



Dr Jackie Blunt

General Practitioner
Christchurch



Dr Nicky Nelson

Paediatrician
Taranaki District Health Board
New Plymouth

Saturday, June 10, 2017

(Room 4)

14:00 - 14:55 WS #145: How GPs can Help Kids Grow Healthy Brains

15:05 - 16:00 WS #157: How GPs can Help Kids Grow Healthy Brains
(Repeated)



**Tuhia ki te rangi
Tuhia ki te whenua
Tuhia ki te nga kau
Ko te mea nui
Ko te aroha
Tihei Mauri Ora**

***Write it in the sky
Write it in the land
Write it in the heart of the people
The greatest thing is love
Behold there is life***



Whakamana Te Tamaiti

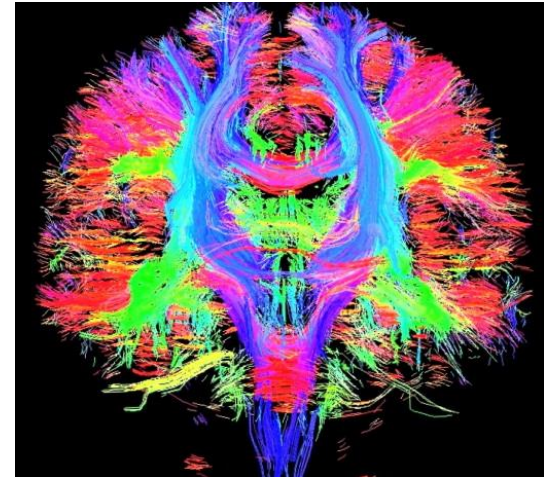
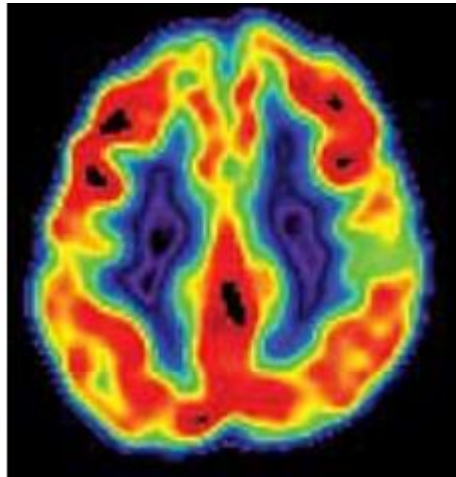
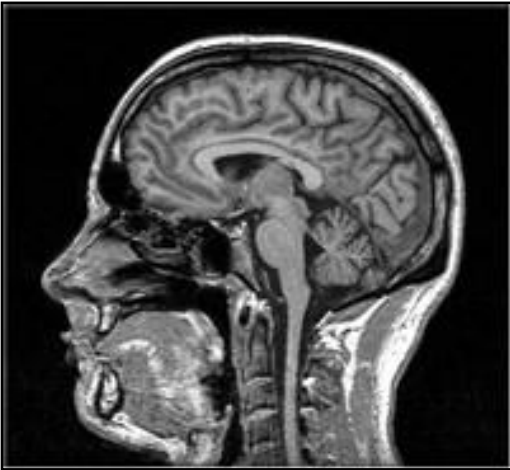
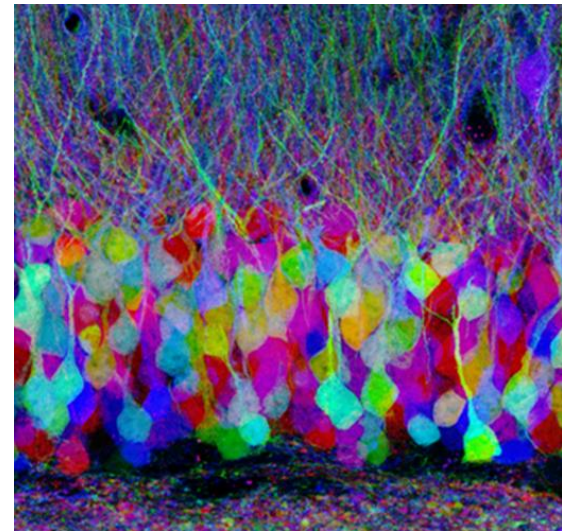
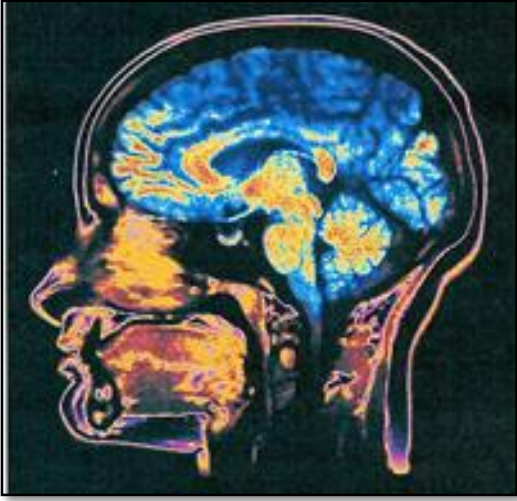
Early Years Last Forever



Key points

- **First 3 years are critical –foundation**
- **Brain growth depends on experience**
- **Most important thing for healthy brain development:
Responsive nurture**
- **Intervene/Refer early**

The Evidence



Reference: Gilkerson & Klein (2008).

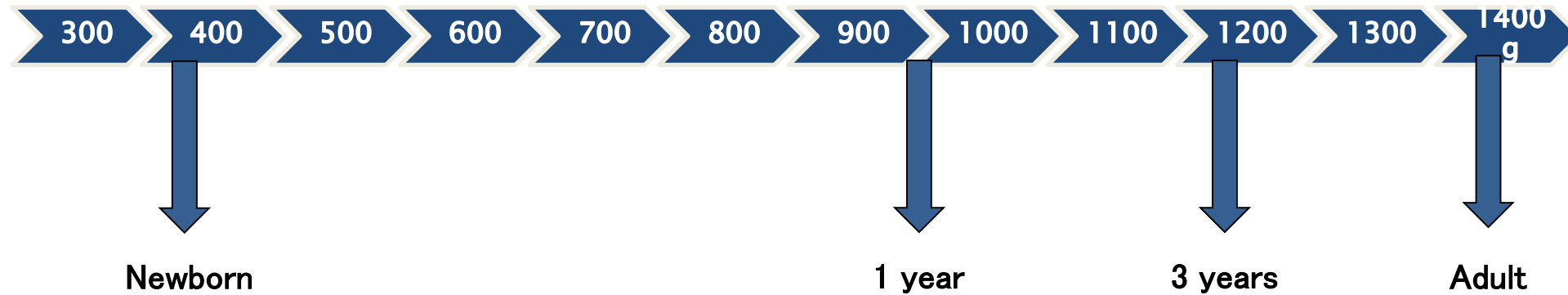


Brainwave
early years last forever



Early Experiences and the Brain

Brain Growth



Genes AND Experience



Nature and Nurture Work
Together

Reference: Murgatroyd & Spengler (2011).



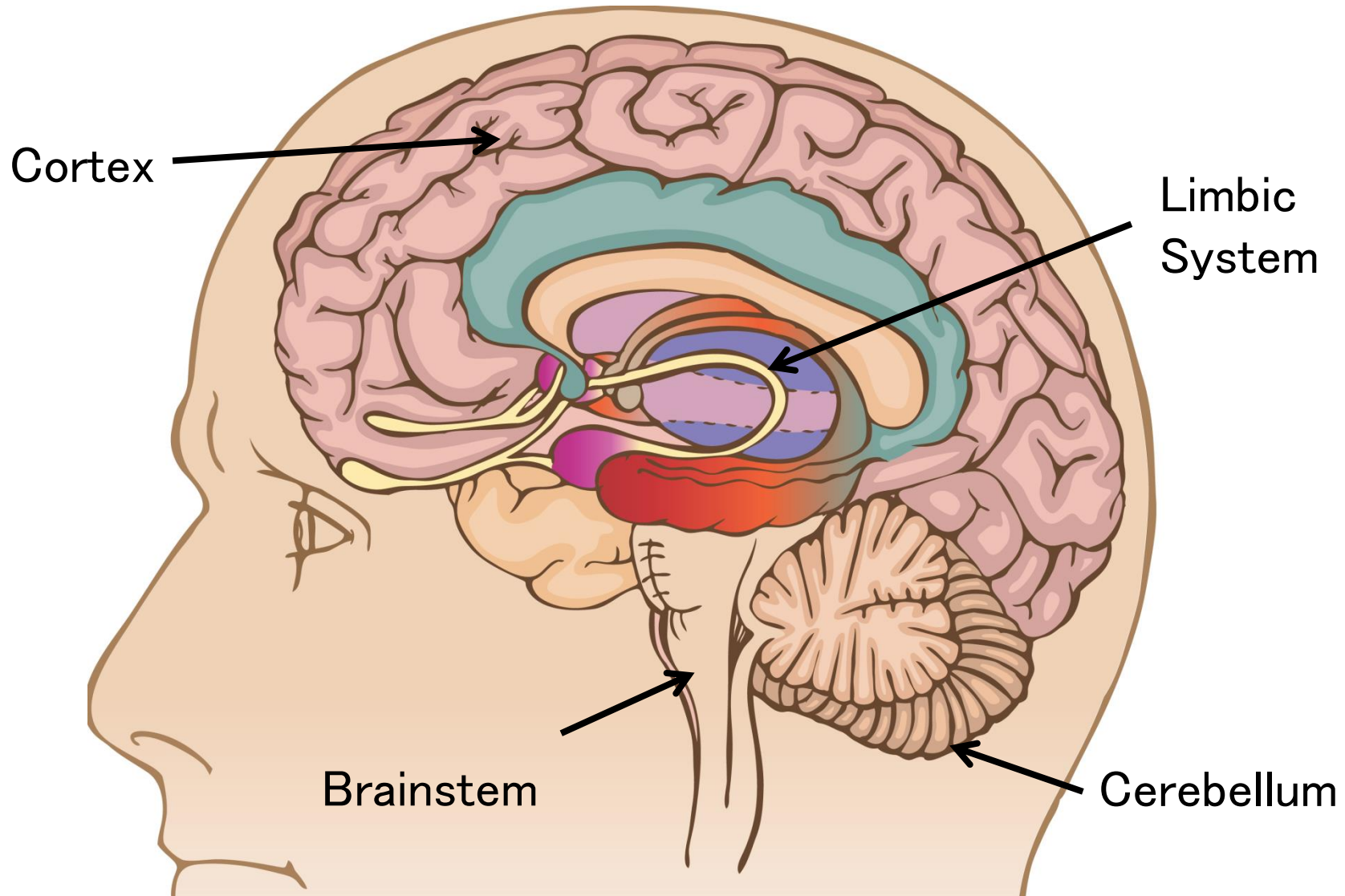
Brainwave[™]
early years last forever

Touch-relaxation&communication

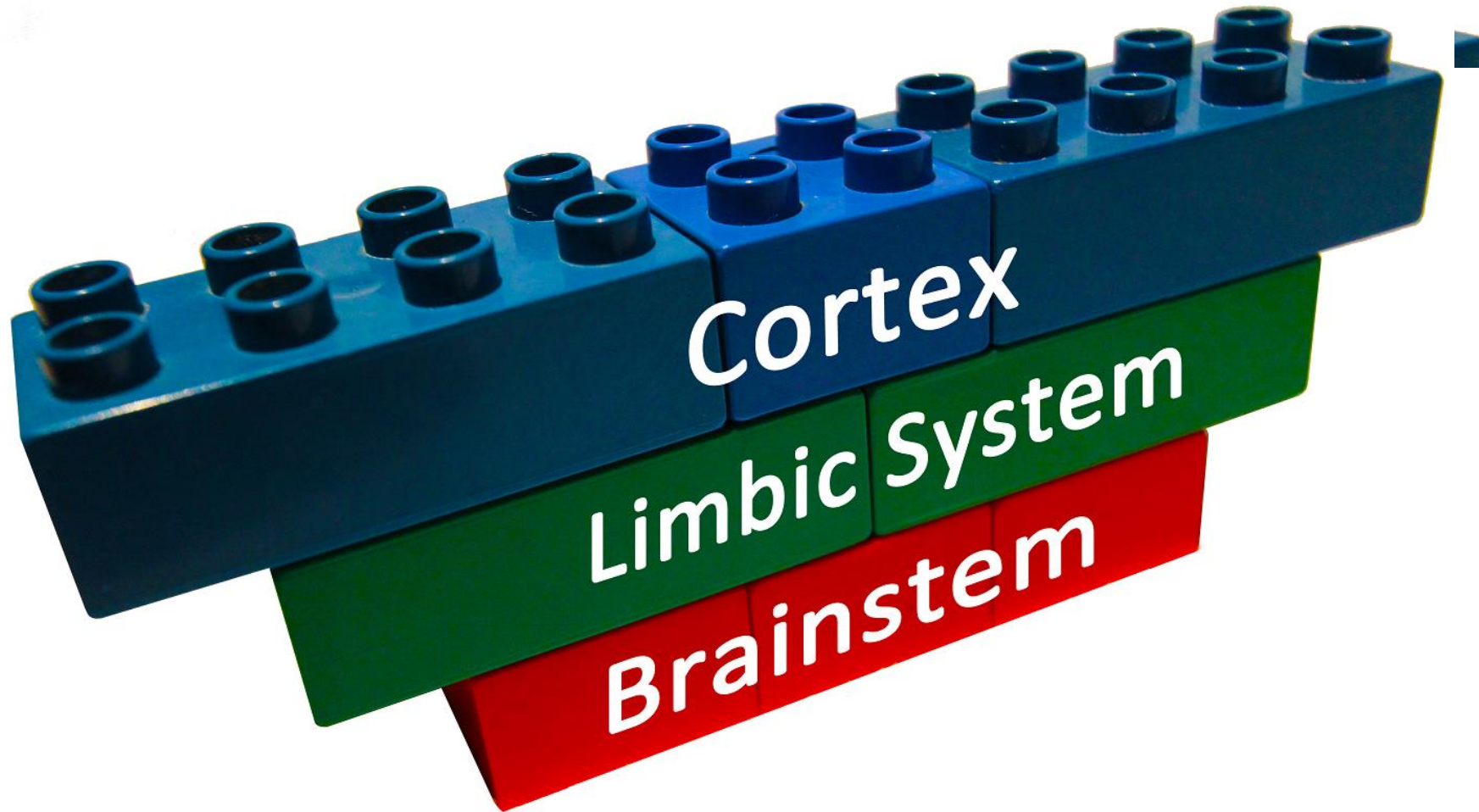


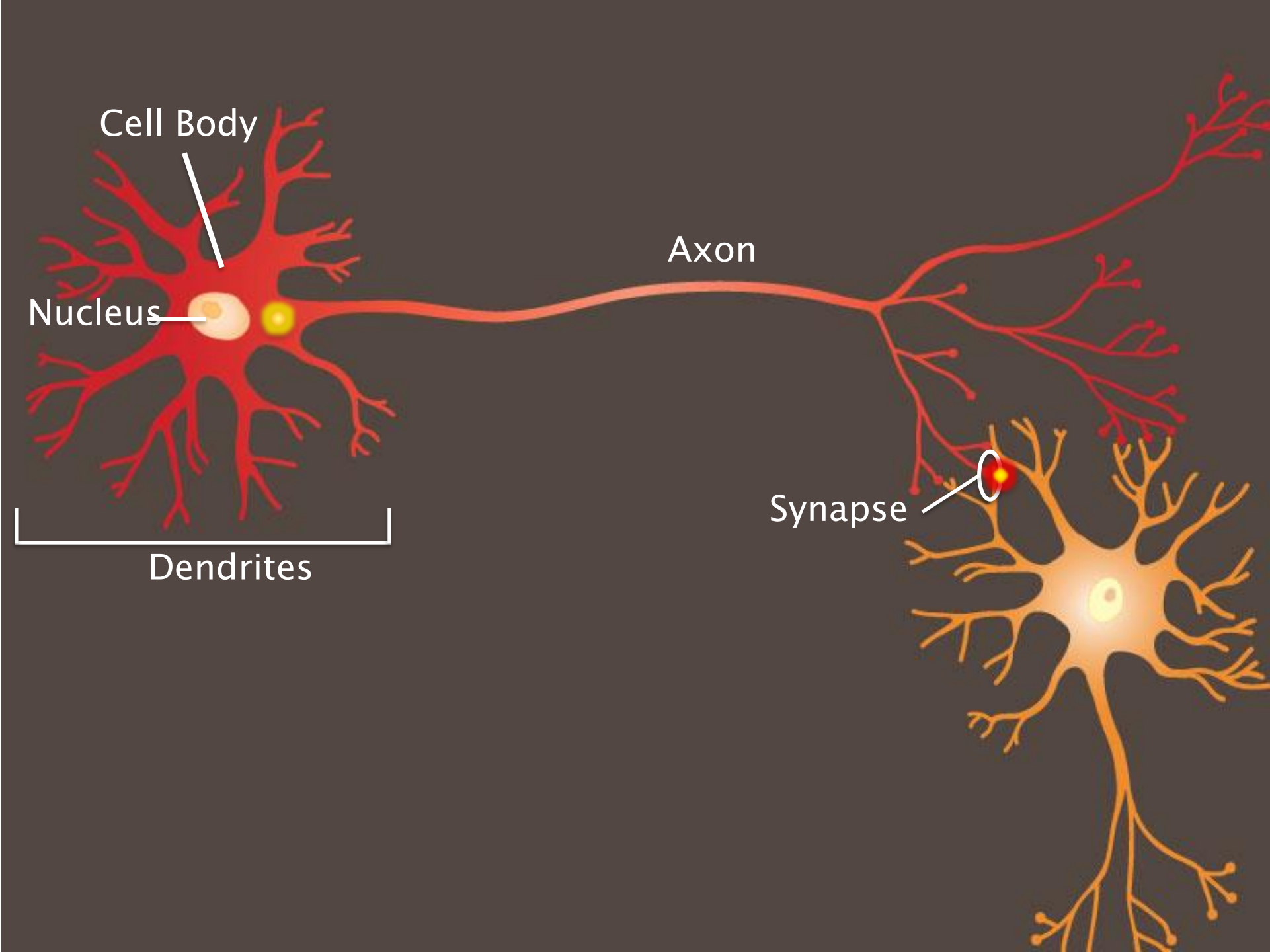
Field (2010), Feldman, (2010), Weiss et al (2004), Kandel (2000) cited by Weiss

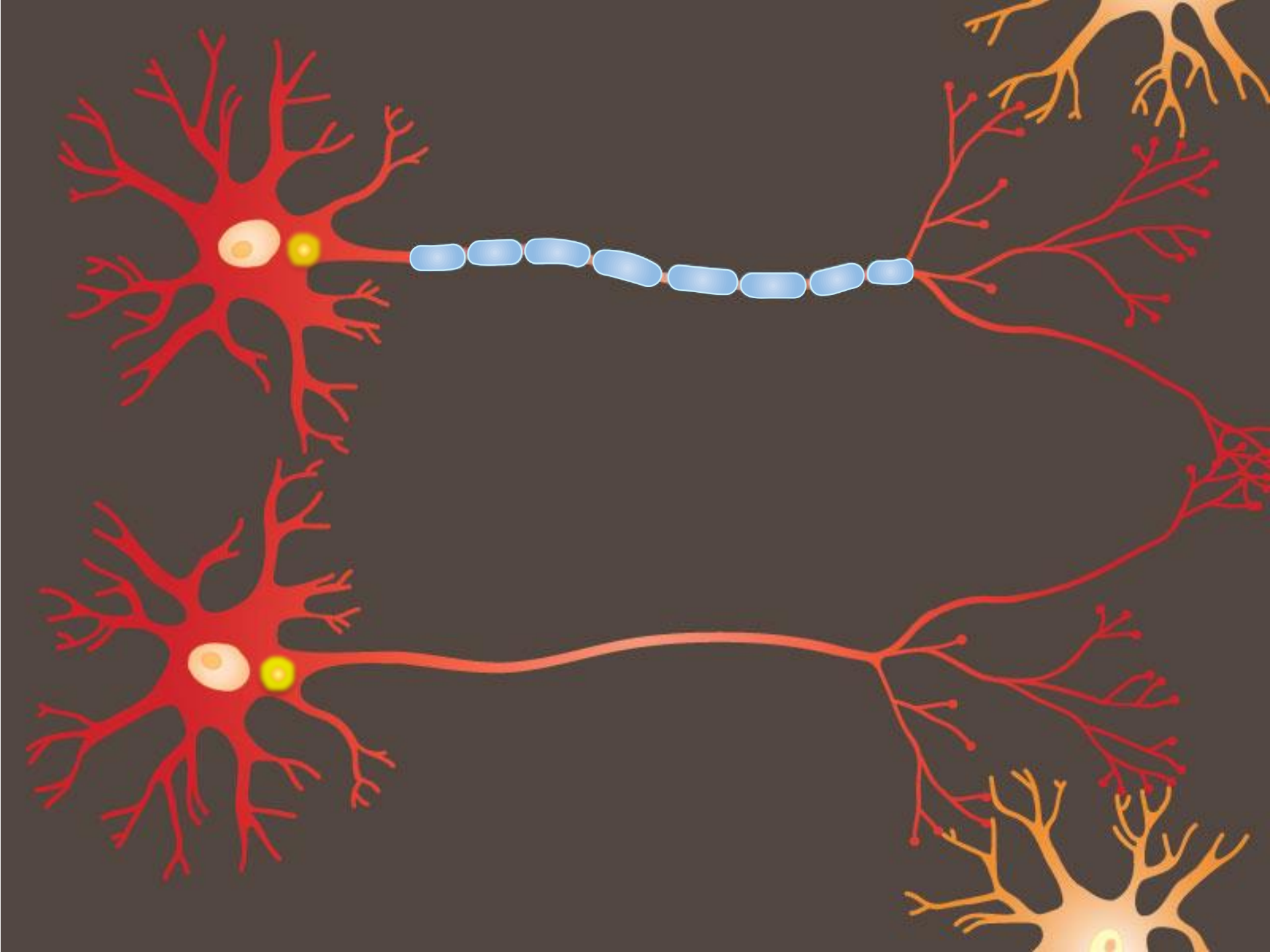
Inside the Brain



Building the Brain







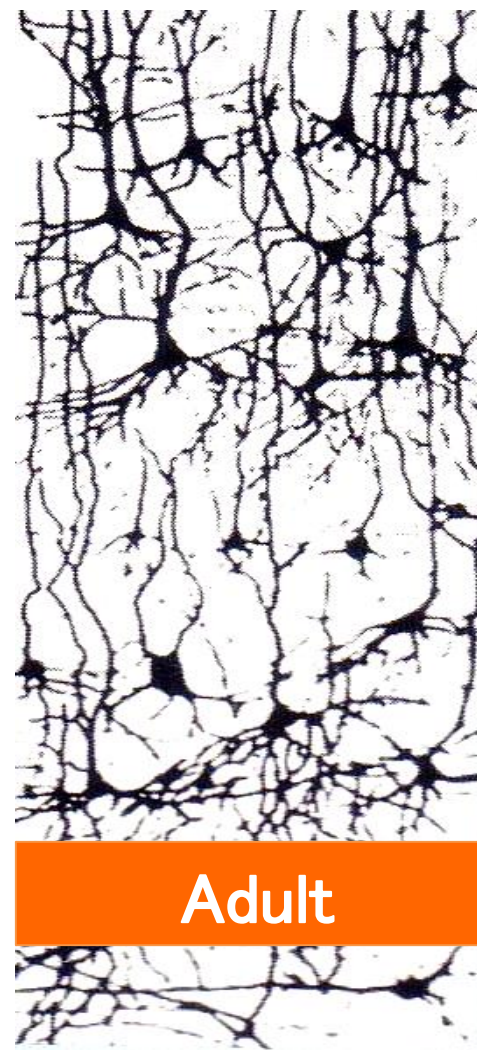
Connections and Pruning



Birth



Early Years



Adult



Stress

Stress Can Be ...

🧠 Positive

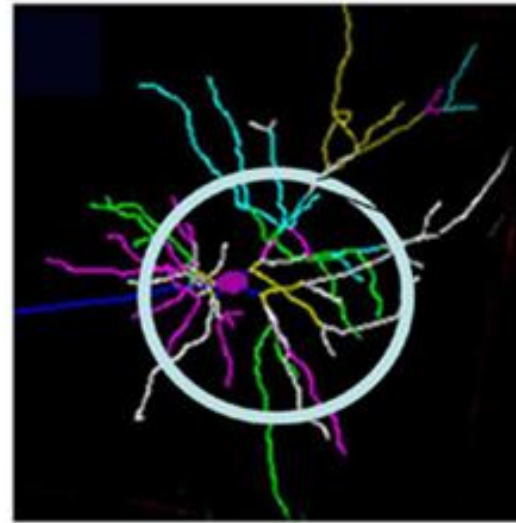
🧠 Tolerable

🧠 Toxic



Stress Changes the Brain

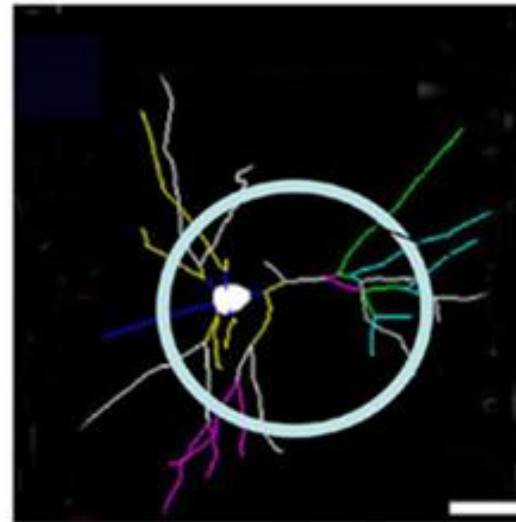
Normal



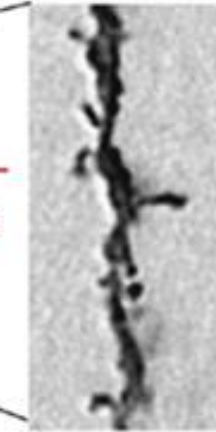
Typical neuron—
many connections



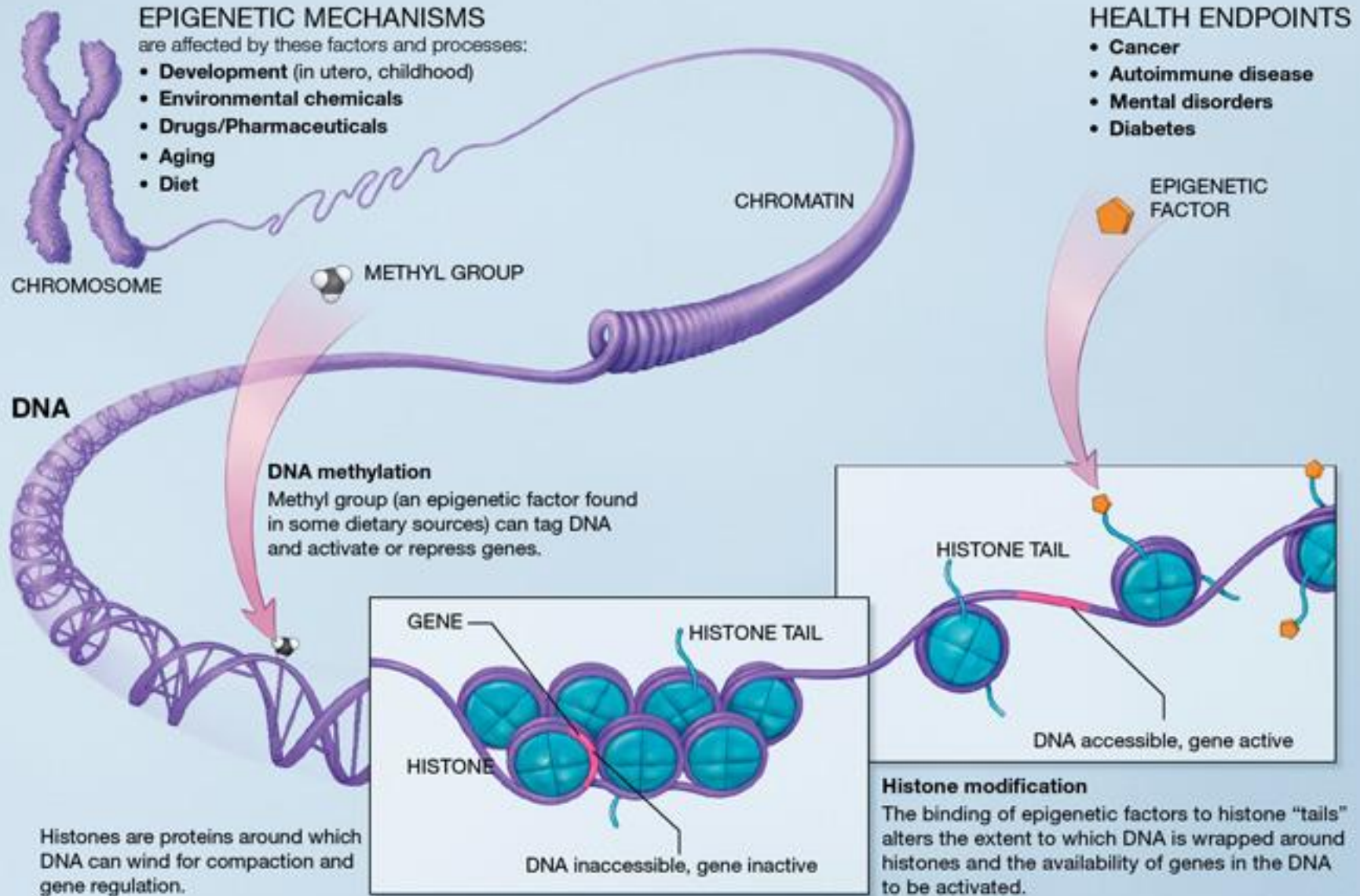
Toxic
stress



Damaged neuron—
fewer connections



Epigenetics



Rat mothering and stress

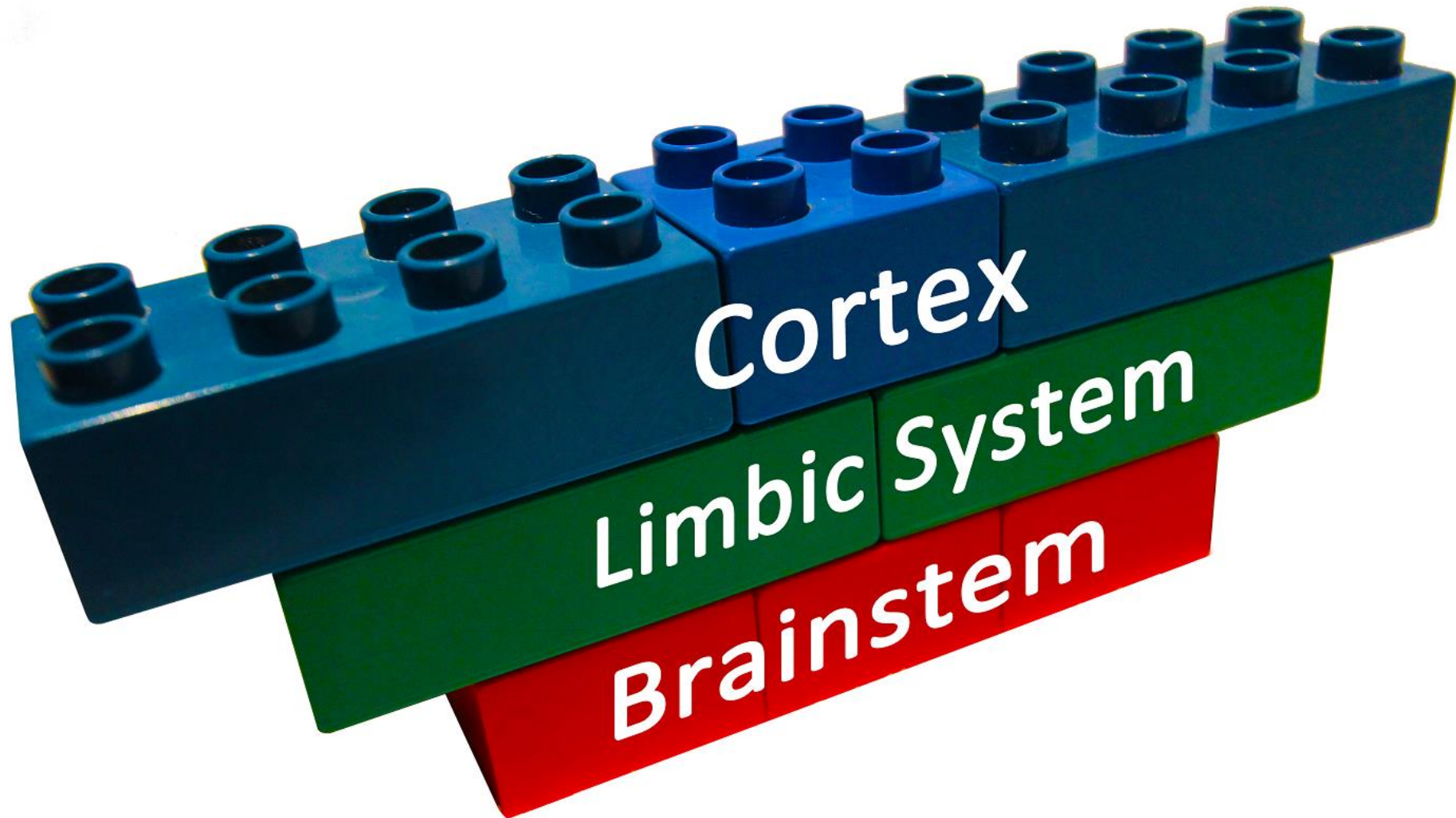


References: Caldji et al (1998), Francis et al (1999), Weaver et al (2004).

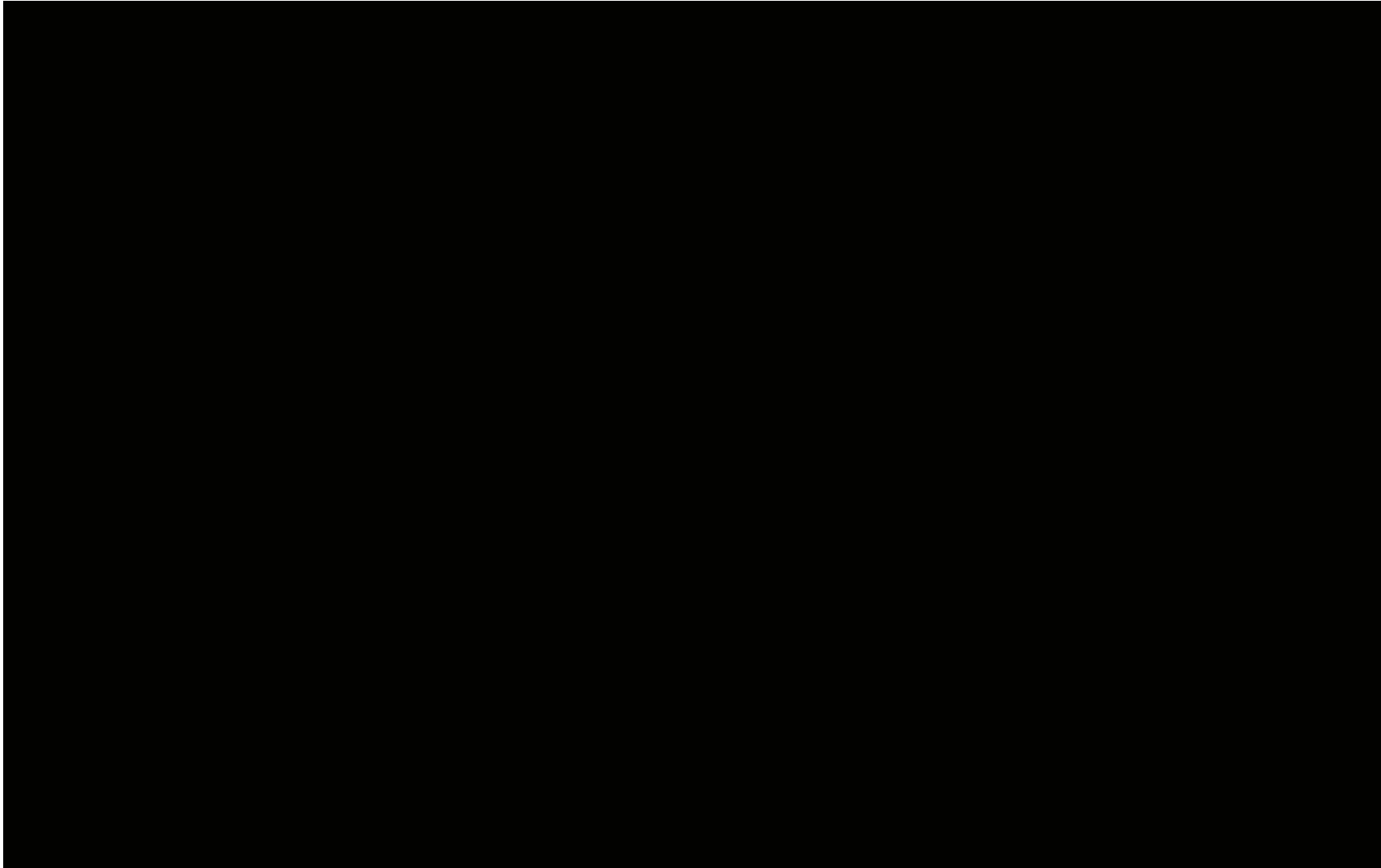


Brainwave[™]
early years last forever

Brain Backs Down



Stress





Risk and Protective Factors

Factors which can impact outcome

Risk Factors

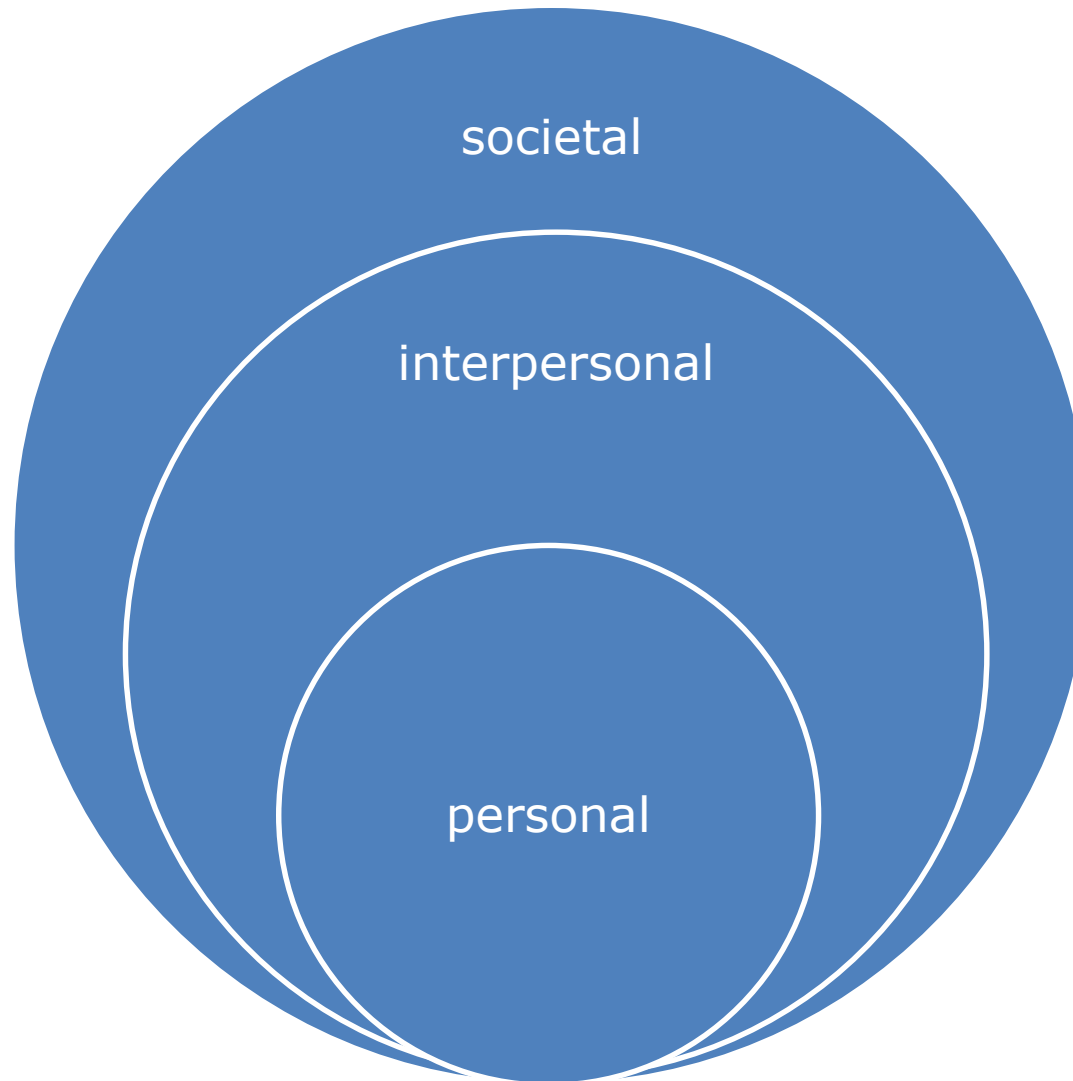
- 🧠 increase the likelihood of a poor outcome
- 🧠 do not **cause** the outcome, but increase its probability

Protective Factors

- 🧠 Higher probability of good outcomes
- 🧠 Do not guarantee a good outcome



Risk/Protective factors





Early Childhood Education & Care



Potential Benefits

More likely when:

- 🧠 3 - 4 years old
- 🧠 Attending part-time
- 🧠 ECE is of high quality
- 🧠 Care arrangements are stable



Potential Risks

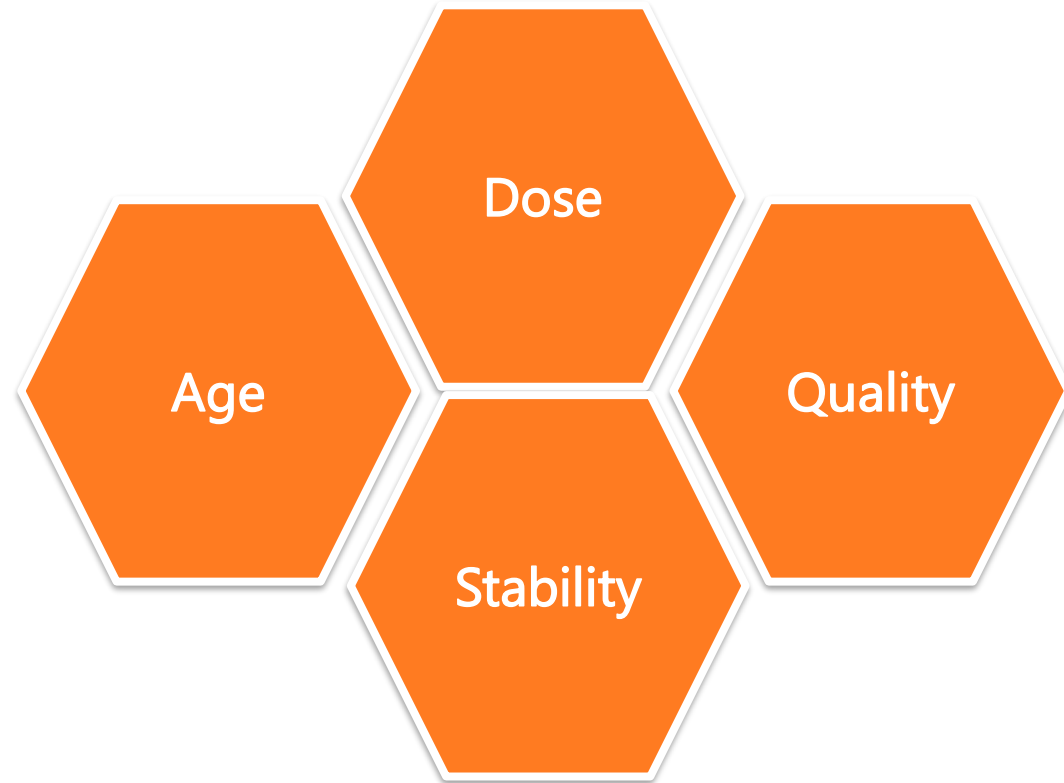
More likely when:

- 🧠 Below 3 years, especially babies
- 🧠 Increasing hours in ECE
- 🧠 Poor quality ECE
- 🧠 Instability of care arrangements



What to Consider...

These factors all influence the likely outcomes



Some Risk Factors

Prenatal

-  Chronic maternal stress
-  Alcohol exposure
-  Smoking
-  Illicit drugs

Postnatal

-  Toxic stress
-  Parental depression
-  Child abuse
-  Family conflict
-  Family violence
-  Neglect
-  Poverty

References: Ashman et al (2008), Davies & Woitach (2010), Derauf et al (2009), Egeland (2009), Evans et al (2008), Niccols (2007), Nikulina et al (2011), NSCDC (2005), NSCDC (2006), Rice et al (2010), Twardosz & Lutzker (2010).

Lifetime effects

Number of Adverse Childhood Events



Abuse

- physical
- psychological
- sexual



Neglect

- emotional
- physical

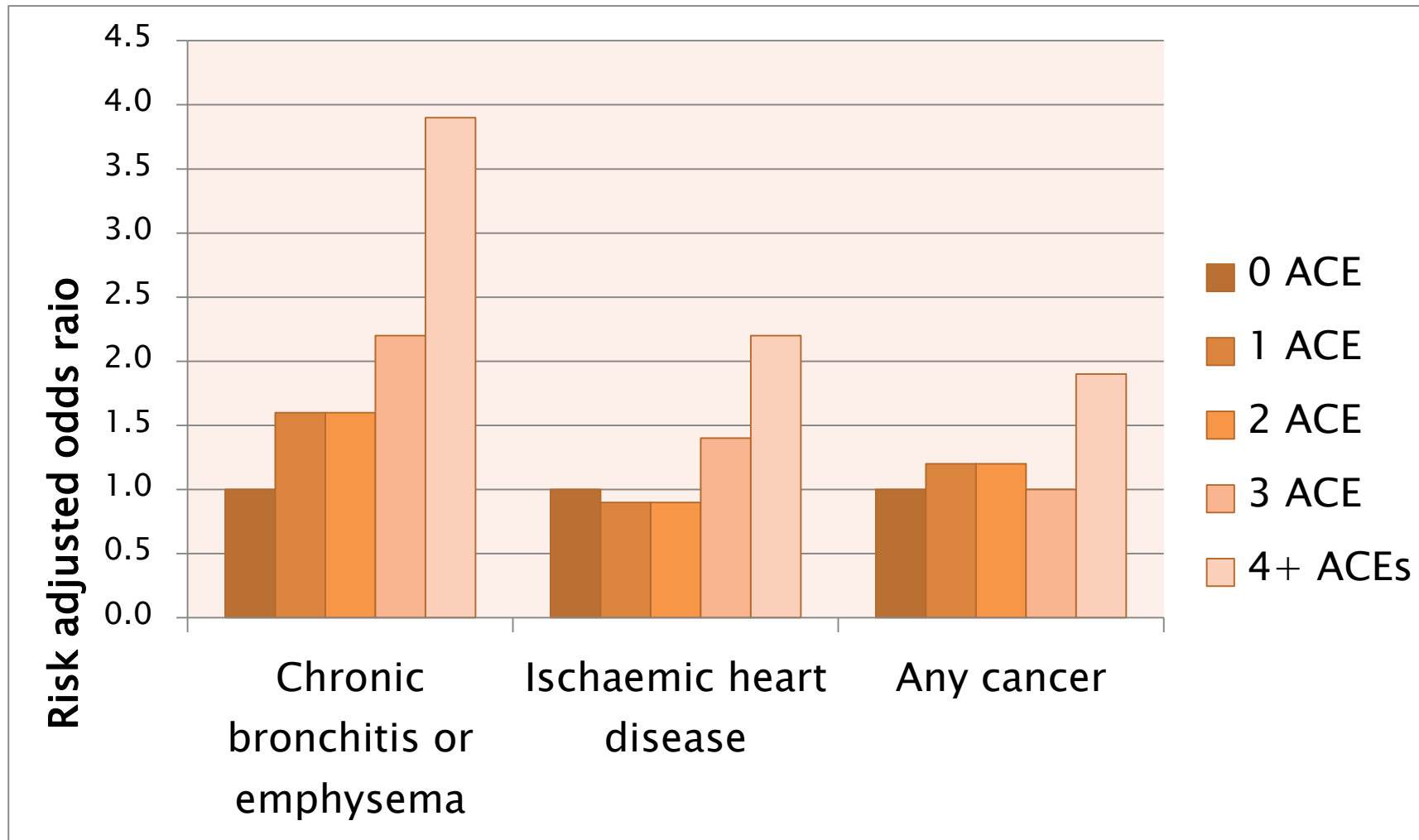


Household Dysfunction

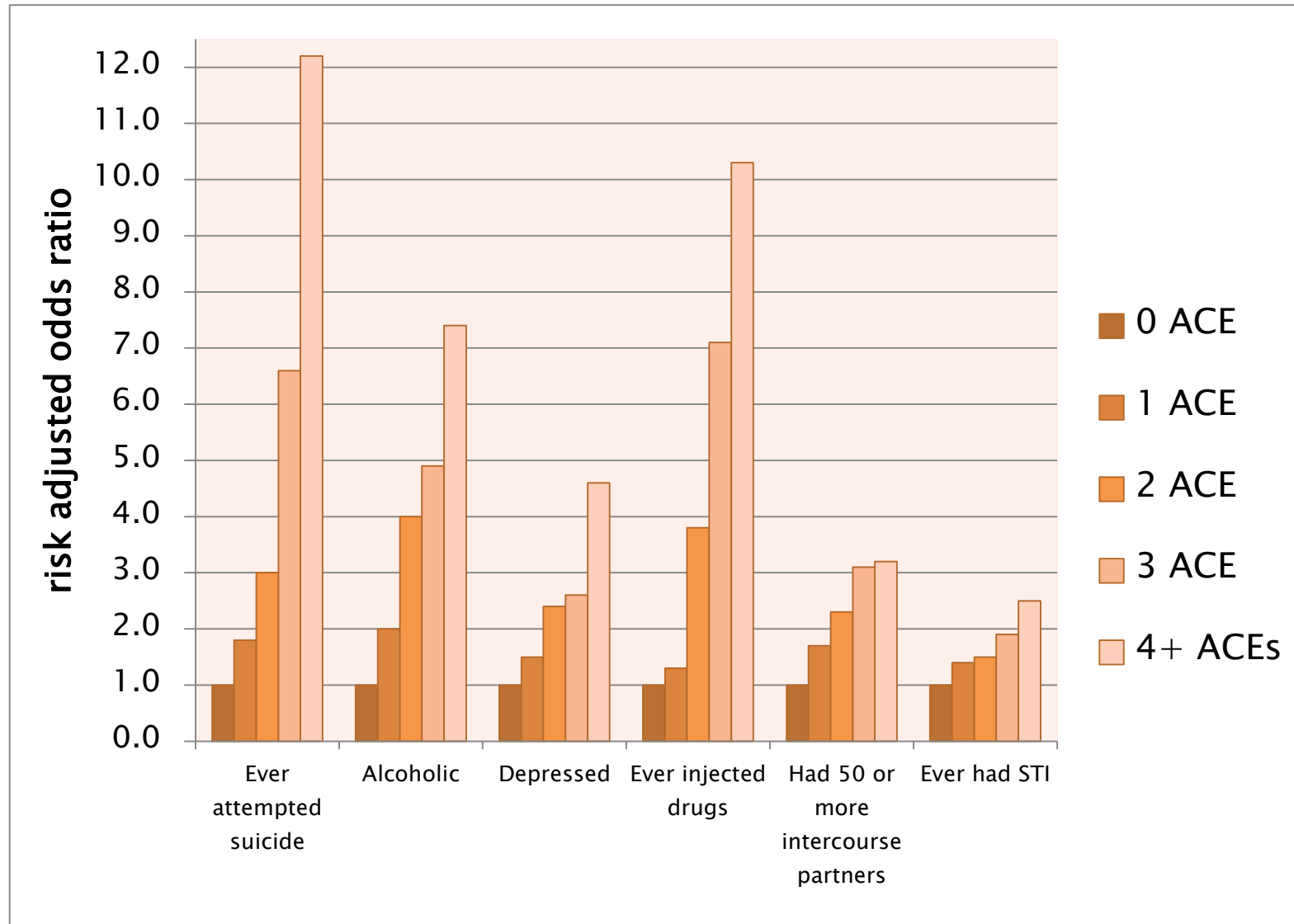
- Alcohol & drug abuse
- Mental illness
- Violence towards mother/stepmother
- Parental separation/divorce
- Criminal behaviour



ACE – health outcomes



ACE – risk poor outcomes



Reference: Felitti et al (1998), Hillis et al (2001).



Brainwave
early years last forever



Senses and Relationships



Attachment is . . .

“Attachment is the umbrella under which all other development occurs”

Lauren Porter, 2009, p.46



Being Responsive



Reference: Tronick et al (1989).



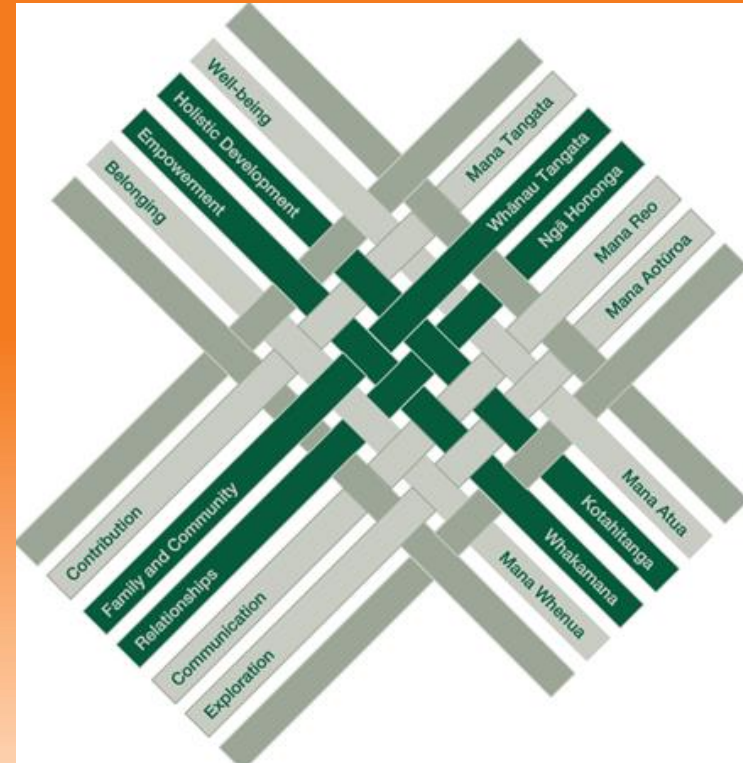
Brainwave[™]
early years last forever

Supporting Secure Attachment



References: Bowlby (1988), Dykas (2011), Perry (2004), Schore (2000).

What You Can Do

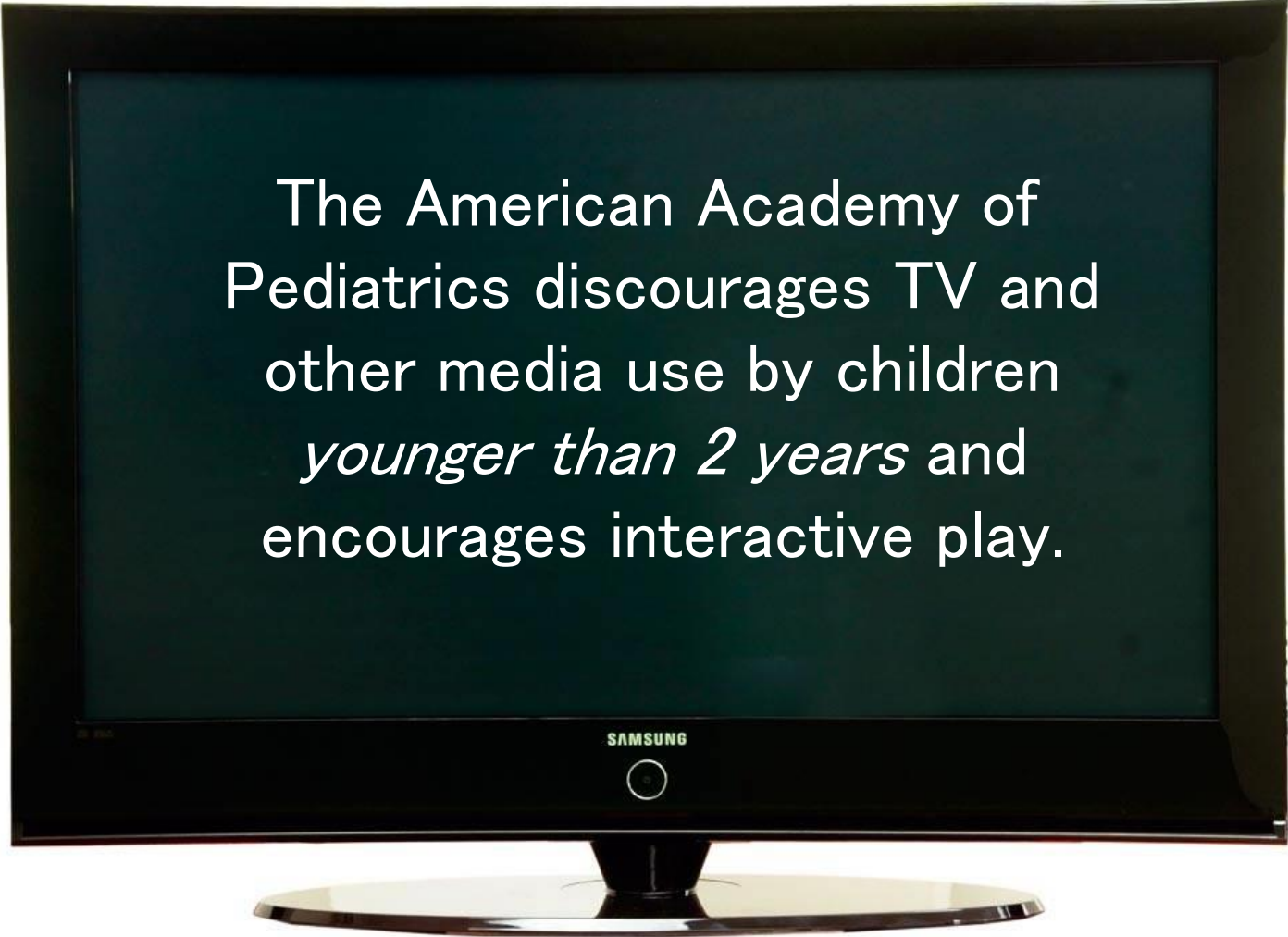


Electronic Media



Reference: Christakis & Zimmerman (2009).

Guidance on Screens...

A black Samsung monitor with a silver base. The screen is dark blue and displays white text. The text reads: "The American Academy of Pediatrics discourages TV and other media use by children *younger than 2 years* and encourages interactive play." The Samsung logo is visible at the bottom center of the monitor.

The American Academy of
Pediatrics discourages TV and
other media use by children
younger than 2 years and
encourages interactive play.

References: Council on Communications and Media (2011), DeLoache et al (2010), Landhuis et al (2007), Schmidt et al (2008), Zimmerman & Christakis (2007).

Touch



References: Feldman et al (2010), Field (2010), Field et al (2008), Weiss et al (2004).

Breastfeeding



References: Britton et al (2006), Jones et al (2004), Karmaus et al (2008), Kramer et al (2008),
Quinn et al (2001), Slykerman et al (2005), WHO (2010).



Brainwave[™]
early years last forever

Spot What is Wrong?



“Dad. Dad. Dad”



Shared Reading



References: Bus et al (1995), Lariviere & Rennick (2011), Rodriguez et al (2009),
Storch & Whitehurst (2001).



Brainwave[™]
early years last forever

Play is Their Work



References: Elkind (2007), Frost (1998), Ginsburg (2007), Hughes (2010).

Fathers

Unique role

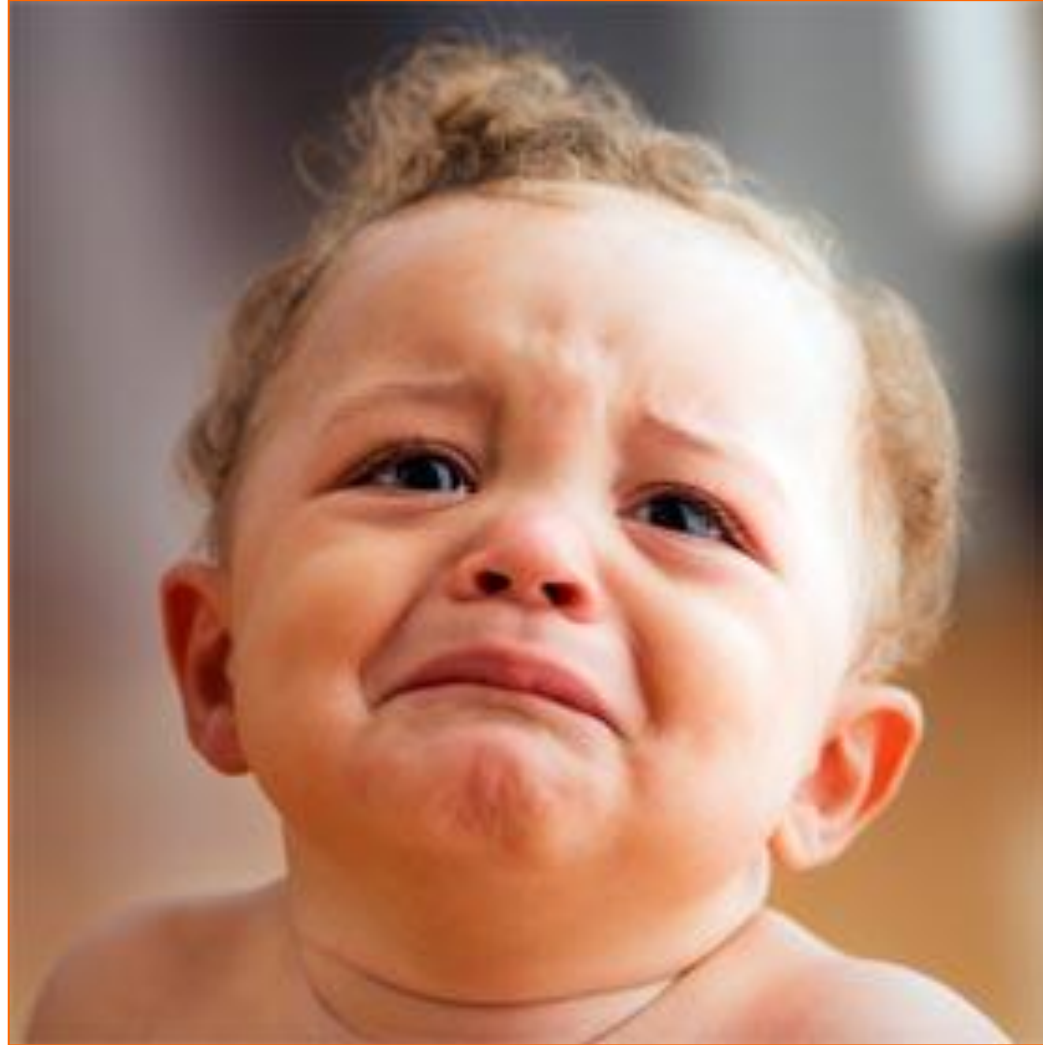
- Exploration
- Play

Dependent on

- Paternal sensitivity
- Trusted and dependable
- Positive supportive engagement



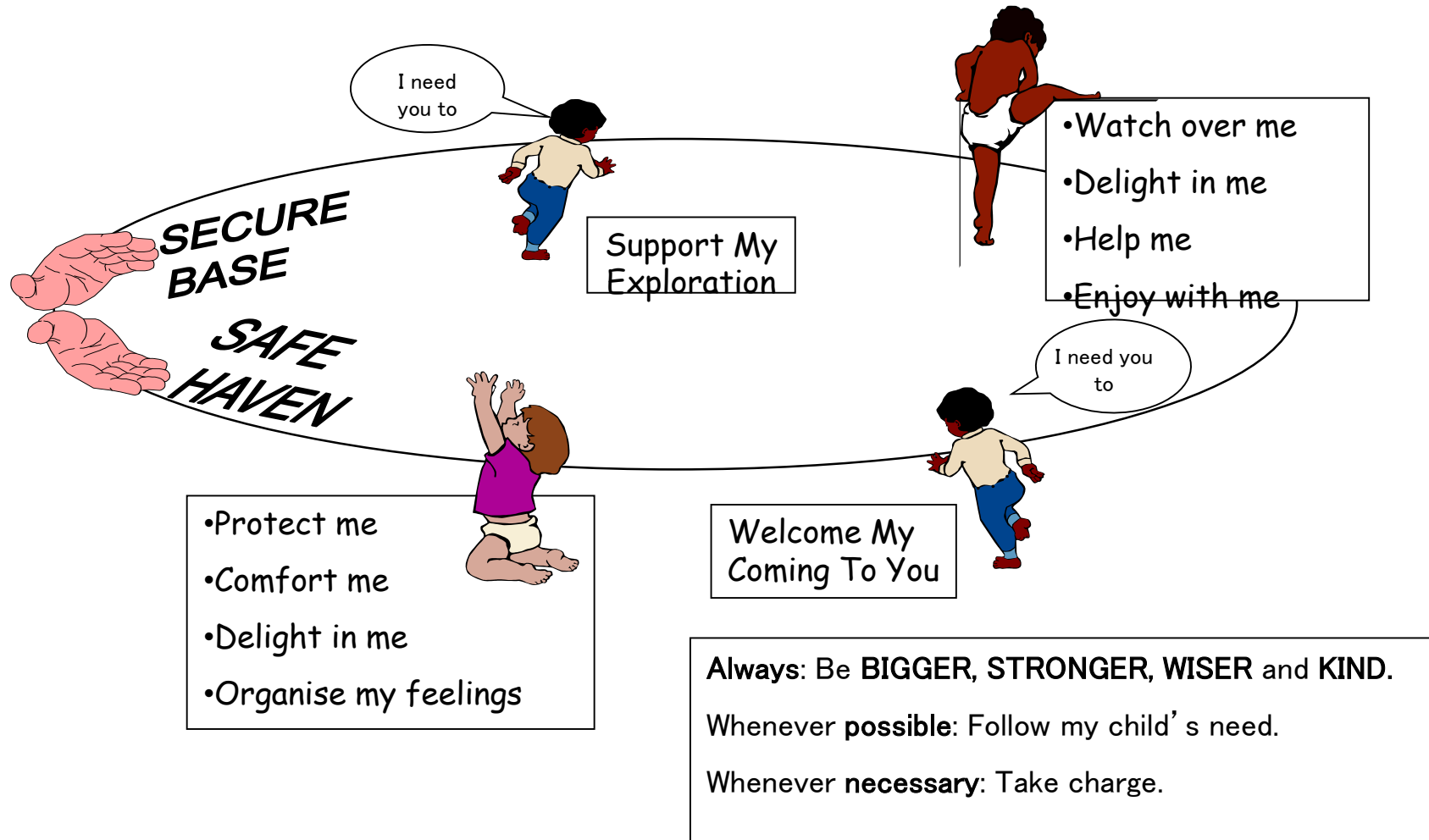
What is He Trying to Tell You?



Brainwave[™]
early years last forever

Circle of Security

Parent attending to the child's needs





Staying in touch...

Latest news and articles on our website:

www.brainwave.org.nz

Join us on Facebook and Twitter:

Facebook: www.facebook.com/brainwavetrust

Twitter: [@BrainwaveTrust](https://twitter.com/BrainwaveTrust)

Fundraise for us by participating in an event:

www.everydayhero.org.nz



And, please help us spread our message by making a donation today in the envelope provided. Thank you.



Every child
deserves
the best start in
life



www.brainwave.org.nz

Nicky's recommended reading list

For Doc's

- Robin Fancourt – Brainy Babies
- Bruce Perry – The Boy Who Was Raised as a Dog
The Inaugural Margaret McCain Lecture, September 23, 2004 by Dr. Bruce Perry, M.D., Ph.D., the Senior Fellow of the Child Trauma Academy in Houston, Texas.

[Maltreatment and the Developing Child: How Childhood Experience Shapes Child and Culture](#)

For Doc's and patients

- Diane Levy – Of Course I Love you, Now go to your room
- John Gottman – Raising An Emotionally Intelligent Child
- Adele Faber – How to Talk so Kids will Listen and Listen so Kids Will talk

Three Core Concepts in Early Development

2 Serve & Return Interaction Shapes Brain Circuitry

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

Center on the Developing Child  HARVARD UNIVERSITY