

**THE HORMONE FACTOR:**  
PMS-POSTPARTUM-PERIMENOPAUSE CONNECTION

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Text "PPD" to 444999

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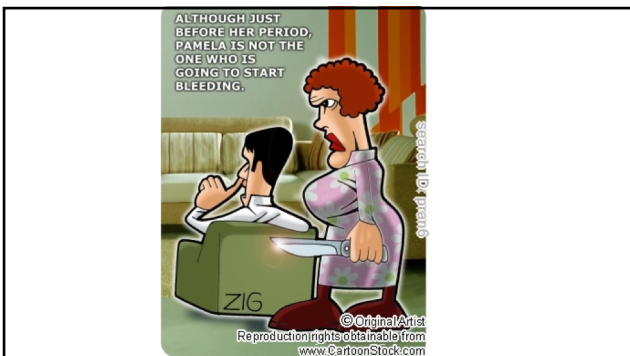
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**HORMONE + BRAIN + LIFE  
EXPERIENCE LINK**




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**FEMALE MENTAL HEALTH =**

**Brain**  
+  
**Hormones**  
+  
**Life Experiences**


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**THE FEMALE BRAIN**



- **Brain Stem & Limbic Brain**
  - Regulates arousal, emotion
    - Amygdala
    - Hippocampus
    - Hypothalamus
    - HPA Axis
- **Cortex**
  - Regulates limbic & brain stem area




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### FEMALE BABY BRAIN

Female brains are wired for:

- Empathy
- Hearing others
- Being Heard
- Communication
- Observation
- Reading Emotion
- Emotionless expressions from caregivers-very confusing, creates sense of negative self-worth

Male babies have surge in testosterone in utero that leads to shrinking of centers for communication, observation and emotion-processing



Brizendine, 2006

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### FEMALE BABY BRAIN

Girls more likely to inherit their mother's nervous system

- Because of the female ability to perceive and incorporate emotional cues, a girl may actually take the mother's nervous system into her own
- This "nervous system environment" the girl experiences in first 2 years can have lasting consequences as she develops her own perception of reality
- Stressed mothers become less nurturing and baby girls incorporate this into their being

Boys seem less likely to take on mother's nerves



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The Female Brain is built for connection.



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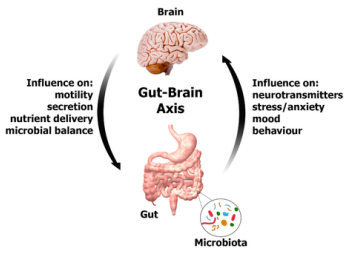
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ARE YOU CARING FOR YOUR 2<sup>ND</sup> BRAIN?

Brain  
+  
Gut  
+  
Axis



Influence on: motility, secretion, nutrient delivery, microbial balance

Influence on: neurotransmitters, stress/anxiety, mood, behaviour

Microbiota

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TARGET BRAIN? OR SOMETHING ELSE?

\*Latest research shows: What we see in brain is often a secondary effect of something else going on in the body

- \*30 trillion bacteria in the gut microbiome
  - Makes 90% of serotonin
  - Makes more dopamine than brain
  - Chemicals travel through nervous and immune system to and from brain
  - Communication between brain and gut – axis
- \*Target gut, brain AND axis
- \*Amare Global "Fundamentals" (Award-winning GBA Supplement System)
- \*FREE Webinar "Caring for your Two Brains" w/ Dr. Shawn Talbot

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What is the most important body part?

Are you caring for your brain?

What about your "second" brain?

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"A woman who is not caring optimally for her brain(s)...is squandering her most valuable resource."

"Care for your brain(s) more than any other body part..."

Dr. Daniel Amen

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**FEMALE MENTAL HEALTH =**

**Brain**  
+  
**Hormones**  
+  
**Life Experiences**



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## FEMALE HORMONES



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## MENSTRUAL CYCLE



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### 3 Phases

- **Follicular phase**, estrogen and testosterone rise and endorphins are released (first 2 weeks)
- **Ovulation (mid-cycle)**, endorphins and testosterone are at highest levels, then decrease in luteal phase.
- **Luteal phase**, the empty follicle secretes progesterone and estrogen. Estrogen rises again but falls a second time in last or premenstrual week.

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## THE HORMONAL ROLLER-COASTER

- **TWO drops in estrogen**
  - 1st drop sets stage for impact in brain of 2<sup>nd</sup>
  - Each decrease in estrogen leads to estrogen withdrawal state
- **Can feel like coming off a drug**
  - alters signals in nerve pathways
- **May lead to alterations in mood, due to depletion of serotonin from estrogen withdrawal**
  - (Serotonin depletion is most often associated with Depression)



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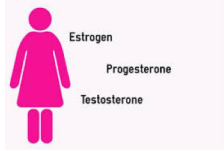
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## HORMONES & MOOD



*Estrogen* → energy, positive moods, thinking, perception, motivation, memory, appetite, sex drive, anxiety and stress response

*Progesterone* → calming, anxiety, worry, stress

*Endorphins* → appetite, thirst, sex drive, breathing rate, learning, memory, regulation of pain

*Testosterone* → limbic brain, including libido

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## UNDERSTANDING MOOD PATHWAYS

"Mood Pathways": chemical messenger systems that travel throughout and innervate the prefrontal- limbic complex

### Neurotransmitters (NT's):

- Serotonin (5-HT)
  - Implicated in MDD, Anx & Obsessive states
  - Low 5-HT=sleep problems, worry, stress/agitation, lethargy, hopelessness & PMS
  - Serotonin is made from tryptophan
- Dopamine (DA), Norepinephrine (NE), Acetylcholine (ACh)
  - All are involved in mood, anxiety, memory, movement, menstrual cycle & stress

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## HORMONES & MOOD PATHWAYS

### Estrogen:

- Promotes tryptophan availability in the brain
  - Precursor to serotonin & other neurotransmitters in brain/gut
- Maintains orderly firing rates of 5-HT, DA, NE, ACh nerve cells
  - leads to positive moods, thinking, memory, motivation, appetite, sex drive, perception, anxiety, stress response
- Strongly enhances glutamate activity
  - NT that accelerates nerve communication in the brain and improves mood stability
- Estrogen is linked to growth of nerve cells with ACh in the hippocampus, maintaining mental acuity, memory, and mood cognition
  - This is why in menopause, HRT can improve memory & mood

(Maki, P. & Dumas, J. 2009)

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### HORMONES & MOOD PATHWAYS

- When Estrogen increases, Serotonin increases
- This leads to increased mood stability (an "upper")

Fluctuations in estrogen through lifespan may disrupt balance of NT's and affect mood stability

- Genetics may impact why some women aren't affected (lower # available estrogen receptors may lead to greater chance of mood issues)



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### HORMONES & MOOD PATHWAYS

#### Progesterone:

- Works against estrogen
  - Called the "dysphoric hormone" or a "downer"
- Shifts can induce mood/anxiety changes
- Can be toxic for some patients' moods
- Low progesterone may interfere w/fertility
- Can enhance mood & relieve anxiety
- Stimulates GABA receptors (body's feel-good, calming NT's)
- Low levels associated with anxiety

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### "HORMONAL SENSITIVITY"

50% of women on birth control experience depression due to the effects of the hormones in the pill

Oral contraceptives can prompt anxiety and worsen depression in women who are vulnerable to these.

Women with bipolar typically have a worsening of sx's premenstrually and with periods

- Some become psychotic before periods

Use of hormonal contraception, especially among adolescents=> use of antidepressants and first diagnosis of depression

2016 Denmark Study, 1million + women, 15-34 (Skovland, Mørch & Kessing, 2016)

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### PMS & PMDD



- 90% experience physical/psychological changes premenstrually
- 20-40% of women diagnosed with PMS (affects 20-80% of reproductive age)
- 3-8% of women are diagnosed with PMDD (MGH Center for Women's Health 2018)
- Many women have no symptoms until 30's-40's (Mental Health America, 2010)

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### PMADS & PERIMENOPAUSE

- Women who struggle w depression:
  - more likely to go through perimenopause earlier
  - have lower levels of estrogen (Kilow et al., 2003)
- Bipolar disorder symptoms may get worse during perimenopause (Marsh et al., 2015)
- Insomnia affects up to half of women going through menopause (Soares et al., 2004)
  - Insomnia more common in women with anxiety or depression
- Perimenopause can cause a relapse of OCD or a change in symptoms (Lochner et al. 2004)
- Older moms may have both
- Sometimes, PM may begin in 30's!



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### PMS-PMAD-PERIMENOPAUSE



- Women with PMS = higher risk of PMADs
- PMADs can increase PMS symptoms
  - Highest incidence of PMS in 30's
- Perimenopause often includes mood/anxiety disorders/issues
- Perimenopause often associated with first onset of MDD/anxiety, due to decrease in estrogen

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### HORMONES AND WMH ACROSS LIFESPAN

- Depression in women:
  - Lifetime 21% women vs. 13% men
  - Rate rises rapidly after puberty in girls
    - Boys have higher rates in childhood
  - Increased prevalence during reproductive years
  - Increased risk of recurrence of depression in women 45-54 years old (perimenopause)
  - Rates decrease after menopause



What does this tell us??

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### THE "P" LINK

All share common risk factors and etiology

- PMS
- PMDD
- PPD
- PPA
- PPOCD
- PP-PTSD
- PPP
- Perimenopause (PM)



(Rapkin, et al. 2002)

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### THE SURRENDERED MOM



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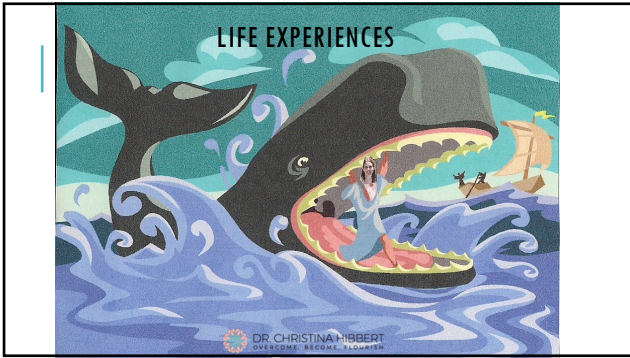
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### LIFE STRESS & BRAIN

- \*In addition to hormones, life stress has a significant impact on the brain
- \*Can alter chemical pathways in the brain
- \*Continued life stress can lead to easier triggering of biochemical disruption that leads to depression and other disorders

(APA, 2009)

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**HPA AXIS**

Hypothalamus-pituitary-adrenal circuit:

- Activated in times of crisis or stress
  - "Fight, Flight, Freeze" system
- After threat has left, helps brain return to "normal" functioning
- Estrogen & Progesterone appear to delay ability to switch off stress response (APA, 2009)
  - Thus, females may stay longer in the stress state
- During next time of trauma, the brain becomes disturbed more easily (HPA circuit activated)
- Eventually, even routine hormonal changes can activate HPA

(Sichel & Driscoll)

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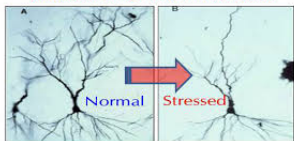
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## BRAIN STRAIN

### Stress Shrinks Brain Networks



- caregiver stress, life stressors, trauma, anxiety, worry, distress

- may manifest in symptoms like headache, fatigue, feeling overwhelmed, depression

- leads to "allostatic loading" of the brain.

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## "ALLOSTATIC LOADING"

### Stress Response:



#### Allostasis

Some stress can be energizing and toning to the system. Body systems adjust well to stressors without over taxing resources.

### Stress Reaction:



#### Allostatic Load

Body systems achieve a kind of balance, but everything is working too hard and we begin to slowly break down.

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## LIFE STRESS & BRAIN

"Life has a biological impact on your brain!"

Stress in life=

*"You have a chemically-altered brain in adult years and are at risk for mood and anxiety problems throughout your reproductive life."*

Sichel & Driscoll, p. 55

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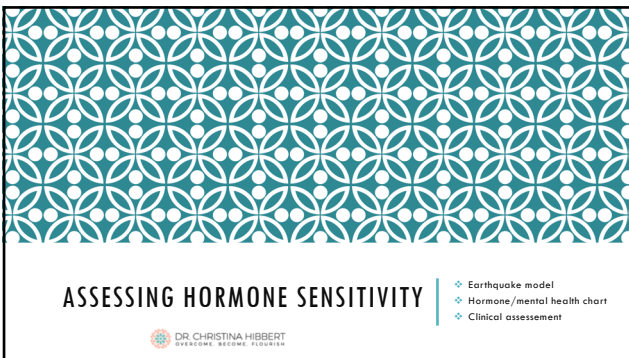
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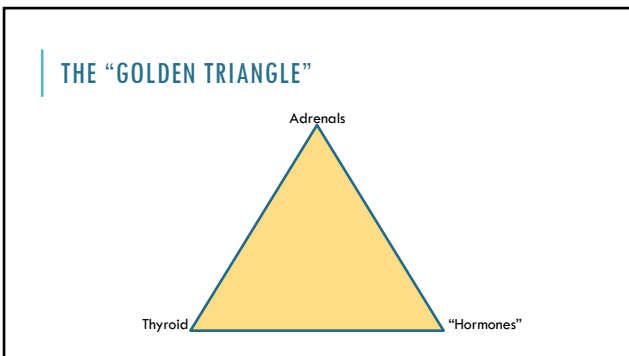
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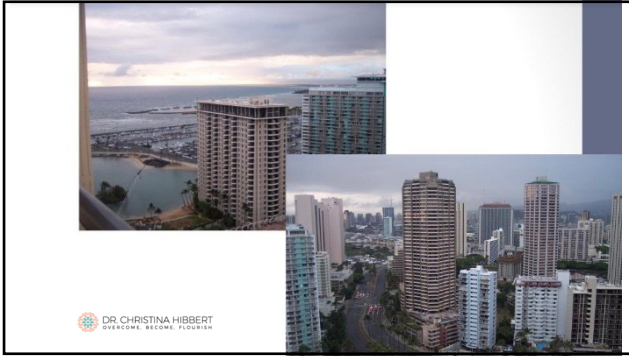
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Earthquake Assessment Chart

Outward Appearance/ Functioning	
Brain Chemistry	
Life Stress/ Experiences	
Hormonal Events	
Age	

From 8 Keys to Mental Health Through Exercise © Christina G. Hibbert, Psy.D.  
<http://www.exercise4mentalhealth.com>

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**CARING FOR YOUR "2 BRAINS": NURSE**

- Nourishment & Nutrition
- Understanding
- Rest & Relaxation
- Spirituality
- Exercise



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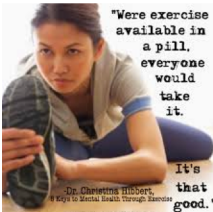
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**EXERCISE**



**"Were exercise available in a pill, everyone would take it."**

**It's that good."**

Dr. Christina Hibbert  
MFT in Santa Ana, Orange County, CA  
www.DrChristinaHibbert.com

- Incredible Benefits to Physical, Mental, Emotional, Social, Spiritual Health
- Can prevent & "treat" mental illnesses (depression, anxiety, OCD, schizo)
- Improves sleep, energy, motivation, focus, creativity, insight...
- FITT Principle
  - Frequency
  - Intensity
  - Type
  - Time

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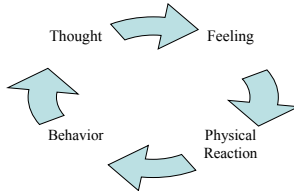
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**COGNITIVE-BEHAVIORAL STRATEGIES**



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    graph TD
      Thought --> Feeling
      Feeling --> Physical Reaction
      Physical Reaction --> Behavior
      Behavior --> Thought
  
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### HRT IN PMADS/ PERIMENOPAUSE?

- HRT is a personal choice
- Research confirms HRT can successfully alleviate depressive symptoms in perimenopause (Wharton et al, 2012)
- Can significantly affect mood symptoms
- Benefits:
  - Significantly help mood symptoms
  - Helps fight osteoporosis, Alzheimer's
- Cautions:
  - High levels of pure estrogen linked to breast/ endometrial cancers
  - HRT cannot "cure" clinical depression
- Method of delivery can play a role, as well as artificial vs. bioidentical
- Must be monitored closely by knowledgeable professional



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### HRT PROGESTERONE



- Natural progesterone:
- Often recommended for PMS symptoms
  - Some use for PPD
  - Progesterone, without estrogen can be a CNS relaxant
  - Must be administered before mood changes in PMS
  - Controversial: In many women it causes a worsening of sx's



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### IT'S ALL ABOUT "BALANCE"

"Balance' is really about choices."



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### Text "PPD" to 444999

- Earthquake Assessment Chart
- Hormone/Mood Tracker Calendar
- FREE Webinar on "Caring for your Two Brains"
- July 31: FREE Webinar
  - Intro to Women's Emotions: What we were never taught about our brain, hormones, and mental health
- Mastery Mentoring (MMH Providers)
- CE Courses, Nov 2019, Scottsdale, AZ
  - Women's Emotional Health Across the Lifespan (6.5 CE's)
  - Maternal Mental Health: Advanced Clinical Skills Workshop (6.5 CE's)
- Mastery Of Motherhood (M.O.M.) Live-2-Day Event (+CE's) March 2020, Scottsdale, AZ
- M.O.M. MMH Provider Certification Coming 2020!



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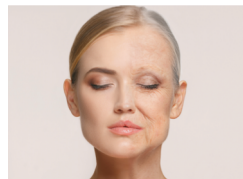
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## ESTROGEN & REPRODUCTIVE CYCLE EVENTS

"Women are at a higher risk than men to develop mood disorders and depression.

The increased risk is associated with fluctuating estrogen levels that occur during reproductive cycle events, particularly during the menopausal transition, a time characterized by drastic fluctuations in estrogen levels and increases in new onset and recurrent depression."



(Wharton et al. 2012)



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