



## August—Toxic Stress

### Toxic Stress

The future of any society depends on its ability to foster the healthy development of the next generation. Extensive research on the biology of stress now shows that healthy development can be derailed by excessive or prolonged activation of stress response systems in the body and brain. Such **toxic stress** can have damaging effects on learning, behavior, and health across the lifespan.

Learning how to cope with adversity is an important part of healthy child development. When we are threatened, our bodies prepare us to respond by increasing our heart rate, blood pressure, and stress hormones, such as cortisol. When a young child's stress response systems are activated within an environment of supportive relationships with adults, these physiological effects are buffered and brought back down to baseline. The result is the development of healthy stress response systems. However, if the stress response is extreme and long-lasting, and buffering relationships are unavailable to the child, the result can be damaged, weakened systems and brain architecture, with lifelong repercussions.

It's important to distinguish among three kinds of responses to stress: positive, tolerable, and toxic. As described below, these three terms refer to the stress response systems' effects on the body, not to the stressful event or experience itself:

- ♦ **Positive stress response** is a normal and essential part of healthy development, characterized by brief increases in heart rate and mild elevations in hormone levels. Some situations that might trigger a positive stress response are the first day with a new caregiver or receiving an injected immunization.

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*August Quote: "Great minds discuss ideas; average minds discuss events; small minds discuss people." – Eleanor Roosevelt.*

Club

President:

Rene Critelli



## August Volunteer

### Opportunities:

August 9th—BlackHawk,  
Restless Heart, & Shenandoah

August 10th—An Evening  
with 98 Degrees

August 11th—Old Dominion

August 25th—Weird Al  
Yankovic

## Future Volunteer

### Opportunities:

November 22—Slayer



# EXCHANGE

BREAKFAST EXCHANGE CLUB OF BILLINGS, MT

- ♦ **Tolerable stress response** activates the body's alert systems to a greater degree as a result of more severe, longer-lasting difficulties, such as the loss of a loved one, a natural disaster, or a frightening injury. If the activation is time-limited and buffered by relationships with adults who help the child adapt, the brain and other organs recover from what might otherwise be damaging effects.



Brief increases in heart rate,  
mild elevations in stress hormone levels.

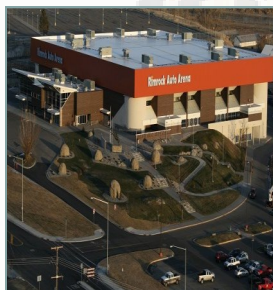


Serious, temporary stress responses,  
buffered by supportive relationships.



Prolonged activation of stress  
response systems in the absence  
of protective relationships.

- ♦ **Toxic stress response** can occur when a child experiences strong, frequent, and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, and/or the accumulated burdens of family economic hardship—without adequate adult support. This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems, and increase the risk for stress-related disease and cognitive impairment, well into the adult years.



Come weekly at 7:00  
a.m. on Friday  
to the Yellowstone  
Room and get to know  
your fellow  
Exchangites!

When toxic stress response occurs continually, or is triggered by multiple sources, it can have a cumulative toll on an individual's physical and mental health—for a lifetime. The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems, including heart disease, diabetes, substance abuse, and depression. Research also indicates that supportive, responsive relationships with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.

[www.developingchild.harvard.edu](http://www.developingchild.harvard.edu)



**87<sup>th</sup> BEST  
CLUB  
BULLETIN**

Exchange Club  
75 or more members



**THE BREAKFAST  
EXCHANGE CLUB OF  
BILLINGS, MT**

**PO Box 2224  
Billings, MT 59103**

[www.breakfastexchangeclub.org](http://www.breakfastexchangeclub.org)

*Exchange, America's Service Club, is a group of men and women working together to make our communities better places to live through programs of service in Americanism, Community Service, Youth Activities, and its national project, the Prevention of Child Abuse.*

Looking for something to do and support community organizations at the same time?

- 2nd—ArtWalk
- 3rd—Pump-n-Run for Recovery
- 5th—Pint Night for P.E.A.K.S @ YVB
- 10th—Quality of Life Run benefiting TrailNet
- 11th—Walk for Kidneys
- 15th—Cornhole Tournament benefiting Eagle Mount @ Thirsty Street
- 17th—Pint Night for MT Wilderness Association @ Carter's
- 24th—Beat the Heat Run
- 31st—Red Lodge Fun Run for Charities
- Thursdays—Gardeners Market
- Saturdays—Farmer's Market
- Mondays—Community Monday @ Hooligans (each week benefits different organization)
- Tuesdays—Pint night at Last Chance Cider House (each week benefits different organization)
- Tuesdays—Bingo Night at 406 Kitchen & Taproom (each week benefits different organization)



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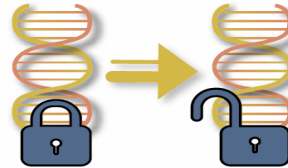
BREAKFAST EXCHANGE CLUB OF BILLINGS, MT

## CAP Center Corner

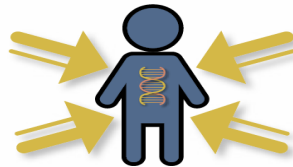
### WHAT IS EPIGENETICS?

#### AND HOW DOES IT RELATE TO CHILD DEVELOPMENT?

"Epigenetics" is an emerging area of scientific research that shows how environmental influences—children's experiences—actually affect the expression of their genes.



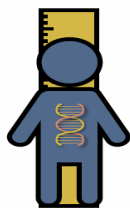
During development, the DNA that makes up our genes accumulates chemical marks that determine how much or little of the genes is expressed. This collection of chemical marks is known as the "epigenome." The different experiences children have rearrange those chemical marks. This explains why genetically identical twins can exhibit different behaviors, skills, health, and achievement.



This means the old idea that genes are "set in stone" has been disproven. Nature vs. Nurture is no longer a debate. It's nearly always both!



#### EPIGENETICS EXPLAINS HOW EARLY EXPERIENCES CAN HAVE LIFELONG IMPACTS.



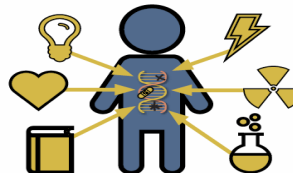
The genes children inherit from their biological parents provide information that guides their development. For example, how tall they could eventually become or the kind of temperament they could have.



When **EXPERIENCES** during development rearrange the epigenetic marks that govern gene expression, they can change whether and how genes release the information they carry.



Thus, the epigenome can be affected by positive experiences, such as supportive relationships and opportunities for learning...

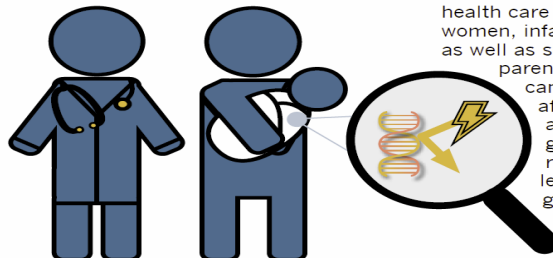


... or negative influences, such as environmental toxins or stressful life circumstances ...

... which leave a unique epigenetic "signature" on the genes. These signatures can be temporary or permanent and both types affect how easily the genes are switched on or off. Recent research demonstrates that there may be ways to reverse certain negative changes and restore healthy functioning. But the very best strategy is to support responsive relationships and reduce stress to build strong brains from the beginning.

#### YOUNG BRAINS ARE PARTICULARLY SENSITIVE TO EPIGENETIC CHANGES.

Experiences very early in life, when the brain is developing most rapidly, cause epigenetic adaptations that influence whether, when, and how genes release their instructions for building future capacity for health, skills, and resilience. That's why it's crucial to provide supportive and nurturing experiences for young children in the earliest years.



Services such as high-quality health care for all pregnant women, infants, and toddlers, as well as support for new parents and caregivers can—quite literally—affect the chemistry around children's genes. Supportive relationships and rich learning experiences generate positive epigenetic signatures that *activate* genetic potential.



# EXCHANGE

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## Committee Happenings:

BECON Committee—Your August BECON Editor is Cavin Noddings

Social Committee—Cornhole Tournament is scheduled for Saturday, August 3rd at 1:00 p.m. and Mustangs Baseball on September 7th!

Patriotism Committee—Salute to America Day at the Fair on August 16th. Chili Cook Off for Veteran's Day on November 9th at the American Legion.

## Other Upcoming Happenings:

GET INVOLVED!!

**\*\* Committee Chairs**—Please email your upcoming events to [dinaharmon1212@gmail.com](mailto:dinaharmon1212@gmail.com) to be included in next months newsletter!\*\*

