

Child Malnutrition

in the Philippines

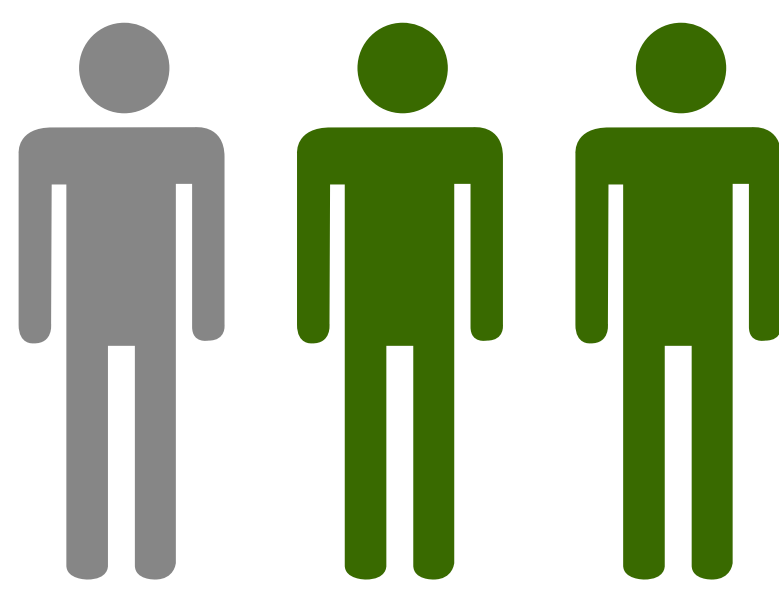
Malnutrition includes several forms:

- Undernutrition (wasting, stunting, underweight)
- Inadequate vitamins or minerals
- Overweight and obesity

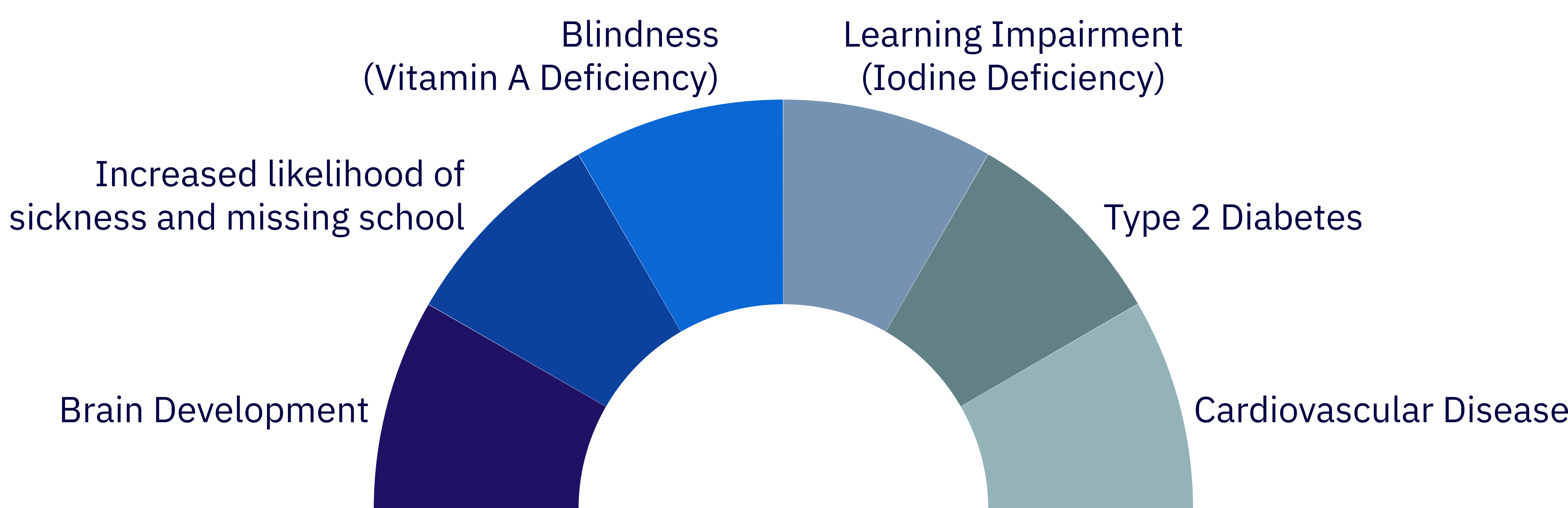
95

children in the Philippines die from malnutrition **everyday**

In 2019, 1 in 3 children under the age of five experienced stunting with being small for their age



Experiencing malnutrition during childhood can have negative lifelong effects

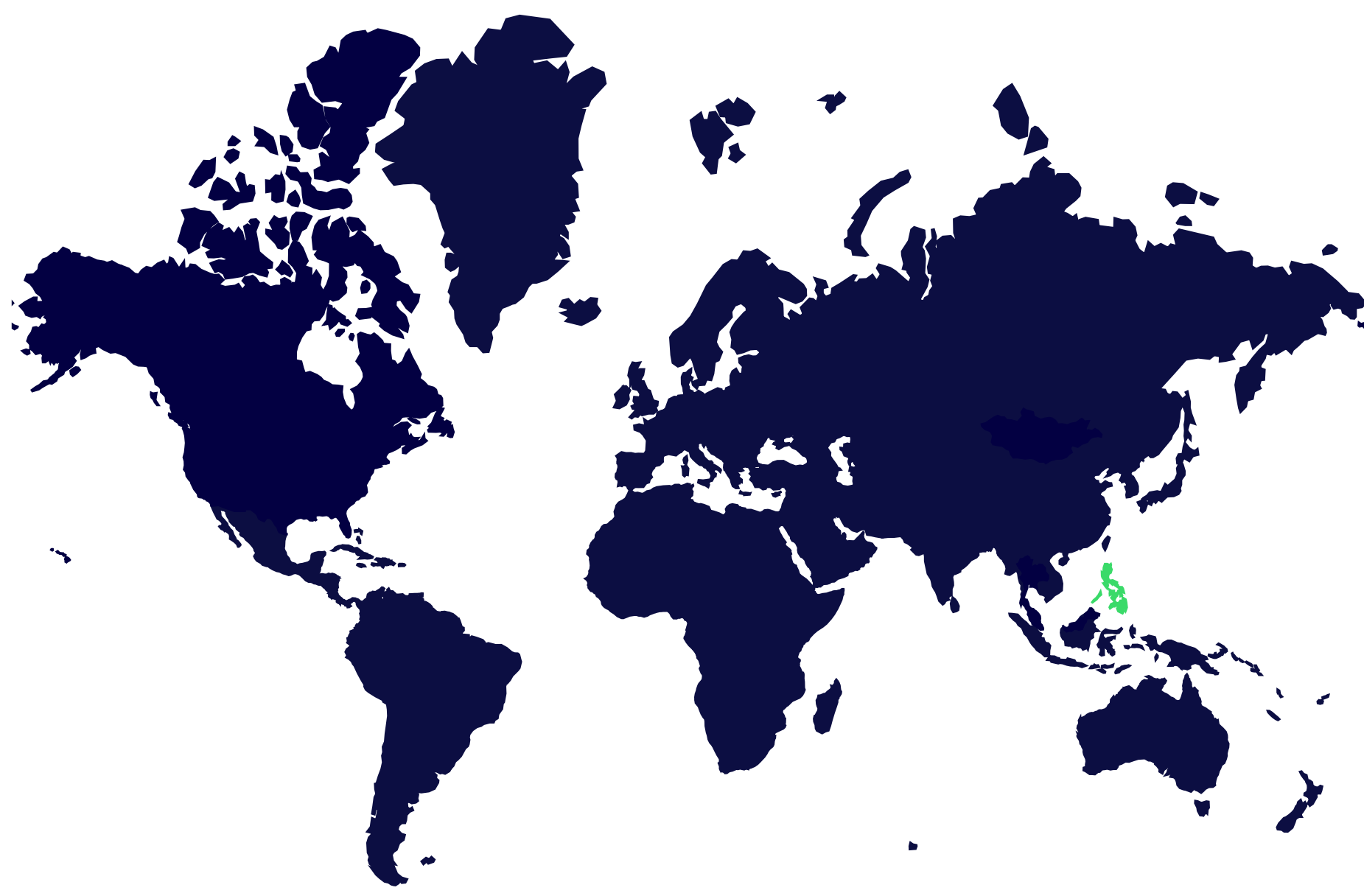


Malnutrition can be caused by the following:



\$4.4 billion USD

was the estimated burden of childhood undernutrition on the Philippine economy in 2015



5th

highest prevalence of stunting in the East Asia and Pacific Region

Top 10

in the world with the highest number of stunted children

The World Bank recommends the following policy and program actions to decrease childhood malnutrition in the Philippines:

- Strengthen the National Nutrition Council
- Prioritize nutrition in municipal and legislative agendas
- Secure domestic funding for nutrition-related programs
- Implement well-proven direct nutrition interventions through formulation of a comprehensive, social behavior change communications strategy targeted at policy makers, health workers, and households
- Maternal and child health programs to address nutrition determinants
- Implement nutrition sensitive programs aimed at improving dietary quality and access to clean water and sanitation
- Ensure availability of subnational, ethnicity-disaggregated nutrition and nutrition-related data for targeted policy advice and interventions

Sources

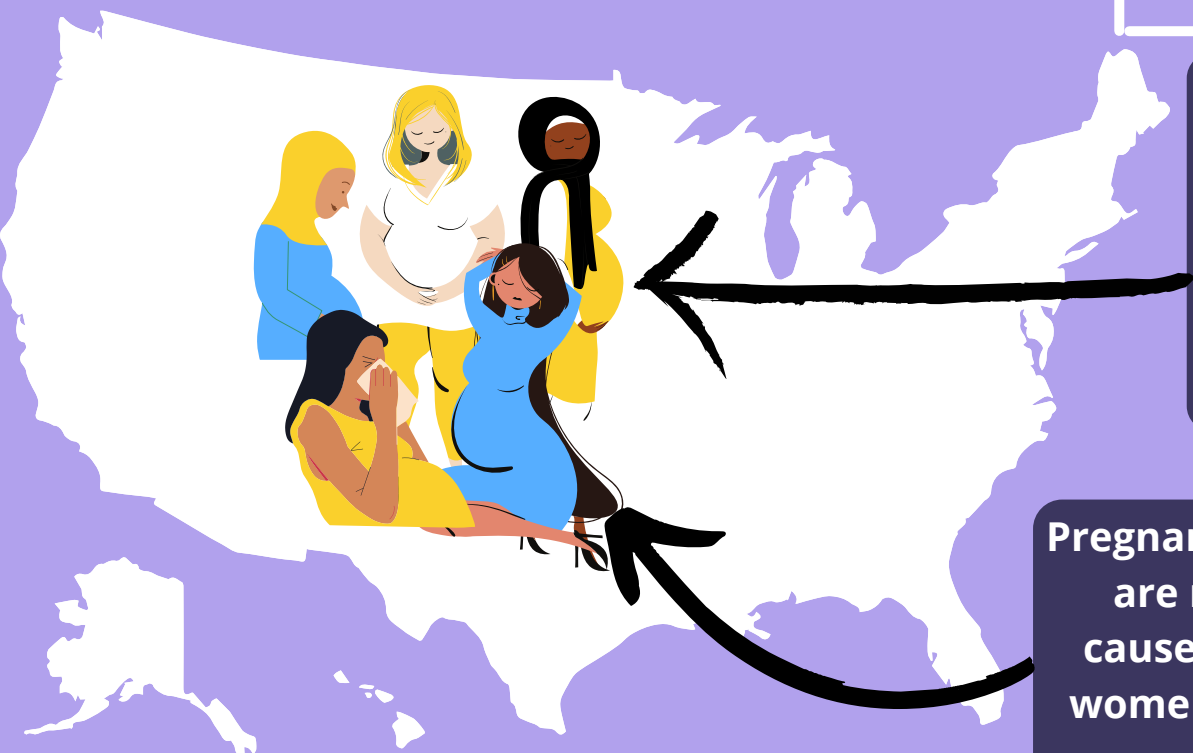
UNICEF. (n.d.). The changing face of malnutrition. Retrieved October 18, 2021, from <https://features.unicef.org/state-of-the-worlds-children-2019-nutrition/#group-Cost-of-malnutrition-3yrhpp5QjQ>.

UNICEF Philippines. (n.d.). *Child survival*. Retrieved October 18, 2021, from <https://www.unicef.org/philippines/child-survival>.

World Bank. (2021, June 15). *[key findings] undernutrition in the Philippines: Scale, scope, and opportunities for nutrition policy and programming*. World Bank. Retrieved October 18, 2021, from <https://www.worldbank.org/en/country/philippines/publication/-key-findings-undernutrition-in-the-philippines>.

World Health Organization. (2021, June 9). *Fact sheets - malnutrition*. World Health Organization. Retrieved October 18, 2021, from <https://www.who.int/news-room/fact-sheets/detail/malnutrition>.

Disparities in Maternal Mortality in U.S.



Black women are **3 to 4 times** as likely to die from pregnancy-related complications than White women.

Pregnancy-related deaths are ranked the **6th** cause of death among women aged 20 to 34 in the U.S.



Maternal Mortality is increasing in the U.S. : (Per 100,000 live births)

14.5

Deaths in 2000

17.3

Deaths in 2017

Causes of pregnancy-related deaths in the U.S. in 2014-2017

Other Cardiovascular Conditions	15.5%
Infections or Sepsis	12.7%
Cardiomyopathy	11.5%
Hemorrhage	10.7%
Thrombotic pulmonary or other embolism	9.6%

Maternal Mortality by Race and Ethnicity

Black Women
48.2
Deaths

Hispanic Women
30.2
Deaths

White Women
28.4
Deaths

Social Determinants of Health

LEADING CAUSES OF DEATH

Black Women



Preeclampsia, Eclampsia, and Embolism

White and Hispanic Women



Mental Health Conditions

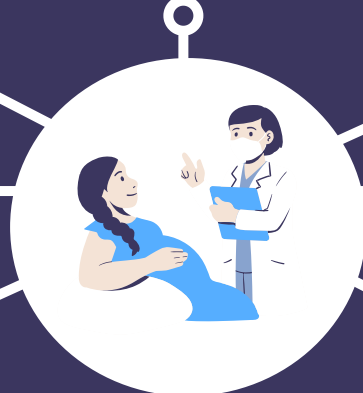
Potential Causes of Health Disparities

Quality of care

Education Levels

Individual and Behavior Factors

Poverty



Availability of Resources

Lack of Access to Healthcare

Environmental Factors

Ways to Reduce Disparities



Citations

<https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7377107/>
<https://www.mhtf.org/topics/maternal-health-in-the-united-states/>

ALL YOU NEED TO KNOW ABOUT THE HUMAN PAPILLOMAVIRUS (HPV)

What is HPV? How can I prevent it? Where can I get more information?

WHAT DO I NEED TO KNOW

How common?

HPV, otherwise known as human papillomavirus, is the most common sexually transmitted disease, with almost 90% estimated to get it at some point in their lifetime. (1)

What are the types?

There are many types of HPV (over 100), 14 of which can cause cancer, and some noncancerous HPV strains can lead to genital warts. However, HPV is mostly asymptomatic, and can go away on its own.

What can it lead to?

HPV that progresses can lead to cancers of the: Vagina, vulva, cervix, anus, penis and back of throat.

WHAT IT ISN'T

There is stigma associated with all sexually transmitted infections. It's important to note that contracting HPV is not something you need to be ashamed of. Some may never know they have it, and it usually goes away on its own. It is important to always discuss safe sexual practices with your sexual partners.

• HOW CAN YOU PREVENT HPV? •

Get vaccinated!



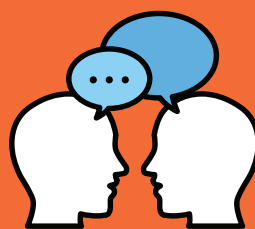
It can protect you from:

- Over 90% of cancers and abnormal cells caused by HPV (5).
- The 2 types that cause 90% of genital warts cases (2)
- The other 5 types that can lead to 6 other cancers (2)

Parents: Talk to your doctor about your child's HPV vaccine. Kids should receive their first dose by 11 or 12 years of age.

Adults: Check if you've been vaccinated, you can still be vaccinated until 45 years of age. Talk to your doctors about HPV screening and prevention

Talk about it!



Talk with your sexual partner(s) about:

- Condom use
- Previous sexual partners
- Previous STI exams if necessary
- Getting tested regularly

Parents: Use some of these tips to start the conversation around HPV and safe sexual practices..

Adults: Practice these conversations with your sexual partners. It can feel awkward, but here are some tips to start.

WHY IS THIS IMPORTANT?

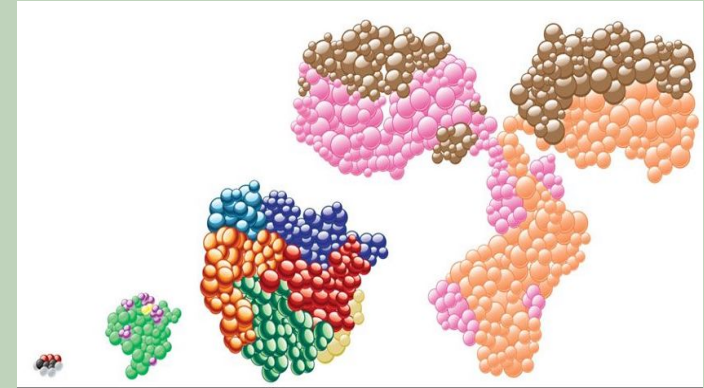
HPV can be prevented through safe sexual practices, healthy communication, and the HPV vaccine.

References

- (1) Hirth, J. (2019). Disparities in HPV vaccination rates and HPV prevalence in the United States: a review of the literature. Human Vaccines & Immunotherapeutics. Retrieved from <https://dx.doi.org/10.1080%2F21645515.2018.1512453>.
- (2) Planned Parenthood: HPV: Should I get the Vaccine? <https://www.plannedparenthood.org/learn/stds-hiv-safer-sex/hpv/should-i-get-hpv-vaccine>
- (3) Planned Parenthood. How do I talk to my Partner About Safer Sex? <https://www.plannedparenthood.org/learn/stds-hiv-safer-sex/safer-sex/how-do-i-talk-my-partner-about-safer-sex>
- (4) MD Anderson. HPV Vaccine: How to talk to your kids. Retrieved from <https://www.mdanderson.org/publications/focused-on-health/HPV-vaccine-talk-to-your-kids.h10-1591413.html>
- (5) Centers for Disease Control and Prevention. Cancers Caused by HPV. <https://www.cdc.gov/hpv/parents/cancer.html>

Biologic Therapies for IBD Patients

Irritable Bowel Disease (IBD) is composed of Crohn’s Disease and Ulcerative Colitis (*Inflammatory Bowel Disease*, 2018). In many cases, patients can best advocate for themselves based on symptoms, but in some cases biologic therapy is a needed clinical intervention to obtain or maintain remission (*Fact Sheet*, 2018). This infographic explains biologic therapies and indications for when to clinically recommend, and prescribe, a biologic therapy for an IBD patient.



Aspirin	Insulin	Erythropoietin	Monoclonal antibody (IgG1)
(180)	(5808)	(30,400)	(150,000)

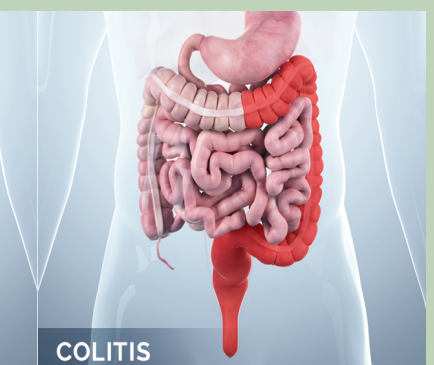

<https://weekly.biotechprimer.com/pills-peptides-proteins/>

- ## Biologic Therapies
- Man-made antibodies that are created in a lab.
 - Known specifically as anti-tumor necrosis factor (anti-TNF) agents, which block proteins in the body that increase inflammation (Fact Sheet, 2018).
 - Much larger molecules than most conventional therapies. This helps the biologic to bind to the site of inflammation.
 - Used for many chronic conditions such as rheumatoid arthritis, multiple sclerosis, psoriasis, migraines, ankylosing spondylosis, and certain cancers (Argollo et al., 2020).



Irritable Bowel Disease

- Irritable Bowel Disease (IBD) is characterized as chronic inflammation of the gastrointestinal (GI) tract (*Inflammatory Bowel Disease*, 2018).



CROHN'S **COLITIS**

<https://www.cdc.gov/ibd/what-is-IBD.htm>

- ### Crohn's Disease:

 - Can be seen in any part of the GI tract (mouth to anus)
 - Typically seen in the small intestines before the colon
- ### Ulcerative Colitis:

 - Occurs in the large intestine and colon
 - Damaged areas of the GI tract start at the rectum and spread to the colon

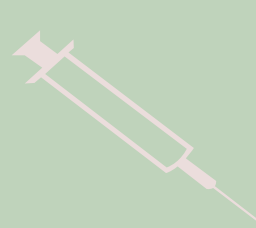

IBD Specific Biologics

Infusion:

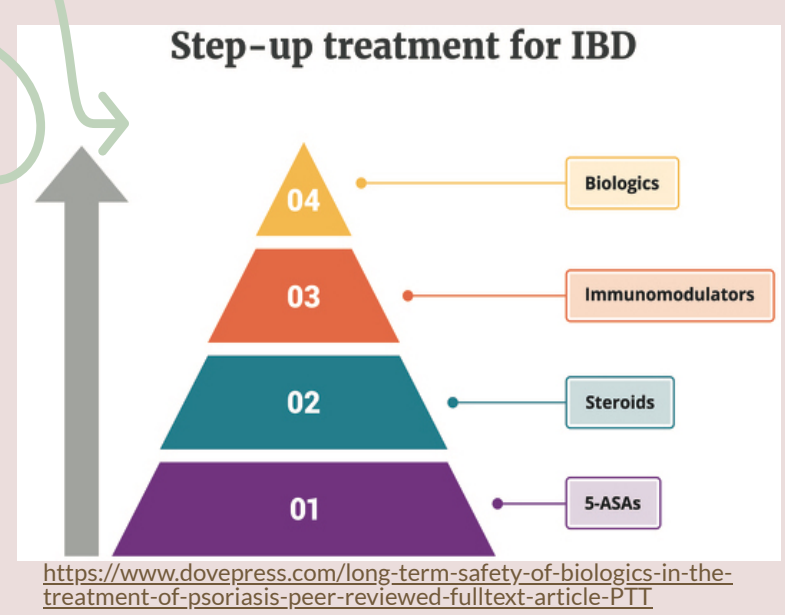
- infliximab (Remicade)
- vedolizumab (Entyvio)
- ustekinumab (Stelara)
- natalizumab (Tysabri)

Subcutaneous Injection:

- adalimumab (Humira)
- ustekinumab (Stelara)
- certolizumab (Cimzia)
- golimumab (Simponi)



- ## Course of Therapy
- Biologics are not indicated as a first-line-of-defense therapy for IBD (Chebli, 2014).
 - Patients must have moderate to severe IBD and have tried, and "failed," other therapies using the "step-up treatment."
 - Patients are considered to be failing a drug if they're unable to go into remission (based on lab values and colonoscopy testing).



- ## Considerations
- As a provider, you must weigh the risks vs benefits for a patient taking a biologic (*Factsheet*, 2018).
 - Biologic therapies affect the immune system and lead to patients being immunocompromised.
 - Biologics carry the risk to increase incidence of lymphoma (a type of cancer).
 - In rare cases, biologics have been shown to increase liver problems, arthritis symptoms, lupus-like reactions, and skin rashes.

- ## Check List for Prescribing
- Tuberculosis screening (patients must be TB negative using QuantiFERON Gold or x-ray)
 - Confirm patient is hepatitis B negative (using HepB surface antigen)
 - Confirm patient doesn’t have any contraindicated drugs or conditions
 - Determine start of care date (patients can't start a biologic within two weeks of a live vaccination or antibiotic treatment)

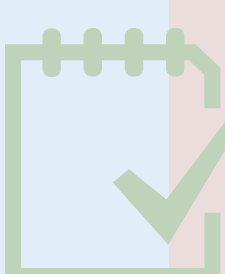
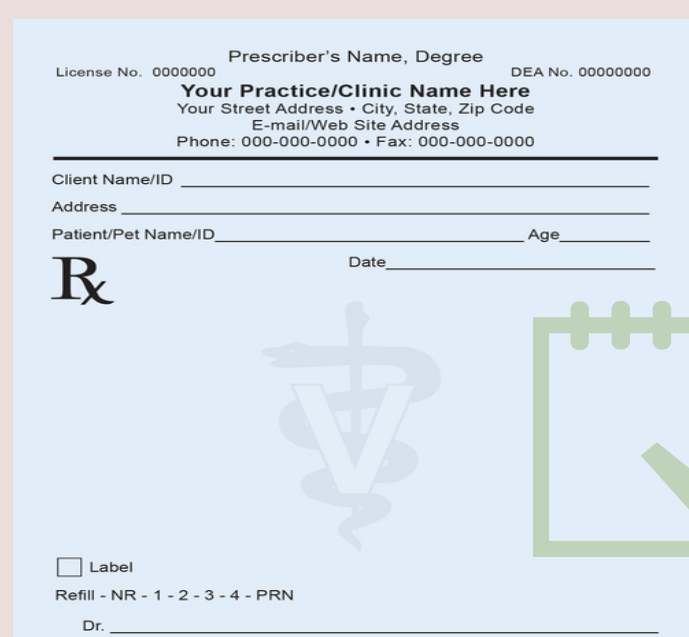
Sources:

Centers for Disease Control and Prevention. (2018, March 22). *Inflammatory bowel disease (IBD)*. Centers for Disease Control and Prevention (CDC). Retrieved October 13, 2021, from <https://www.cdc.gov/ibd/what-is-IBD.htm>.

Crohn's & Colitis foundation. (2018, October). *Fact Sheet*. Biologics. Retrieved October 13, 2021, from https://online.crohnscolitisfoundation.org/site/SPageNavigator/take_steps_Decade_of_Difference.html?wmenu=sec_abt.

Argollo, M., Kotze, P. G., Kakkadasam, P., & D'Haens, G. (2020, September 2). *Optimizing biologic therapy in IBD: How essential is therapeutic drug monitoring?* Nature News. Retrieved October 13, 2021, from <https://www.nature.com/articles/s41575-020-0352-2>.

Chebli, J. M. F., Gaburri, P. D., Chebli, L. A., da Rocha Ribeiro, T. C., Pinto, A. L. T., Ambrogini Júnior, O., & Damião, A. O. M. C. (2014, March 26). *A guide to prepare patients with inflammatory bowel diseases for anti-TNF-α therapy*. Medical science monitor : international medical journal of experimental and clinical research. Retrieved October 16, 2021, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3972052/>.



INTIMATE PARTNER VIOLENCE IN SUB-SAHARAN AFRICA



Intimate partner violence (IPV) is any behavior by current or former intimate partners that results in physical, sexual and/or psychological harm, including emotional abuse and controlling behaviors. IPV is a violation of women's human rights that is more prevalent in low and lower-middle income countries.

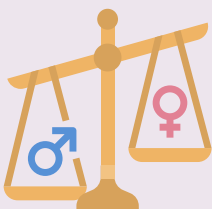
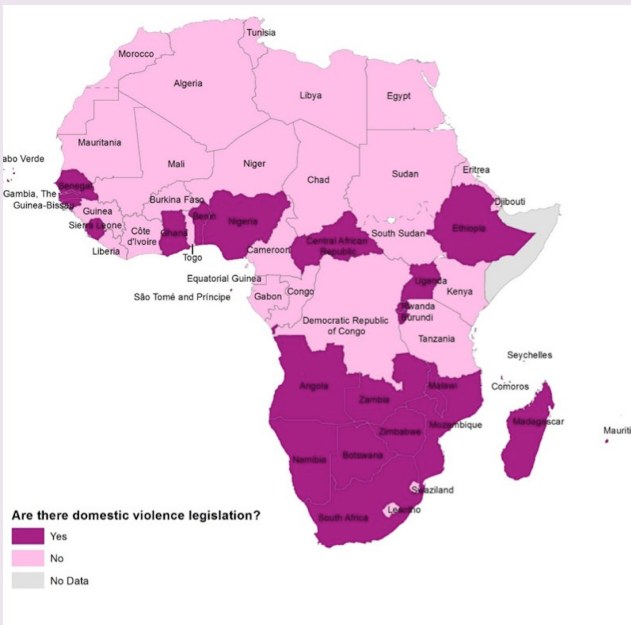
1 IN 3 WOMEN EXPERIENCE IPV GLOBALLY

Sub-Saharan Arica (SSA) has the highest prevalence rate of **37%**, with regions reaching as high as **90%** in Zambia, and **71%** in Ethiopia. Globally, high income regions have an IPV prevalence rate of **23%**

RISK FACTORS

- history of child abuse
- alcohol abuse
- low education
- poverty and economic stress, specifically when the women contributes a greater economic proportion to the family
- employment inequalities
- lack of women's civil rights
- gender-inequitable social norms (especially those that link notions of manhood to dominance and aggression)
- weak legal sanctions against IPV

50% OF AFRICA LACKS LEGISLATION AGAINST DOMESTIC VIOLENCE



IPV ROOTED IN GENDER INEQUALITY

In SSA about 50 % of women and 30% of men report violence to be acceptable under some circumstances.

HEALTH CONSEQUENCES

- injuries from direct physical harm such as bruises, fractures, and head injuries
- stress-related conditions such as chronic pain syndromes, and GI disorders
- poor sexual and reproductive health; unintended pregnancy, unsafe abortion,
- sexually transmitted infections such as HIV
- pregnancy complications such as low birth weight, premature labor and birth
- mental health problems such as depression, anxiety, and thoughts of suicide



SOCIETAL CONSEQUENCES

- higher rates of infant and child mortality and morbidity; result of malnutrition and lower immunization rates
- employment loss and social isolation
- 40% of all female homicides in SSA are committed by an intimate partner

Around **51%** of African women experience beatings from their husbands. This happens when women go out without permission, neglect the children, argue back, refuse to have sex or burn the food.

ACTIONS TO REDUCE RATES OF IPV

1. Legal reforms

- enhance women's civil liberties through legal reformations that promote gender equality
- ensure equal employment
- strengthen law enforcement and social support options for women experiencing IPV



2. Education reform

- incorporate interventions to challenge discriminatory beliefs and include comprehensive sexual education courses
- invest in education for young girls and women

3. Healthcare reform



- expand access to healthcare services in rural areas
- incorporate mental health training into healthcare workers patient visits
- educate patients on domestic violence and respond empathetically to survivor's needs
- strengthen research and data collection to better assess interventions

4. Community Engagement and education of IPV

- engage men and boys to participate in violence prevention initiatives
- raise awareness of IPV in communities through social media and other advertising outlets

REFERENCES

- Ahinkorah, B. O., Dickson, K. S., & Seidu, A.-A. (2018). Women decision-making capacity and intimate partner violence among women in sub-saharan africa. *Archives of Public Health*, 76(1). <https://doi.org/10.1186/s13690-018-0253-9>
- Behrman, J., & Frye, M. (2021). Attitudes toward intimate partner violence in dyadic perspective: Evidence from Sub-Saharan africa. *Demography*, 58(3), 1143–1170. <https://doi.org/10.1215/00703370-9115955>
- McCloskey, L. A., Boonzaier, F., Steinbrenner, S. Y., & Hunter, T. (2016). Determinants of intimate partner violence in Sub-Saharan africa: A review of Prevention and Intervention Programs. *Partner Abuse*, 7(3), 277–315. <https://doi.org/10.1891/1946-6560.7.3.277>
- Muluneh, M. D., Stulz, V., Francis, L., & Agho, K. (2020). Gender Based Violence Against Women in sub-saharan africa: A systematic review and meta-analysis of cross-sectional studies. *International Journal of Environmental Research and Public Health*, 17(3). <https://doi.org/10.3390/ijerph17030903>
- Vyas, S., & Jansen, H. A. (2018). Unequal power relations and partner Violence Against Women in Tanzania: A cross-sectional analysis. *BMC Women's Health*, 18(1). <https://doi.org/10.1186/s12905-018-0675-0>
- World Health Organization. (2021, March 9). Violence against women. World Health Organization. Retrieved October 20, 2021, from <https://www.who.int/news-room/fact-sheets/detail/violence-against-women>.

The Benefits of Mindfulness in Treating Depression // Among College Students

By: Shannon Donahue; Drexel University



About 30% of college students suffer from depression.

Emotional Signs & Symptoms:

- Anxiety, Restlessness, Irritability
- Slipping on grades & assignments
- Engaging in risky behaviors, i.e. binge drinking, sex
- Isolation & lack of interest in activities
- Thoughts of Suicide

The first result of extreme stress in college students is sleeping problems.

Physical Symptoms Include:

- Insomnia or oversleeping
- Weight gain or loss

- Difficulty making decisions or concentrating
- Muscle aches and pains
- Extreme fatigue



Up to 44% of college students reported having symptoms of depression.

How can Mindfulness Help?

- ✓ Improved physical and mental health
- ✓ Increase in memory and concentration
- ✓ Restores emotional balance
- ✓ Focusing on the present moment
- ✓ Increase in patience and tolerance



3 Mindfulness Concepts -

Focus on the Present Moment:

When thoughts wander to the past or the future, you bring awareness back to the present moment and all that you are experiencing right now, this allows one to remain open to the present moment and allow things to unfold (Greenberg, 2012).

Non-judgment: Thoughts and emotions are not labeled as good or bad nor are they categorized; all feelings have purpose. Acceptance of whatever arises from thoughts, non-judgment to self and all (Greenberg, 2012).

Compassion toward self and others: Open heart and active listening when dealing with others; you deal kindly, patiently, and gently with yourself and others. You care for others because you can connect and empathize with their experiences (Greenberg, 2012).

3 Mindfulness Practices

Focus on the Breath "Box Breathing Exercise"

1. Inhale thru the nose for a count of 4
2. Hold the breath in for count of 4
3. Exhale the breath for count of 4
4. Hold the breath of for a count of 4; *repeat this wave of breath*

Body Scan

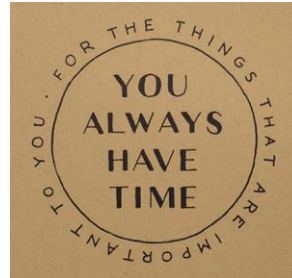
- ❖ Mindfully bringing all awareness to various parts of the body
- ❖ Moving awareness from the crown of the head to the soles of the feet
- ❖ Observing the chest rise and fall with each breath

Metta Bhavana (Loving Kindness) Meditation

- ❖ Cultivates a softening of the heart through the extension of well wishes and love to oneself and others
- ❖ Awakens compassion
- ❖ Deepens connection, love
- ❖ Heals isolation, anger



Mindfulness Practice Barriers / Solutions



Time, too busy!

Block time in small chunks throughout the day to incorporate mindfulness

Practice gratitude

Designate manageable times upon waking and sleeping for intention setting



Guilt, not completing a task that could have been accomplished during that time:

There's an old saying that "you cannot pour from an empty cup" and that is so true in this case as well! We must take time for self-care in order to re-charge.



- ✓ Remove distractions
- ✓ Sit in nature
- ✓ Silence phone/tv

SUICIDE PREVENTION!

If you or someone you know is at immediate risk of self-harm, call 911. Stay with person until help arrives. Our school mental health crisis line is available 24-7-365.

Speak to a Therapist for Stress Management



Stress can emerge at any moment, affecting your life at work or home. BetterHelp professionals can help you identify and conquer triggers.



Online therapy unlike any other, Online-Therapy.com is a complete toolbox of support, when you need it, on your schedule.



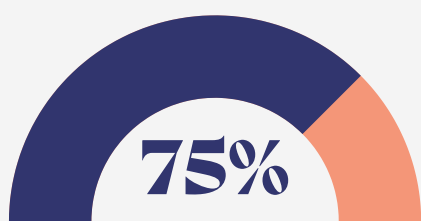
Get affordable, discreet, and professional counseling for your teenager.

LET'S TALK ABOUT Postpartum Depression

Postpartum depression (PPD) is not your fault. It's a medical condition that needs treatment to get better.

PPD AFFECTS 1 IN 7 WOMEN

PPD is a kind of perinatal depression that happens in the first year of giving birth. It is the most common complication for women who have just had a baby.



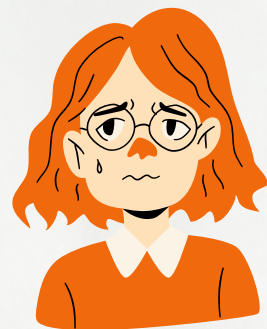
70% TO 80%

of women in the US will experience, at minimum, the "baby blues" which are feelings of sadness women may have after having a baby. It is less serious than PPD.



Changes in your feelings:

- Feeling depressed most of the day every day
- Feeling shame, guilt or like a failure
- Feeling panicked or scared
- Having severe mood swings



Changes in your everyday life:

- Little interest in things you normally like to do
- Feeling tired all the time
- Eating more or less
- Gaining or losing weight
- Trouble sleeping or concentrating

Changes in how you think about yourself or your baby:

- Having trouble bonding with your baby
- Thinking about hurting yourself or your baby
- Thinking about suicide



ACROSS THE WORLD

Postpartum depression affects tens if not hundred of millions of women annually if all countries are accounted for.

Once study found that postpartum depression rates in Asian countries could be at 65% or more among new mothers.



Statistics on Postpartum Depression – Postpartum Depression Resources. (2021, June 03). Retrieved from <https://www.postpartumdepression.org/resources/statistics/>

References

Postpartum depression. (n.d.). Retrieved October 20, 2021, from <https://www.marchofdimes.org/pregnancy/postpartum-depression.aspx>

I THINK I MIGHT HAVE PPD...

Now what?

If you think you may have postpartum depression, see your health care provider right away. This could include your provider for prenatal care, primary care, mental health, or baby's health care.

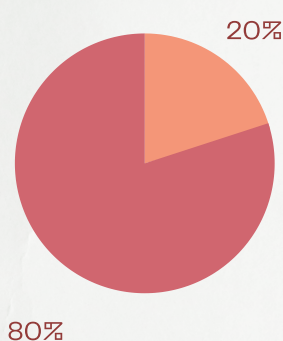
CBT

Your healthcare provider may recommend cognitive behavioral therapy (CBT). This type of therapy helps you manage negative thoughts by changing the way you think and act.



IPT

Your healthcare provider may also suggest interpersonal therapy, which helps you identify and deal with conditions and problems in your personal life, like relationships, situations and medical conditions.



The overall success rate for treating postpartum depression is 80%.



Medications can also be offered.

Your provider may prescribe antidepressants, which are medicines used to treat many kinds of depression, including PPD.

What can you do to help you feel better?

Stay healthy and fit, ask for and accept help, and reduce your stress.

FOR HELP:

Mothertobaby.org

National Suicide Prevention Lifeline, 800-273-TALK

Postpartum Support International, 800-944-4PPD

National Alliance on Mental Illness, 800-950-NAMI

As with all forms of mental health conditions, early recognition and treatment of postpartum depression can lead to better symptom management and faster recovery rates.



References Statistics on Postpartum Depression – Postpartum Depression Resources. (2021, June 03). Retrieved from <https://www.postpartumdepression.org/resources/statistics/>

Postpartum depression. (n.d.). Retrieved October 20, 2021, from <https://www.marchofdimess.org/pregnancy/postpartum-depression.aspx>

Forced Migration

the journey of a refugee

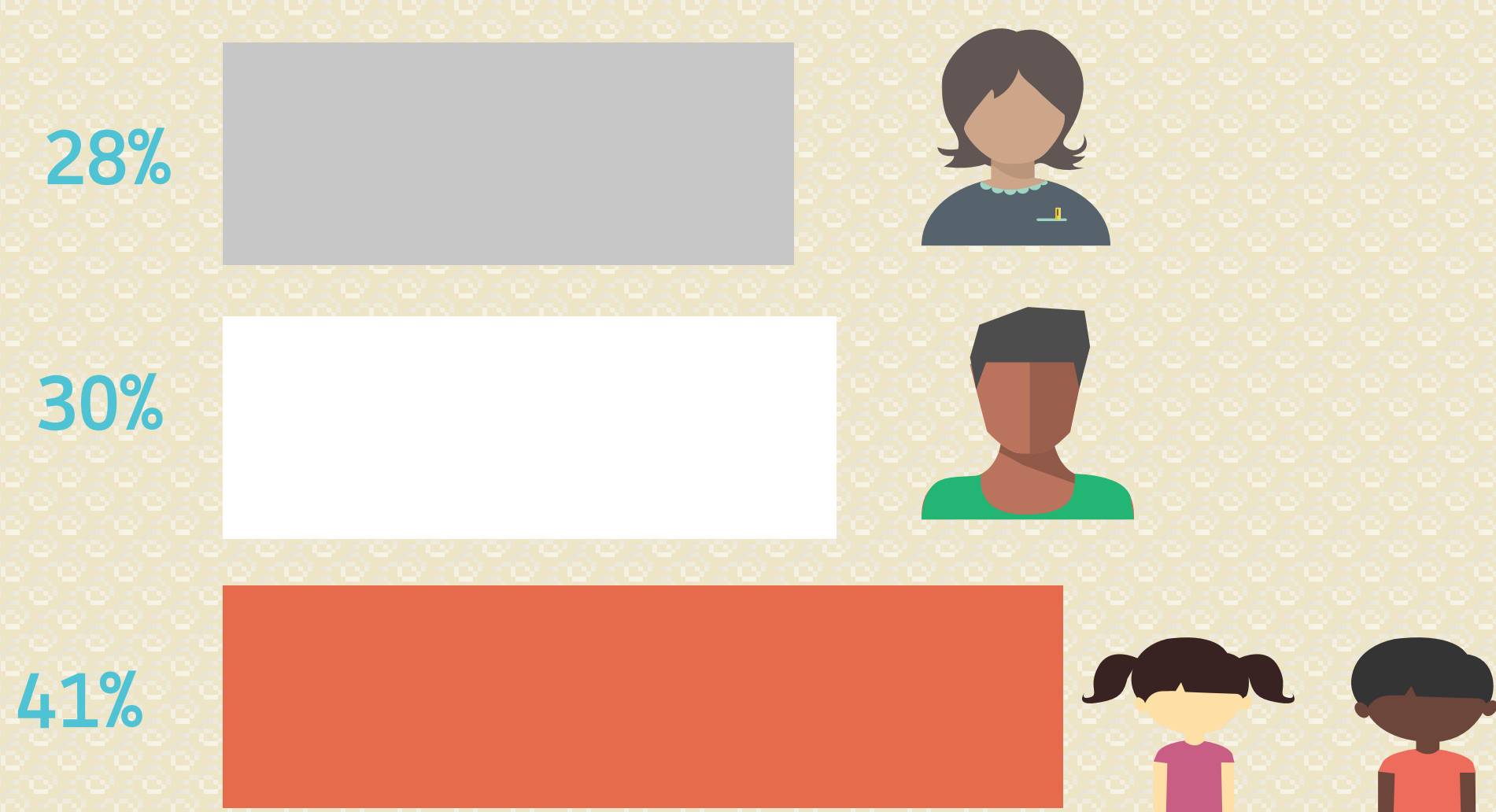
refugee :

a person who has been forced to leave their country in order to escape war, persecution, or natural disaster



Displacement refers to any movement of an object from its original position to a new position. A **displaced person** is someone who was forced to flee their home country in order to survive.

How Many People Globally Experience Displacement?



In 2020, the number of people fleeing wars, violence, persecution, and human rights violations, rose to nearly **82.4 million**.

meaning **1 in every 95 people** globally have fled their home country.

an estimated 1 million children were believed to be born in displacement from 2018-2020

Specific reasons for fleeing?

- **Syria** : civil war
- **Venezuela**: economic, social, and political turmoil
- **Afghanistan**: armed conflict
- **South Sudan**: violence, especially towards women and children
- **Myanmar**: Rohingya genocide

40 million refugees are considered to be **internally displaced**, in other words, they are forced to leave their home but remain within the borders of their country of origin

For those who are displaced internationally, it is often easiest to escape to a neighboring nation

more than half come from

6.7 million from Syria



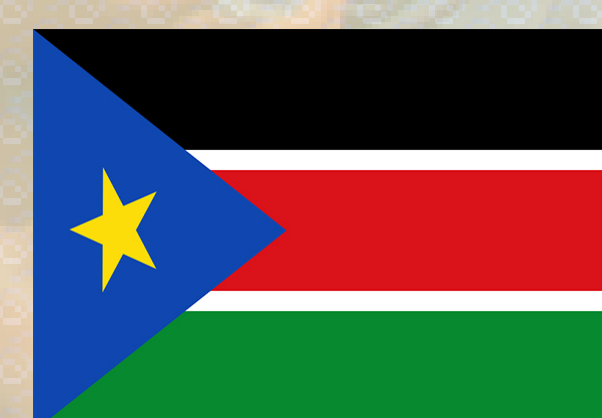
4 million from Venezuela



2.6 million from Afghanistan



2.2 million from South Sudan



1.1 million from Myanmar



background photo credit: Olivia Headon, 2018 IOM

what options do refugees have after escape?

1 Admission to another country

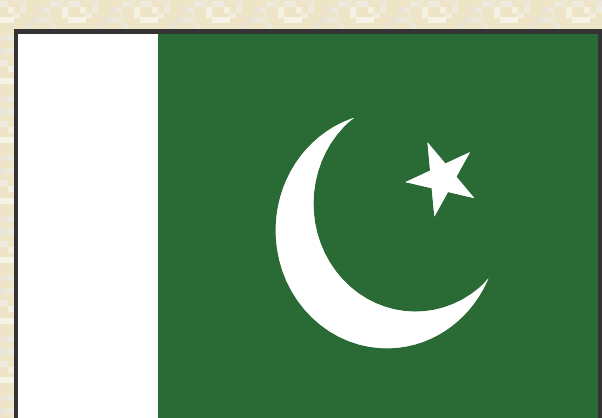
5 Countries were Responsible for Hosting 39% of Internationally Displaced People



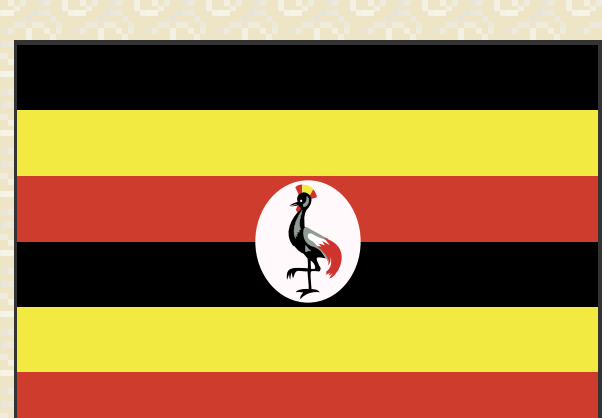
3.7 million hosted in Turkey



1.7 million hosted in Colombia



1.4 million hosted in Pakistan



1.4 million hosted in Uganda



1.2 million hosted in Germany

2

Voluntary Repatriation or **returning** to one's home country

251,000 refugees chose to return to their country of origin in 2020

Due to lack of stability and work opportunities, this is not always a likely option. The number of refugees returning home has been decreasing in the last decade.

3

Resettlement and Local Integration

COVID-19 has made it difficult for organizations like the United Nations to find permanent homes for refugees. In 2020, **34,400 refugees were resettled**, a significant decrease from the **107,800 resettled in 2019**.

Providing refugees with the opportunity to have full legal rights to the country they have fled to promotes safety and stability for themselves and their families.





MANAGING THIAMIN DEFICIENCY

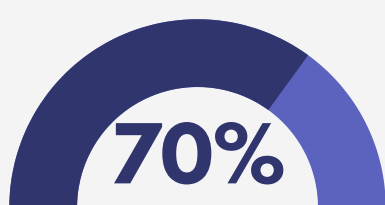
Subclinical thiamin deficiency (TD) is a global pregnancy issue exacerbated by hyperemesis gravidarum (HG) with potentially fatal consequences for both mother and child.

INCIDENCE

Thiamin or vitamin B1 deficiency is rarely tracked but has been documented in up to 90% of populations studied. HG greatly increases the risk of severe TD and may lead to heart failure and Wernicke's encephalopathy (WE).



WE can develop after just **2 weeks** of poor intake or vomiting.



Up to 70% reduction in absorption of B1 during HG due to gut damage & malnutrition.

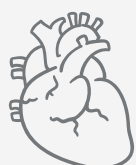
RISK > IN HG

- History: Chronic medication use, regular caffeine or alcohol use, processed diet, low/high BMI, bariatric surgery, diabetes
- Medications for: diuresis, depression, infection, hypertension, pain, acid reflux
- Diet: $\geq 55\%$ carbohydrates, poor nutrition/intake
- Physical: atrophy, pregnancy, GI dysfunction, sepsis, inflammation, stress, multiple gestation

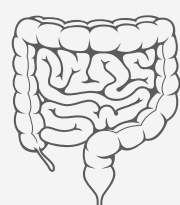
SIGNS/SYMPTOMS



Neuro: pain, weakness, ataxia, peripheral neuropathy, vision changes >> Wernicke's encephalopathy (WE) >> confusion, cognitive decline, memory loss >> coma >> DEATH



Cardio: tachycardia, edema >> heart failure



Gastro: dysmotility, anorexia, food intolerance, nausea, vomiting, dysbiosis

Other: sleep disturbance, fatigue, irritability, glucose dysregulation, muscle pain

Thiamin Functions

- Important for ATP Production
- Carbohydrate, fat and protein metabolism

Clinical Keys

- Classic triad for WE rare in HG.
- TD exacerbates HG!
- Labs reflect recent intake, not sufficiency.

Note:

- B1 is nontoxic.
- Some forms more readily cross blood brain barrier.
- Not in all prenats.

PREVENTION/TREATMENT

Prevention: 50-100 mg IV or PO daily (Benfotiamine/Lipothiamine)

Mild Deficiency: 100 mg IV/L up to 3x per day. 200 mg/L if giving D5.

CAUTION: D5 may precipitate WE or heart failure)

Severe Deficiency: ≥ 500 mg IV 3 times per day for 1+ weeks

** Reversal of deficiency takes months of supplementation.



B1 INTAKE

HG patients eat < 50% of normal intake for months. B1 RDI is 1.4 mg for a healthy pregnant woman on a normal diet and too low for HG.

- Brown rice 1/2 cup
- Noodles 1/2 cup
- Wheat bread slice
- Oatmeal 1/2 cup

= 0.1 mg of B1



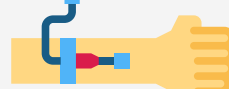
LONG-TERM COSTS

Standard dosing of 100 mg daily IV/PO costs < complications.

- Brain damage
- Heart damage
- Neurodev Delay
- Fetal loss/SIDS

IV B1

Up to 1500mg daily



References

Cells 2021, 10(10), 2595; <https://doi.org/10.3390/cells10102595>
Eur J Obstet Gynecol Reprod Biol. 2019 May;236:84-93.
<https://ods.od.nih.gov/factsheets/thiamin-healthprofessional>
Thiamin Fact Sheet; www.hyperemesis.org/tools
Women's Health & Gynecology. 2015, 1, (2), 7

HG is a potentially life-threatening pregnancy disease that may cause weight loss, malnutrition, dehydration, and debility due to severe nausea and/or vomiting.