

## Introduction

From 2000-2019, Iris the Dragon focused on assisting individuals who were on the “injured” or “ill” end of the Mental Health Continuum by providing education about mental illness, and by creating de-stigmatizing messaging for the communities surrounding those with a mental health concern. While this work is not done, there has been a positive cultural change in the way that society responds to and interacts with those who have a mental illness, and the world today is much more inclusive for those who are experiencing mental illness than in previous decades.

Because of this, Iris the Dragon is shifting its focus to a more upstream and preventative approach. We will now be targeting those on the “healthy” and “reacting” side of the Mental Health Continuum. Having good mental health throughout life can increase resilience, which can protect against mental illness down the line, as well as act as a buffer for the normal stressors and hardships that everyone experiences in life. This tool was designed with the Life Course Perspective in mind, which the World Health Organization defines as:

“The life-course approach aims at increasing the effectiveness of interventions throughout a person’s life. It focuses on a healthy start to life and targets the needs of people at critical periods throughout their lifetime. It promotes timely investments with a high rate of return for public health and the economy by addressing the causes, not the consequences, of ill health.” (1)

This approach recognizes that individuals have different needs during different periods of life. These differences can be due to biological, hormonal, cognitive, and social factors that change throughout the lifespan. This tool has broken up the life into stages and identified what factors are likely to be present for individuals at that point. Furthermore, common stressors in those life stages have been identified. The goal of this tool is to help individuals understand what may be happening in their bodies and environment in order to help them prepare for stressful life events and better cope with them when they arise. Hopefully, people in the “healthy” and “reacting” populations of the continuum using this tool will be able to remain on this side of the continuum.

While Iris the Dragon believes this tool will be helpful for many, it is important to mention some limitations. First, not everyone will experience every listed stressor, and some may experience stressful situations that are not on this list. Furthermore, it is possible that these stressors might occur at different ages than they are listed in this model. Every person is different, but the model is based on the most common stressors during the most likely life stage using the scientific information that is currently available. Second, the social and economic framework used to build this model was predominantly North American, using evidence from mostly Western-based studies and organizations. Not every life stage or stressor will be universally applicable.

## The Model

| Stages           | <i>0-3 Years</i>  | <i>4-10 Years</i>   | <i>11-18 Years</i>   | <i>19-45 Years</i>   | <i>46-65 Years</i>   | <i>65+ Years</i>   |
|------------------|---|---|--|--|--|--|
| <b>Stressors</b> | <ul style="list-style-type: none"> <li>- Parental divorce or isolation</li> <li>- Child abuse</li> <li>- Neglect</li> </ul> | <ul style="list-style-type: none"> <li>- School stress</li> <li>- Beginning school for the first time</li> <li>- Changing schools</li> <li>- Family conflict</li> <li>- Pressure from parents to perform well</li> <li>- Family disruption</li> <li>- Stressed parents</li> </ul> | <ul style="list-style-type: none"> <li>- School stress</li> <li>- Body image issues</li> <li>- New romantic or sexual feelings</li> <li>- Bullying or abuse</li> <li>- Graduating</li> <li>- Changing schools</li> <li>- Family conflict</li> <li>- Pressure from parents to perform well</li> </ul> | <ul style="list-style-type: none"> <li>- Work stress</li> <li>- Marriage</li> <li>- Reproductive outcomes</li> <li>- Separation or divorce</li> <li>- Job loss and unemployment</li> <li>- Buying a home</li> <li>- Starting post-secondary education</li> <li>- Graduating</li> <li>- Legal trouble</li> <li>- Caring for children</li> </ul> | <ul style="list-style-type: none"> <li>- Work stress</li> <li>- Job loss and unemployment</li> <li>- Child leaving home</li> <li>- Becoming a caregiver to a parent, spouse, or family member</li> <li>- Loneliness</li> <li>- Death of parents</li> <li>- Loss of fertility</li> <li>- Sexual difficulties</li> <li>- Changes in physical appearance</li> </ul> | <ul style="list-style-type: none"> <li>- Retirement</li> <li>- Caring for elderly family members or friends</li> <li>- Spouse bereavement</li> <li>- Loneliness</li> <li>- Loss of friends due to a move or death</li> <li>- Movement (or worry about movement) to a nursing home</li> <li>- Hospitalizations</li> <li>- Management of chronic illnesses and injuries</li> <li>- Loss of independence</li> </ul> |

## Life Stages

The following stages were determined by identifying biological, hormonal, cognitive, and social factors that individuals experience during each of these age ranges. Again, there may be

some variation among individuals, but for the most part those who are in these categories have a large number of commonalities.

### *0-3 Years Old: Figuring Out the World*

The first three years of life is a period of incredible growth and rapid mental development. During this time, a child's brain develops more than a million neural connections every second (2). In the first year of life, a child's brain doubles in size, and by age three it is nearly 80% of its adult size (3). After the first three years, changes in the brain become more subtle. Neural connections that are used often become stronger, while those that are no longer used are gradually eliminated (3). This can be seen visually with the use of MR images. Changes in the gross brain structure during the first two to three years are immense, and after that the changing structure of the brain begins to slow (4).

Socially, children in this stage are still entirely dependent on their parents, and have relatively limited social connections outside of their immediate family. They are just beginning to understand how to manipulate their own bodies, as well as explore the world around them and how they relate to the physical environment (5). They are also just learning how to communicate with those around them, setting them up for the next stage where they explore human relationships.

### *4-10 Years Old: Figuring Out Other People*

Brain development in this period has slowed relative to the stage before, and it becomes more fine-tuned. By age five, a child's brain is at 90% of its adult size--nearly full grown (3). The body, however, has not yet reached the stage of physical maturation that is pronounced in the next stage.

Socially, children in this stage are beginning to experience some independence from their parents. Many of them are attending daycare or school, some being away from their parents every day for the first time. Children at this stage are beginning to expand their own social circle, and by age four, most children will be able to differentiate between "my friend" and other peers

(6). During this period of social exploration, children learn critical skills such as sharing, cooperating, listening to others, negotiating, and managing disagreements (6).

### *11-18 Years Old: Figuring Out the Self*

This stage is largely defined by the physical, hormonal, sexual, cognitive, and emotional changes that accompany puberty. Though it varies from person to person, generally puberty begins around the age of 11 or 12 and ends around 17 or 18 years old (7). During this time, adolescents go through a rapid growth spurt and develop secondary sexual characteristics (7).

Adolescence is often considered one of the most tumultuous periods of life. Rapid, unpredictable change--such that occurs in puberty--can ramp up feelings of fear and uncertainty (8). Adolescents, who often have not yet developed healthy coping mechanisms to deal with uncertainty, frequently respond to these changes with volatility in attitudes, moods, and behaviors (8).

Socially, adolescents in this stage are beginning to understand the self. They begin to develop a sense of purpose, morality, and identity. Friendships become increasingly more important, and most teens begin to have sexual or romantic feelings for the first time (7).

### *19-45 Years Old: Building A Life*

These are the peak reproductive years for both men and women, and most (though certainly not all) adults have children in this timeframe. For women, fertility begins to decrease at the age of 30, and then declines more rapidly in the mid-30s. By age 45, fertility has declined so much, it is unlikely that a woman will be able to get pregnant naturally (9). Furthermore, muscle mass begins to decline in both men and women around the age of 30, after which it decreases between 3-8% per decade until the age of 60, when it begins to decline more rapidly (10).

Socially, people in this stage are starting to build their lives. This stage is when most people decide on post-secondary education, careers, children, life partners, and where to live. They may take on new roles like caregiver (either to children or elderly parents) or employee. The life decisions made during this stage often have a great impact on the following stages.

### *46-65 Years Old: Finding Stability*

Beginning in the early 40s for men and the late 40s for women, people in this stage often experience hormonal changes. For men, this means a decline in testosterone levels (though some men do retain high levels throughout the lifespan) (11). For women, there are changes and declines in estrogen, progesterone, and testosterone, which culminate in loss of fertility (12). For both men and women, these hormonal changes could lead to a change in sexual interest and activity (11,12). Cognitive decline in this period is also possible, though highly variable, with studies suggesting it could start anywhere from age 50 to 70 (13).

Socially, adults in this age are typically still working and possibly caretaking. Often people in this stage are enjoying a higher degree of financial stability than in previous stages, as they have had more decades to accumulate wealth and make financial decisions.

### *65+ Years Old: Living the Life That's Been Built*

During this period, the brain shrinks in volume, especially in the frontal cortex. Memory decline also occurs more rapidly during this period (14). As the vascular system ages, blood pressure rises and the risk of stroke or ischemia increases (14). Additionally, muscle mass begins to decline more rapidly after the age of 60, which is a leading cause of and contributor to disability in older adults (10).

Socially, this is usually the time when adults retire, which often brings a large lifestyle shift. Change in regular income may affect daily habits and activities. Priorities may shift from career to family and hobbies. Adults in this stage may start losing older family members, friends, and spouses due to death, moving away, or illness, putting them at increased risk for social isolation. If physical degeneration is severe enough, individuals in this stage may lose independence and need to live with a relative or care provider.

### *Why This Model?*

Several other models were researched and considered while building this one. First, we sought out the life-stage models used by government health agencies for several countries, including Australia Health Direct (15), the UK's Centre for Mental Health (16), the Canada Centre for Health Promotion (17), the US Centers for Disease Control and Prevention (18), and the New Zealand Ministry of Health (19). These were not used for several reasons. First, most of these models were designed with physical health in mind rather than mental health, so the delineation between stages was not always applicable. Second, the models that did address mental health were mostly concerned with diagnosing and treating mental illnesses and disorders, rather than addressing the life conditions that may have led to those disorders.

Because the government agency models were primarily focused on physical health, we decided to search for life-stage models in the Psychology field. With this in mind, we researched Erik Erikson's Stages of Psychosocial Development (20). Again, we found that this model is used primarily in a clinical setting to diagnose developmental problems and treat them. This does not follow the life course approach, so we did not use it. Initially we decided to create this model because we felt there was not already a widely available model that accomplished our goals, so it is unsurprising that we were unable to find one.

## **Stressors**

Below is a list of common life stressors in the stage they most often occur. Not everyone will experience every stressor, and not every stressor someone will experience is on this list. Additionally, an individual may experience a stressor in a different stage than is listed below. This is meant to be a helpful guide for a general audience, but every human experience is different. Furthermore, these stressors are largely based in a North American framework, so not everything will be universally applicable.

### *0-3 Years Old*

- Parental divorce or isolation (21)
- Child abuse (21)
- Neglect (21)

#### *4-10 Years Old*

- School stress (31)
  - Grades, general workload, etc.
- Beginning school for the first time (24)
- Changing schools (24, 34)
- Family conflict (34)
  - Fighting, violence, divorce, etc.
- Pressure from parents to perform well (33, 34)
- Family disruption (33)
  - Deployment, prison, illness, etc.
- Stressed parents (33)

#### *11-18 Years Old*

- School stress (31, 34)
  - Grades, applying for college, etc.
- Body image issues (31)
  - Developing faster or slower than peers, lost sense of self as body changes, etc.
- Having new romantic or sexual feelings (31)
  - learning how to navigate new sexual or romantic feelings, could be questioning sexual orientation or gender identity, etc.
- Bullying or abuse (31, 32, 34)
- Graduating (24)
- Changing schools (24, 34)
- Family conflict (34)
  - Fighting, divorce, violence, etc.
- Pressure from parents to perform well (33, 34)

#### *19-45 Years Old*

- Work stress (21, 22, 23, 24)
  - Effort-reward imbalance, employment grade, working hours, excessive workload, insecure position, promotion, starting a new job, etc.
- Marriage (23)
- Reproductive outcomes (23, 28, 29)
  - Pregnancy, inability to conceive, miscarriage, or induced abortion
- Separation or divorce (25)
- Job loss and unemployment (25)
- Buying a home (24)
- Starting post-secondary education (24)
- Graduating (24)
- Legal trouble (24)
- Caring for children (35)

#### *46-65 Years Old*

- Work stress (21, 22, 23, 24)
  - Effort-reward imbalance, employment grade, working hours, excessive workload, insecure position, promotion, starting a new job, etc.
- Job loss and unemployment (25)
- Child leaving home (24, 35)
- Becoming a caregiver to a parent, spouse, or family member (35)
- Loneliness (35)
- Death of parents (35)
- Loss of fertility (29)
- Sexual difficulties (36, 24, 37)
- Changes in physical appearance (36)

#### *65+ Years Old*



- Retirement (21, 37)
- Caring for elderly family members or friends (21)
- Spouse bereavement (21)
- Loneliness (35)
- Loss of friends due to a move or death (27)
- Movement (or worry about movement) to a nursing home (27)
- Hospitalizations (27)
- Management of chronic illnesses and injuries (26)
- Loss of independence (37)

### *Stressors at Any Age*

There are some stressors that can happen at any age or stage of life. While some stressors are more likely to happen at certain ages (for example, young people ages 12-34 are those most at risk of being sexually assaulted (30)), they can happen to anyone at any time of life. Other stressors only happen to certain people (like racism), but can continue to happen throughout the duration of the individual's life. The following list of stressors cannot be placed in any one stage of life, but the consequences of the stressor and the response of the individual may differ depending on the age in which the stressor occurs.

- Natural disaster (26)
- Death of a loved one (15, 26)
- Injury (25)
- Perceived life threat (26)
- Exposure to war (26)
- Sexual assault (26)
- Trauma (26)
- Illness (25, 26)
- Moving (25, 26)
- Vacations (24)
- Holidays (24)

- Discrimination (35, 38)
- Racism (38)
- Financial difficulties and/or lack of access to resources (35)

## Search Strategy

While researching for this model, both Google and the University of Michigan Library were used. Google was used predominantly for government and mental health organization websites, with search terms including: “Australian Health Department life stages,” “UK life stages,” “CDC life stages,” “Developmental stages,” “Most stressful life events,” “Life stressors,” and “Life Course Perspective.”

The University of Michigan database was used for more technical or scientific information, with search terms such as: “Stress and the body,” “Hormone changes through the life cycle,” “Early life brain development,” “Puberty and changes in the body,” “Reproduction and changes in the body,” and “Changes in the body as it ages.”

## References

1. World Health Organization. (2020). *Life-Course Approach*. Retrieved from: <https://www.euro.who.int/en/health-topics/Life-stages>
2. Zero to Three. (2020). *Brain Development*. Retrieved from: <https://www.zerotothree.org/early-development/brain-development>
3. Arizona PBS. (n.d.). *Early childhood brain development has lifelong impact*. Retrieved from: <https://azpbs.org/2017/11/early-childhood-brain-development-lifelong-impact/>
4. Stiles, J., & Jernigan, T. L. (2010). The basics of brain development. *Neuropsychology review*, 20(4), 327–348. <https://doi.org/10.1007/s11065-010-9148-4>
5. Zero to Three. (2020). *Your Child's Development: Age-Based Tips From Birth to 36 Months*. Retrieved from: <https://www.zerotothree.org/resources/series/your-child-s-development-age-based-tips-from-birth-to-36-months>
6. The Australian Parenting Website. (2018, July 2). *Preschoolers making friends*. Retrieved from: <https://raisingchildren.net.au/preschoolers/behaviour/friends-siblings/preschoolers-making-friends>
7. Medline Plus. (2020, August 4). *Adolescent development*. Retrieved from: <https://medlineplus.gov/ency/article/002003.htm>
8. National Alliance on Mental Health. (2018, May 30). *Is It a Mental Health Problem? Or Just Puberty?* Retrieved from:

<https://www.nami.org/Blogs/NAMI-Blog/May-2018/Is-It-a-Mental-Health-Problem-Or-Just-Puberty>

9. American College of Obstetricians and Gynecologists. (2018, July). *Having a Baby After Age 35: How Aging Affects Fertility and Pregnancy*. Retrieved from:  
<https://www.acog.org/patient-resources/faqs/pregnancy/having-a-baby-after-age-35-how-aging-affects-fertility-and-pregnancy>
10. Volpi, E., Nazemi, R., & Fujita, S. (2004). Muscle tissue changes with aging. *Current opinion in clinical nutrition and metabolic care*, 7(4), 405–410.  
<https://doi.org/10.1097/01.mco.0000134362.76653.b2>
11. Harvard Health Publishing. (2008, January). *Testosterone, aging, and the mind*. Retrieved from:  
[https://www.health.harvard.edu/newsletter\\_article/testosterone\\_aging\\_and\\_the\\_mind](https://www.health.harvard.edu/newsletter_article/testosterone_aging_and_the_mind)
12. The North American Menopause Society. (2010). *Changes in Hormone Levels*. Retrieved from:  
<https://www.menopause.org/for-women/sexual-health-menopause-online/changes-at-midlife/changes-in-hormone-levels>
13. Salthouse T. A. (2009). When does age-related cognitive decline begin?. *Neurobiology of aging*, 30(4), 507–514. <https://doi.org/10.1016/j.neurobiolaging.2008.09.023>.
14. Peters R. (2006). Ageing and the brain. *Postgraduate medical journal*, 82(964), 84–88.  
<https://doi.org/10.1136/pgmj.2005.036665>.
15. Health Direct. (n.d.). *Life stages*. Retrieved from:  
<https://www.healthdirect.gov.au/life-stages>
16. Centre for Mental Health. (2019, Jan. 3). *How mental health can be affected at various stages of development*. Retrieved from:  
<https://www.centreformentalhealth.org.uk/how-mental-health-can-be-affected-various-stages-development>
17. Government of Canada. (2008, April 7). *Centre for Health Promotion (CHP)*. Retrieved from:  
<https://www.canada.ca/en/public-health/services/health-promotion/centre-health-promotion.html>
18. Centers for Disease Control and Prevention. (2016, May 12). *Life Stages and Populations*. Retrieved from:  
<https://www.cdc.gov/nchs/fastats/life-stages-and-populations.htm>
19. Ministry of Health. (n.d.). *Life stages*. Retrieved from:  
<https://www.health.govt.nz/our-work/life-stages>
20. Verywell Mind. (2020, June 26). *Erik Erikson's Stages of Psychosocial Development*. Retrieved from:  
<https://www.verywellmind.com/erik-eriksons-stages-of-psychosocial-development-2795740>

21. Kagamimori, S., Nasermoaddeh, A., and Wang, H. (2004). Psychosocial stressors in inter-human relationships and health at each life stage: A review. *Environ Health Prev Med.*, 9(3): 73–86. doi: 10.1007/BF02898065.
22. Unhealthy Work. (2020). *Workplace Stressors*. Retrieved from: <https://unhealthywork.org/workplace-stressors/>
23. Mayo Clinic. (2019, March 28). *Stress management: Know your triggers*. Retrieved from: <https://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-management/art-20044151>
24. The American Institute of Stress. (n.d.). *The Holmes-Rahe Stress Inventory*. Retrieved from: <https://www.stress.org/holmes-rahe-stress-inventory>
25. University Hospitals. (2015, July 2). *The Top 5 Most Stressful Life Events and How to Handle Them*. Retrieved from: <https://www.uhhospitals.org/Healthy-at-UH/articles/2015/07/the-top-5-most-stressful-life-events>
26. Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: psychological, behavioral, and biological determinants. *Annual review of clinical psychology*, 1, 607–628. <https://doi.org/10.1146/annurev.clinpsy.1.102803.144141>.
27. Jeon, H. S., & Dunkle, R. E. (2009). Stress and Depression Among the Oldest-Old: A Longitudinal Analysis. *Research on aging*, 31(6), 661–687. <https://doi.org/10.1177/0164027509343541>.
28. Broen, A. N., Moum, T., Bødtker, A. S., & Ekeberg, O. (2005). The course of mental health after miscarriage and induced abortion: a longitudinal, five-year follow-up study. *BMC medicine*, 3, 18. <https://doi.org/10.1186/1741-7015-3-18>.
29. Harvard Health Publishing. (2009, May). *The psychological impact of infertility and its treatment*. Retrieved from: [https://www.health.harvard.edu/newsletter\\_article/The-psychological-impact-of-infertility-and-its-treatment](https://www.health.harvard.edu/newsletter_article/The-psychological-impact-of-infertility-and-its-treatment)
30. RAINN. (2020). *Victims of Sexual Violence: Statistics*. Retrieved from: <https://www.rainn.org/statistics/victims-sexual-violence>
31. Cincinnati Children's Hospital Medical Center. (n.d.). *Suicide Awareness and Prevention | Teen Stressors*. Retrieved from: <https://www.cincinnatichildrens.org/service/a/suicide-awareness/stressors>
32. Pacer's National Bullying Prevention Center. (2020, May). *Bullying Statistics*. Retrieved from: <https://www.pacer.org/bullying/resources/stats.asp>
33. WebMD. (2015, Aug. 27). *10 Reasons Your Child Might Be Stressed*. Retrieved from: <https://www.webmd.com/special-reports/kids-and-stress/20150827/what-you-can-do>
34. Psycom. (2018, Nov. 25). *6 Common Triggers of Teen Stress*. Retrieved from: <https://www.psycom.net/common-triggers-teen-stress/>

35. Scott, S. B., Whitehead, B. R., Bergeman, C. S., & Pitzer, L. (2013). Combinations of stressors in midlife: examining role and domain stressors using regression trees and random forests. *The journals of gerontology. Series B, Psychological sciences and social sciences*, 68(3), 464–475. <https://doi.org/10.1093/geronb/gbs166>.
36. Psychology Today. (2012, Sep. 21). *Sexual Issues in Midlife*. Retrieved from: <https://www.psychologytoday.com/us/blog/heart-and-soul-healing/201209/sexual-issues-in-midlife>
37. Pitt B. (1998). Loss in late life. *BMJ (Clinical research ed.)*, 316(7142), 1452–1454. <https://doi.org/10.1136/bmj.316.7142.1452>.
38. Williams D. R. (2018). Stress and the Mental Health of Populations of Color: Advancing Our Understanding of Race-related Stressors. *Journal of health and social behavior*, 59(4), 466–485. <https://doi.org/10.1177/0022146518814251>.