and that is even without alcohol or drugs). While this is an exaggeration, research certainly supports parents' observations that many adolescents make riskier decisions when with peers, even when abstaining. Nevertheless, peer influence is not one-sided, pro-social behaviors can also be increased by peers (Andrews, Ahmed, and Blakemore, 2021).]


## 03 Though most youth try alcohol prior to age 21, there is evidence that having legal age laws is a significant influence on fewer teens drinking and fewer engaging in HED

(Ahammer et al., 2022)

Though most youth try alcohol prior to age 21, there is evidence that having legal age laws is a significant influence on fewer teens drinking and fewer engaging in HED (Ahammer et al., 2022). Importantly, research also indicates that raising the minimum legal purchase age to 21 contributed to a significant reduction in alcohol-related crash fatalities caused by young drivers (Hedlund et al., 2001).

## Summary and Conclusions:

We have not seen evidence indicating adult-sized adolescents who follow the 0-1-2-3 guidelines and make the appropriate adjustments will have any greater risk for alcohol-related problems-including impairment of cognitive functioning-than adults. Nonetheless, in societies which accept and encourage high-risk drinking like ours, adolescents who drink regularly are more likely to choose to drink to impairment than are adults (including those who frequently drink with their parents). Once impaired, adolescents are even more likely than adults to make impulsive, risky decisions. In addition, research indicates that raising the legal drinking age contributed to a reduction in HED and in alcohol-related crash fatalities caused by young drivers.

Importantly, high-risk drinking can harm both the adolescent and adult brain, and there is evidence that the adolescent brain might be even more damaged by high-risk drinking than the adult brain, at least in the short run. Paradoxically, the resiliency of the adolescent brain might result in lower risk for long-term damage among adolescents who discontinue high-risk drinking, as compared to adults.

## More on Legal Issues:

The commonly used term, minimum legal drinking age (MLDA), is misleading about the laws in some states. While all 50 states have a minimum legal purchase age of 21, the legality of minors possessing or consuming alcohol at home varies from state to state-with some having confusing laws (at least to non-lawyers like me).

For example, the Kentucky law against providing alcohol to people under age 21 explicitly exempts parents/guardians. However, Kentucky prohibits people under age 21 from possessing alcohol, with no exceptions listed. So, it seems that Kentucky allows parents to give their underage children alcohol, but their underage children are not allowed to take it. The law prohibiting possession was probably enacted to allow police to take into custody minors who are holding an alcoholic beverage in public or at a private party even if they say their parents gave it to them. It seems unlikely it was meant to prohibit youth from taking an alcoholic beverage given to them at home by their parent when other people's children are not present. Otherwise, the exemption for parents makes no sense. [Of course, practically speaking, police are not going to encounter underage possession in the home unless there is some other reason for going to that home.]

In contrast, the laws in some states are much clearer - some have no exceptions to their laws against providing alcohol to people under age 21 and others clearly allow minors to possess and consume alcohol when at home with their parent/ guardian (and in some states, spouse) present. State by state laws are available at https://alcoholpolicy.niaaa.nih.gov/un-derage-drinking/state-profiles. If you haven't already, check out the laws in your state. You might be surprised; I sure was when I first read Kentucky laws.

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# Looking for a few additional opening options to kick off your Prime Solutions Check In? Toss one of these out to your group and let it "percolate" for a few minutes. You might get the sharing started by responding yourself to establish the spirit of the interaction. Not every person in the group needs to share, though with well-selected openers clients frequently want to share. Let the conversation emerge naturally and then move into the Session Topic. 

- What are you grateful for today?
- Tell us about a time when you felt content over the last few days?
- Tell me what has been working for you lately that doesn't include drugs or alcohol.
- Tell me about a light bulb moment you have had recently that made you feel good.
- Share with us a time recently where you were the best version of yourself.
- Tell me about something you have learned in group that you have been able to use outside of here.
- Where's the spot you feel most at peace in your life?
- Tell us about the last time you said, "That's really cool," or something like that.
- What's something that inspires awe in you (by awe, I mean something positive)?
- Not including substances, tell us when you last felt joy (or at peace). Tell us about what was happening, who was there, and what made you feel joy (at peace).
- Describe for us a time when you recently felt inspired by someone else.
- Who helps you want to be a better person and what is it about this person that does that for you?
- What's something that you did differently than you normally would and it made you feel good?
- What made you laugh or smile today?
- Tell us something you did last week that you were proud of.
- Tell us about something recent that you feel proud of accomplishing.
- Tell us about something you did for someone else recently.
- Tell us about something that recently inspired you.
- Not including substances, what do you enjoy doing when you have free time?
- What is (or will be) your theme song when life is going well?
- Tell us somewhere you would look forward to visiting if you could travel anywhere.
- Tell me what animal best describes who you are becoming in your (recovery) journey and why.
- At the end of your day today, what will make you feel really good about the accomplishments you made?

