Causes of HG

HG is a complex disease whose causes are not yet fully understood. Research has found that family history is one piece of the puzzle. If your mother, aunt, grandmother or sister experienced HG, you are more likely to suffer from it. We also know that HG recurs in more than 75% of mothers.

If You Have HG

Find healthcare providers who are experienced in managing HG, willing to try new treatments, and are compassionate.

Find an advocate among your friends or family whom you trust to speak for you and be a contact for your medical providers.

Find a support community experienced in coping with HG.

Learn about HG. Knowing treatment options often improves your care and effective management reduces the risk of complications.

HER Foundation Can Help

The HER (Hyperemesis Education & Research) Foundation is a nonprofit organization dedicated to HG support, education, research, and advocacy.

Since 2003, we have funded critical research and have been the voice of HG, the leading HG resource online for women and their healthcare providers, and a trusted lifeline for hundreds of thousands of HG sufferers.

REFERRAL NETWORK
Find a healthcare provider in your area who understands HG. Or email us for a quick response.

ONLINE SUPPORT
Join our online Support Forums to share your experiences, find hope and encouragement, and get answers to your questions.

SUPPORT NEAR YOU
Visit the "For Mothers" section on our website or email us to connect with a volunteer in your area.

INFORMATION
Our website has resources on HG symptoms, treatments, research, getting help, and coping tips.

www.HelpHER.org
GetHelpNow@HelpHER.org
facebook.com/HERFoundation
twitter.com/HGmoms

When it's more than morning sickness

GET HELP FROM HER

UNDERSTANDING HYPEREMESIS GRAVIDARUM (HG)

What HG Is

Hyperemesis Gravidarum (HG) is a disease of pregnancy marked by relentless nausea and/or vomiting and sensory sensitivity.

HG can cause rapid weight loss, dehydration, malnutrition, and other serious complications. Severe and/or untreated HG puts the current and future health and wellbeing of both mother and baby at risk.

What HG Is Not

HG is one of the most misunderstood medical problems of pregnancy - despite being the leading cause of hospitalization during early pregnancy, and second only to preterm labor as the leading cause of hospitalization throughout pregnancy. Few health professionals are experienced in proactive management of more severe HG, necessitating a change in doctors or consultations with perinatologists for effective management.

THE FACTS:

HG is not the morning sickness of a healthy, normal pregnancy.

HG is not caused by a psychological disorder and mothers have little control over their symptoms.

MORNING SICKNESS VS. HG

MORNING SICKNESS	HYPEREMESIS GRAVIDARUM (HG)
You lose little, if any, weight and meet recommended weight gains.	You lose 5-20 pounds or more (> 5% of pre-pregnancy weight) and may not gain adequately.
Have nausea/vomiting that does not prevent eating and drinking enough most days. Prescription medications and IVs are rarely required.	Have nausea/vomiting that prevents eating and drinking. Dehydration and malnutrition often occur, especially if not treated.
Vomit infrequently, and the nausea is not too severe. It may cause significant discomfort, but poses minimal health risks.	Retch or vomit frequently, and may vomit bile or blood, especially if left untreated. Nausea can be severe, constant, and very debilitating.
Feel substantial relief with diet and/or lifestyle changes most of the time, especially after 14 weeks.	Need medical treatment such as medications and IV fluids, and, at times, nutritional therapy.
Often feel better by 14 weeks but may have occasional episodes of nausea.	Sometimes feel better by mid-pregnancy, but may be sick throughout pregnancy.
Will be able to work and/or care for their family most days, though fatigue and nausea may make it difficult, especially early in pregnancy.	May be unable to function for weeks or months. Simple household chores and self-care tasks like showering or driving may be impossible.
Face little if any significant or lasting decline in emotional health or social activities.	Are at increased risk for anxiety, depression, postpartum depression, and post-traumatic stress disorder due to isolation, debility and misery.
Have babies who experience few if any health problems due to morning sickness.	Deliver babies with greater risk of prematurity and restricted growth, as well as long-term health conditions.

Medication Management for Hyperemesis Gravidarum By Kimber MacGibbon, RN

Taking medications during pregnancy is distressing for women as the general belief is that they will hurt their baby(ies). Compliance issues may result and a mother's condition will likely worsen. It is important for mothers to understand the risks of untreated HG on herself and her child including chronic dehydration, malnutrition, metabolic and emotional stress, as well as reduced mobility.

Conversely, most studies have found medications commonly used for HG do not significantly increase the risk of malformations in the baby. Studies also suggest women who lose less weight have better outcomes, and that medications are safer than parenteral (IV) nutrition. Mothers are acutely aware of the risks medications may pose, and will generally avoid them unless necessary. Therefore, it is unproductive for health professionals to attempt to validate symptom severity to determine if a mother is exaggerating to obtain medication.

It is important to not only decide on the correct medication(s), but also to make sure a medication is being tolerated and taken correctly for optimal effectiveness. Some medications can be made into a different form, such as a cream or suppository, by a compounding pharmacy. Others are available as oral dissolvable tablets, patches, or rapidly dissolving films. Trying the most effective medications in different forms is important before trying different medications.

Early pregnancy symptoms are challenging to manage as symptoms generally increase until the end of the first trimester. Many variables affect responsiveness to medications such as hydration and nutritional status, duration of symptoms, and interactions with other medications. These must be considered when assessing a mother's response.

> “It is important for mothers to understand the risks of chronic dehydration, malnutrition, metabolic and emotional stress, as well as reduced mobility.

Essential Medication Strategies

Mothers with hyperemesis face a number of challenges beyond nausea and vomiting that can be difficult for others to understand, including profound fatigue, sleepiness, weakness and pain. Knowing she is not alone can be very reassuring and helpful.

- Be cautious with medication changes. Medications may seem ineffective until the medication is removed and symptoms dramatically worsen. Consider adding medications instead, unless there are interactions or significant side effects.
- More than one prescription medication is typically required to adequately manage HG and minimize weight loss.
- Most medications are more effective in higher amounts (e.g. Zofran/ondansetron), and if taken on a consistent schedule, not as needed (prn).

- Dispensing medications more frequently (e.g. every 2 hours instead of every 4 hours) or continuously (by IV or subcutaneous infusion) may be more advantageous.
- Changing the route a medication is given (e.g. oral to IV or subQ pump, compounded Rx, etc.) can dramatically enhance its performance. Oral medications are generally unproductive in the presence of intractable vomiting.
- If a medication yields minimal improvement after 3-5 days, its benefit may only be found if trialed via another route and/or in combination with another medication.
- Adequate hydration and correction of electrolyte and micronutrient deficiencies (e.g. thiamine) are critical for symptom relief. Until these are corrected, actual medication response cannot be determined.
- Educate on treatment and prevention of medication side-effects that are worsened by pregnancy or HG (e.g. constipation, anxiety), which prevents additional complications and unnecessary discomfort.
- Treat co-occurring conditions such as reflux and constipation early.
- OB consults should be done before pregnancy and again as soon as pregnancy is confirmed to establish a plan of care when HG risk is high.
- Women who present with symptoms before 8 weeks are likely to get worse before the next scheduled visit. Set up contingent treatment in advance (e.g. earlier follow up, prescriptions on hold, direct contact number, guidelines on going to ER, etc.).
- Every pregnancy is different so medication effectiveness varies, but the severity of hyperemesis, as well as the duration, most often is similar.
- Proactively treat if there is early onset, greater severity, or prolonged duration of symptoms.
- Minimizing changes to doses and regimen when women are improving can prevent relapse, especially during initial recovery.
- Once symptoms have resolved and the mother is past her first trimester, it is important to wean medications slowly over a few weeks to avoid relapse. If symptoms reappear, return to the dose that was effective and consider weaning again after a few more weeks of stabilization.
- Even women who have returned to normal eating and activity may benefit from a low dose of medication throughout pregnancy to avoid relapse or constant fluctuations, and resultant debility.
- Women are very helpful in determining their medication needs, especially if they had HG previously. Most prefer to take none and will discontinue them as soon as possible.
- HG is traumatic and women are comforted by having access to medication early to alleviate symptoms at onset rather than when severe. Women may take less medication knowing they can get relief when needed, thus decreasing risk and cost.

> “Trying the most effective medications in different forms is often more beneficial than trying different medications.

QUICK TIPS

1. Changing medications abruptly or frequently is counterproductive.
2. Effectiveness changes with increased doses or frequency, changes in route or medication combinations.
3. Scheduled dosing improves response.
4. Metabolic imbalance impairs response to meds.
5. Side-effects are better prevented than managed.
6. If a history of HG, plan and treat proactively.
7. Wean slowly after a few weeks of stability with adequate intake.
8. Medication may be needed until delivery.
9. Women can offer valuable insight into their care.
10. HG is traumatic so treat with compassion and refer to the HER Foundation for support.

RESOURCES:
Ondansetron in pregnancy and risk of adverse fetal outcomes. N Engl J Med 2013; 368:814-823.
Risk factors, treatments, and outcomes associated with prolonged hyperemesis gravidarum. J Matern Fetal Neo Med. 2012 Jun;25(6):632-6.
Posttraumatic stress symptoms following pregnancy complicated by hyperemesis gravidarum. J Matern Fetal Neo Med. 2011 Nov;24(11):1307-11.
Symptoms and pregnancy outcomes associated with extreme weight loss among women with HG. J Women's Health. 2009 Dec;18(12):1981-7.
For more information: www.HelpHER.org/HER-Research

DISCLAIMER: This brochure is general information and not intended to, and does not provide medical advice, professional diagnosis, opinion, or a treatment plan for any individual. You should not use the information in place of consultation or advice of a healthcare provider. The author and the HER Foundation are not liable in any way for any advice, course of treatment, diagnosis or any other information, services or product you choose based on the information contained in this brochure or any other HER Foundation resource.

Hyperemesis Gravidarum Assessment

NAME ______________________________ DATE ______________________

ADDRESS ____

PHONE ______________________________ DATE OF BIRTH ______________

EMAIL ______________________________ EST DUE DATE ______________

CARE PROVIDERS			
	Name	Phone	
Perinatologist		( )	☐ Current ☐ Former
Obstetrician		( )	☐ Current ☐ Former
Gastroenterologist		( )	☐ Current ☐ Former
Dietician/Nutritionist		( )	☐ Current ☐ Former
Midwife		( )	☐ Current ☐ Former
		( )	☐ Current ☐ Former

HEALTH HISTORY		
☐ Gall Bladder Disease ☐ Surgery	☐ Hypoglycemia	☐ Thyroid Disease: ☐ Hypo ☐ Hyper
☐ Cyclic Vomiting Syndrome	☐ Migraines	☐ Diabetes ☐ During pregnancy
☐ Irritable Bowel Syndrome	☐ Stomach/GI Ulcers	☐ Bleeding or ☐ Clotting Issues
☐ PMS or irregular periods	☐ Allergies/Asthma	☐ Celiac Disease/Food Allergies
☐ Family History of HG	☐ Liver Disease	☐ Pancreatitis ☐ Due to TPN
☐ Anxiety/Depression	☐ Kidney Disease	☐ Intolerance of Oral Hormones
☐ Ovarian Cysts/PCOS	☐ Motion Sickness	☐ Other:
☐ Molar Pregnancy	☐ Seizures	

☐ No previous pregnancy (the remainder of this page and the next 4 sections are pregnancy history which you may skip.)

PREGNANCY & HG SUMMARY	
Total number of pregnancies? _____	How many pregnancies with severe nausea/vomiting or HG? _____
How many live births? _____	How many pregnancies with multiples? _____
How many pregnancy losses? _____	# Pregnancies aborted due to HG: _____
How many ER visits for HG? _____	How many inpatient stays for HG? _____ Est. total days: _____
Week symptoms usually start: _____	Week symptoms ended: _____ ☐ @ Delivery
How many weeks on bed rest? _____	How long did you take medications? _____ weeks or months

Hyperemesis Gravidarum (HG) is severe nausea and/or vomiting that causes you to lose weight and need medical treatment such as medications or IV fluids, and results in the inability to do your usual activities and maybe care for yourself.

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PREGNANCY TREATMENT HISTORY							
Preg #	Medication	Dose (e.g. 4 mg)	Pill/IV/Patch SubQ/Rectal	Frequency (3x/day)	During which weeks?	How did it affect you?	Any Problems?

e.g. Zofran (ondansetron), Compazine/Stemetil, Reglan (metaclopramide), Kytril (granisetron), Diclegis/Diclectin, Phenergan (promethazine), Steroids

In a prior pregnancy, did you receive: ☐ IV Nutrition (TPN) ☐ Tube Feedings ☐ Home Health Care ☐ Total Days: _____
In a prior pregnancy, did you experience: ☐ Depression/anxiety ☐ Delivery complications ________________________
☐ Other problems: ____

PREGNANCY OUTCOME SUMMARY						
Year of Delivery or Loss	HG Y/N (yes/ no)	Weight Loss (e.g. 5 kg)	How Many Weeks Pregnant?	Outcome: Miscarriage (MC) Stillbirth (SB) Termination (Ab) Live Birth (LB)	Complications: e.g. Preeclampsia (PE), Placental Abruption (PA) Premature Delivery (PD)	Child: Health, Genetic, Psychological/Behavioral or Developmental Issues

POSTPARTUM SYMPTOMS & DURATION					
Symptom	# Weeks	Symptom	# Weeks	Symptom	# Weeks
☐ Depression/Anxiety		☐ Fatigue/weakness		☐ Sleep difficulties not due to child(ren)	
☐ Traumatic Stress		☐ Reflux/GI Issues		☐ Dental Issues	
☐ Fully Recovered @		☐ Other:			

CHILD OUTCOMES						
1st	☐ Reflux ☐ Colic	☐ Growth Restriction	☐ Developmental/ Behavioral Issues	☐ Autoimmune Issues	☐ Allergies ☐ Asthma	☐ Other:
2nd	☐ Reflux ☐ Colic	☐ Growth Restriction	☐ Developmental/ Behavioral Issues	☐ Autoimmune Issues	☐ Allergies ☐ Asthma	☐ Other:
3rd	☐ Reflux ☐ Colic	☐ Growth Restriction	☐ Developmental/ Behavioral Issues	☐ Autoimmune Issues	☐ Allergies ☐ Asthma	☐ Other:
4th	☐ Reflux ☐ Colic	☐ Growth Restriction	☐ Developmental/ Behavioral Issues	☐ Autoimmune Issues	☐ Allergies ☐ Asthma	☐ Other:

VISIT ASSESSMENT

NAME________________________________ DATE________________________________

WEIGHT: Pre-Preg ______ lb/kg Current ______ lb/kg ALLERGY: _____________ HELP Score: _____
Lost this week ______ Total Lost ______ % Ketones: ______ Previous HELP Score: _____

CURRENT CARE - MEDICATIONS

Medication	Dose (e.g. 4mg)	Frequency (e.g. 3x/day, 1x/week)	Route (Oral/IV)	Do you keep it down?	Effect of medication or problems
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	

Medication side-effects: ☐ Constipation ☐ Anxiety ☐ Drowsiness ☐ Headaches ☐ Dizziness ☐ Dry Mouth
☐ Other issues: ____

CURRENT CARE - SUPPLEMENTS & VITAMINS

Supplements (include brand & main ingredient(s) if known)	Dose (e.g. 4 tabs)	Frequency (e.g. 3x/day, 1x/week)	Reason (e.g. reflux)

Vitamins: ☐ Prenatal ☐ Vit B6 ☐ B1 ☐ Thiamin ☐ Iron ☐ Other: ______________________
Nutrition: ☐ IV fluids (TPN/TPPN) ☐ NG/NJ/Tube feedings ☐ Start Date ______________ ☐ None
Current IV or nutritional therapy: ______________________________________
IV/Midline/PICC/G or J-tube Symptoms: ☐ Redness ☐ Swelling ☐ Pain ☐ Warmth ☐ Rash/Infection ☐ Fever/Chills
Additional treatments: ☐ Acupuncture ☐ Other: ______________________________
I am considering termination of my pregnancy because I'm sick. ☐ Yes ☐ No ☐ Maybe

CURRENT NUTRITION

What did you eat yesterday? ______________________________________
Foods you can eat: ______________________________________
Foods you cannot eat: ______________________________________
Amount of food you eat compared to pre-pregnancy: ______% (e.g. 50% = half of what you normally eat)

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RATE ANY YOU HAVE EXPERIENCED RECENTLY USING A SEVERITY SCALE OF 0 TO 5 *0=OK Now, 1=Mild, 3=Moderate, 5=Severe*					
Symptom	Severity	Symptom	Severity	Symptom	Severity
Heartburn/Reflux		Excessive saliva		Vision changes	
Constipation		Diarrhea		Hoarseness	
Jaw pain/clicking		Abdominal pain		Heart rate changes	
Difficulty walking		Abdominal fullness		Confusion	
Breathlessness		Difficulty swallowing		Poor sleep/Insomnia	
Fever or Chills		Depression/anxiety		Headaches/Migraines	
Difficulty with memory or focus		Frequent urination, or burning or pain		Throat burning/ bleeding	
Dry skin/lips/mouth		Blood in urine		Difficulty functioning	
Bloody vomit		Bloody or fatty stool		Weakness/Fatigue	
Blood clots		Urine/stool leakage		Muscle cramps/spasms	
Fainting or Dizziness		Vaginal bleeding		Hemorrhoids	
Pain:		Other:			

SYMPTOM ASSESSMENT

Main Triggers: ☐ Noise ☐ Light ☐ Smells ☐ Motion ☐ Car Rides ☐ Sight of Food
☐ Other: ____

Week symptoms started: _____ Hours of nausea each day: _____

How would you rate the overall severity of nausea/vomiting: ☐ Mild ☐ Moderate ☐ Severe ☐ Varies

How many times do you vomit daily: _____ How many times do you retch: _____ ☐ Varies each day

Vomit Description: ☐ Bile ☐ Blood ☐ Liquid ☐ Coffee grounds ☐ Undigested food ☐ Other:__________

Appetite: ☐ None ☐ Very little ☐ Sometimes ☐ Painfully hungry ☐ Varies all day ☐ Other:__________

Days since last BM: _____ ☐ None/Minimal ☐ Small ☐ Medium ☐ Large ☐ Describe: __________

Symptoms compared to previous pregnancy: ☐ Worse ☐ Better ☐ Same ☐ Unsure ☐ Varies ☐ N/A

PSYCHOSOCIAL SUMMARY

Who helps care for you? ____

Employment status: ☐ Full-time ☐ Part time ☐ On Leave/Disability ☐ Student ☐ Work @ home ☐ None

Number of adults in your home? _____ Number of kids under 18 years? _____

What activities are you unable to do? ____

What causes the most stress? ____

Other concerns? ____

____

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PLAN OF CARE

NAME ______________________ DATE __________ GA: _____ weeks

☐ Follow-up in ____ days ☐ Admit Inpatient ☐ Private Room ☐ ____________

Consults: ☐ Home Health ☐ Perinatology/MFM ☐ RD/CN ☐ GI ☐ PT ☐ Psych ☐ Neuro ☐ Other: ________

Diagnostics: ______________________

Ultrasound: ☐ Abdominal ☐ Vaginal ☐ Pelvic ☐ Other: ______________

Lab Panels: ☐ Metabolic ☐ Thyroid ☐ Electrolytes ☐ Weekly CMP for TPN ☐ Liver ☐ Renal ☐ H-pylori

☐ Other: ______________________

Antiemetic Recommendations:

☐ Change: 1. Dose 2. Frequency 3. Route 4. Add (or change) Rx

☐ Take on strict schedule vs. prn & wean slowly if asymptomatic 14+ days

☐ Give HER Foundation Referral/Brochures

☐ Check Ketones @ home every ____ days

☐ Do HELP Score @ home every ____ days

MEDICATIONS & ESSENTIAL VITAMINS

Medication	Dosage	Route **	Considerations
☐ Diclegis/Diclectin ☐ Unisom ☐ Diphenhydramine	___ tabs q ___ hours or ☐ QHS ☐ QID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ May cause drowsiness. ☐ Check daily B6 total.
☐ Zofran (ondansetron) ≤32mg ☐ Kytril (granisetron) ≤2mg ☐ Anzemet (dolasetron) ☐ Remeron (mirtazapine)	_____mg q ___ hours or ☐ BID ☐ QID ☐ PRN ______________	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐ PR ☐ ODT vaginally ☐ Other: ____________	☐ Take on strict schedule. ☐ Docusate _______ QHS ☐ Laxative _________ PRN ☐ √ LFT & EKG changes.
☐ Phenergan ≤25mg QID (promethazine)	_____mg q ___ hours or ☐ QHS ☐ QID ☐ PRN	☐ Oral ☐ PR ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ Use antihistamine to prevent side-effects.
☐ Reglan/Maxeran/Primperan (metoclopramide) 5-20mg QID	____mg ☐ Before meals (30 min) ☐ QID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ PR ☐____	☐ Antihistamine (for side-effects); slow IV; low dose
☐ Compazine/Stemetil (prochlorperazine) ≤10mg QID	_____mg q ___ hours or ☐ BID ☐ QID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ PR ☐____	☐ Antihistamine may prevent side-effects.
☐ Solu-medrol IV ☐ Methylprednisolone	___mg __x/day x __days ☐ ______________ ☐ ______________	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ High dose then taper. ☐ May also need low dose x1 month.
☐ Catapres (clonidine) ☐ Neurontin (gabapentin)	_____mg q ___ hours or ☐ QD ☐ QID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ Transdermal option ☐ Experimental usage
☐ Aloxi (palonosetron) ☐ ______________	_____mg q ___ hours or ☐ QD ☐ BID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ NEW; use with caution.
☐ Thiamin/B1 ≤500 mg/day ☐ Vitamin B Complex 1-2x/day	_____mg or tabs ☐ QD ☐ BID ☐ TID ☐ QID	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ To prevent Wernicke's if 2+ weeks poor intake.
☐ Multivitamin/MVI ☐ Prenatal (√ amt. B1/B6 mg)	__ tabs/amp QD ☐ with food or ☐ PRN ☐ QHS	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ Iron may ↑ nausea; try iron-free or w/food QHS.
☐ Pyridoxine/B6 ≤150 mg/day	____mg q ___ hours/QD	☐ Oral ☐ SL ☐ IV ☐____	☐ >150 mg ⇨ neuropathy.
SLEEP: ☐ ______________	_____mg q ___ hours or ☐ PRN ☐ QHS	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ e.g. Vistaril (hydroxyzine) ☐ Poor sleep worsens HG.
GI/GERD/Constipation: ☐ ______________	_____mg q ___ hours or ☐ QD ☐ BID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐ H2 blockers & PPI's may improve nausea.
☐ ______________	_____mg q ___ hours or ☐ TID ☐ QID ☐ PRN	☐ Oral ☐ OD ☐ TD ☐ SQ ☐ Comp ☐ IV ☐ SL ☐____	☐

**OD = Oral Dissolving, TD = Transdermal, SQ = Subcutaneous, SL = Sublinqual, Comp = Compounded, PR = Rectal, PV = Vaginal
IM not recommended due to atrophy & ↑ pain sensitivity.

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ADDITIONAL INTERVENTIONS & ASSESSMENTS

Vitamins: ☐ Iron ☐ Folic Acid ☐ B Complex ☐ B6 50 mg ☐ B1 50mg/100mg ☐ Prenatal (√ B1)
☐ Oral ☐ Sublingual ☐ Transdermal ☐ Other: ______________

Nutrition: ☐ TPN ☐ PPN ☐ NG/J ☐ G/J-Tube ☐ Formula: ______________________________

Parenteral Therapy Orders:
☐ Periph IV ☐ Midline ☐ PICC ☐ Central ☐ Other: ________________________
☐ Outpatient Clinic ☐ Home IV ☐ Other: ________________________
☐ Myer's Cocktail ☐ Banana Bag ☐ ___ L over ___ hours ☐ PRN ☐ Daily ☐ M/W/F

Other IV Fluids:
☐ NS ______ ☐ 1L ☐ 2L ☐ 3L ____ x/day over ____ hours ☐ PRN ☐ Daily ☐ M/W/F ☐ Add 100mg B1
☐ LR ______ ☐ 1L ☐ 2L ☐ 3L ____ x/day over ____ hours ☐ PRN ☐ Daily ☐ M/W/F ☐ Add 100mg B1
☐ ________ ☐ 1L ☐ 2L ☐ 3L ____ x/day over ____ hours ☐ PRN ☐ Daily ☐ M/W/F ☐ Add 100mg B1
☐ MVI daily ☐ B Complex ____ x daily ☐ Thiamin 100mg ___ x/day ☐ Vit K ____ mg/day
☐ KCl __________ ☐ NaCl ____________ ☐ Folic Acid ______ mcg daily ☐ $MgSO_4$ ________________
☐ Other: ____ ☐ IV Iron ________

Psychosocial Needs: ☐ Disability ☐ FMLA ☐ Diet Log ☐ Other: ________________
Home Assessment: ☐ Ketostix ☐ Home RN ☐ HG Care App ☐ HELP Score every ___ days
Patient Education: ☐ Diet/thiamin intake ☐ Bowel regimen ☐ IV/enteral management
☐ Serotonin Syndrome ☐ Transdermal patch ☐ HER HG Brochure/Referral
☐ ____ ☐ TED hose/embolus prevention

REHYDRATION RECOMMENDATIONS

☐ D5NS + 1 amp MVI + 100 mg thiamin + 1 mg folic acid
☐ Banana Bag + B-complex
☐ Myer's Cocktail + 1 ampule of MVI + 1 mg folic acid
Note: MVI contains only 6 mg of thiamin.

ANTIEMETIC COMBINATIONS

☐ 5HT3 antagonist + Promethazine
☐ 5HT3 antagonist + Metoclopramide
☐ 5HT3 antagonist + Corticosteroid + Metoclopramide
Add-ons: ☐ Vit B6 + B1 ☐ Acid reducer ☐ Antihistamine

MD Signature ____ Date ________________

____ Date ________________

TREATMENT STRATEGIES *(Acronym: HELP HER)*

1. Hydration is important for treatment effectiveness.
2. Electrolytes & nutritional deficits should be corrected regularly.
3. Loss of muscle mass makes IM injections problematic.
4. Proactively address medication side-effects.
5. HER Foundation referrals offer education & support.
6. Escalate dose & change frequency/route then change/add meds.
7. Relapse common if meds stopped abruptly, wean over 2+ weeks.

Kimber's RULE OF 2'S

Wean medications for HG:

Over 2+ weeks + After 2+ weeks without symptoms + In 2nd trimester or later

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www.HERFoundation.org & www.HelpHER.org
info@HelpHER.org
HER is the global voice of HG

Hyperemesis Gravidarum Management Protocol

REHYDRATE METHODICALLY
Banana Bag + Vit B6 + Vit B1
Myer's Cocktail + 1 ampule MVI
D5NS or D5LR + 1 ampule MVI + Vit B6 + Vit B1
*Add as needed: Vit K, Vit D, zinc, selenium, iron, magnesium and calcium

IMPLEMENT COMPASSIONATE CARE
Women with HG are miserable for months and their concerns and requests should be taken seriously. Every possible comfort measure should be taken to minimize unnecessary suffering. Compassionate and effective treatment prevents therapeutic termination, and influences if mother and baby will suffer from physical and psychological complications (e.g. organ damage, trauma) during pregnancy and long-term.

PRESCRIBE ANTIEMETIC MEDICATIONS
Start with a drug targeting the main triggers (e.g. motion). If numerous triggers, and/or more severe symptoms, consider serotonin antagonists. Multiple meds may be needed simultaneously throughout pregnancy. Be proactive and aggressive early in pregnancy if she has a history of HG. See tiered medication list below. 2

PREVENT OR TREAT ADDITIONAL ISSUES
Issues: ptyalism, GERD, encephalopathy, gastroparesis, UTI, insomnia, h-pylori, cholestasis, debility, embolus
Medication side effects: severe constipation, serotonin syndrome, anxiety, headache, extrapyramidal symptoms

UTILIZE HER FOUNDATION RESOURCES
Share HER Foundation brochures & information (HelpHER.org/info). Support email: GetHelpNow@HelpHER.org. Utilize HELP Score and HER HG Assessment & Management Clinical Tools (HelpHER.org/tools).

Is patient: Eating ≤ 1 meal per day? Dehydrated? Losing ≥ 2lbs (1 kg)/week? Not responding to Rx?

INPATIENT CARE
- Weigh every 1-2 days
- Use comfort measures 2
- Rehydrate: D5LR or D5NS + MVI + B1/thiamin IV + B6/ pyridoxine IV + electrolytes (treat mild deficiency)
- Consider midline OR central/PICC line
- Begin Enteral/Parenteral Nutrition 2
- Labs: Nutritional panel, CMP, electrolytes, urinalysis
- Consults: Nutrition, PT, GI, home health, IV team
- D/C: Intake >1 meal/day + adequate fluid intake OR nutritional therapy + no ketones & maintaining or gaining weight. Goal: HELP Score ≤20

HOME CARE
- Weigh Monday/Wednesday/Friday
- Complete HELP Score daily
- Nutrition/Fluids: Enteral (NG/NJ or PEG/J) *or* Parenteral Nutrition (TPN/TPPN) *or* PICC/midline + D5LR or D5NS + MVI + vit B1 IV + vit B6 IV
- Weekly labs if on TPN: CMP, electrolytes
- D/C: Intake ≥ 2 meals/day + adequate oral fluids + no ketones + weight gain. Goal: HELP Score ≤20

see page two for more detailed information

OUTPATIENT CARE
FIRST VISIT
- Establish compassionate rapport
- R/O: hydatiform mole (GTD), gall bladder & pancreatic disease, helicobacter pylori, hyperthyroidism
- Labs: Urinalysis, hormone levels, comprehensive metabolic panel (CMP), thyroid panel

EACH VISIT
- Assess with HELP Score & HER Clinical Tools
- Try prenatal with food or iron-free as tolerated
- Weigh at least weekly & trend % weight loss
- Labs prn dehydration: electrolytes, CMP, u/a, ketones
- Encourage active oral care (e.g. water flosser) & eval
- Evaluate & treat additional symptoms (see above)
- Check WE signs (esp. if infusing glucose) 2
- Refer for consults & adjunctive care 2
- Diet: Encourage healthiest food tolerated, add thiamin 50 mg PO TID if high carbohydrate diet
- Review medications 2 for tolerance/side-effects
- Monitor thiamin & vitamin K & electrolyte needs

2nd & 3rd TRIMESTER
- Labs: thyroid panel, iron, CMP
- PT consult: weakness/atrophy, birth prep
- Use alternate for Glucola (GTT), e.g. jelly beans, juice

Hyperemesis Gravidarum Management Protocol

ANTIEMETIC ESSENTIALS

- 1st: Δ dose/frequency
- 2nd: Δ route (SubQ, TD, compound)
- 3rd: Add/replace a medication
- Avoid abrupt Δ's in 1st trimester
- Wean over 2+ weeks if asymptomatic
- Prevent/proactively treat side-effects
- Cocktail: 1st level meds + 5HT3 antagonist + Reglan or Phenergan

1ST LEVEL MEDS

- Antihistamine
- Acid reducer
- Vitamins B1 & B6 50-150 mg/day
- Rx's successful in previous pg

2ND LEVEL MEDS

- Prokinetics (Reglan* 5-10 mg QID)
- Proton pump inhibitors (PPI)
- Serotonin antagonists (ondansetron 8 mg QID, granisetron 2 mg BID or TD)
- Promethazine* (Phenergan 25mg QID)
- Methylprednisolone (after 8 weeks)
- IV fluids/Nutritional therapy

3RD LEVEL MEDS/EXPERIMENTAL

USE CAUTIOUSLY; SAFETY UNKNOWN

- Phenothiazines* (e.g. chlor-promazine, prochlorperazine)
- Benzodiazepine (e.g. Diazepam)
- Neuroleptic (e.g. Inapsine)
- Remeron (mirtazapine)
- Anticonvulsants (e.g. neurontin)
- THC/marijuana (or Dronabinol Rx)
- Clonidine (Transdermal)

Δ = Change
* Prophylax with antihistamines for anxiety; monitor for extrapyramidal symptoms & neuroleptic malignant syndrome

WE/ODS ESSENTIALS

- Causes: Thiamin & electrolyte deficiency/shifts, infection, diuretics
- Signs: Δ in vision or speech or gait or mental status, abdominal pain, headache, cardiac symptoms, somnolence, dizziness, weakness, aphasia, tremor, irritability, spastic paresis, seizure, myalgia, myoclonus, anorexia, dysphagia, elevated transaminase
- Prevention: oral/IV thiamin ≥ 50 mg daily or TID; continue postpartum
- Acute Care: Thiamin 100 mg IV up to 500 mg/day until asymptomatic
- Diagnosis: MRI
- Result: Maternal & fetal morbidity or mortality (e.g. pre-eclampsia, SIDS)
- Onset: Acute (e.g. IV glucose or electrolytes) or Gradual/chronic

WE=Wernicke's encephalopathy
ODS=Osmotic Demyelination Syndrome

TPN/TPPN ESSENTIALS

- Prevent Refeeding Syndrome
- Add MVI + folic acid + B6 + B1 + Phosphorus + Mg + Vit D & K + Ca
- Labs: CMP weekly
- Strictly adhere to aseptic insertion technique & management protocols
- Red flags: chest pain, shortness of breath, temp ≥ 101 F (38.3 C) or ≤ 96.8 F (36 C), redness/swelling/rash

ENTERAL ESSENTIALS

- Prevent Refeeding Syndrome
- Check vitamin K & thiamin dose
- NG/NJ: Use pediatric tube; slow rate
- May need extra IV or fluid boluses

Kimber's RULE OF 2'S

Wean medications for HG:

Over 2+ weeks + After 2+ weeks without symptoms + In 2nd trimester or later

COMFORT MEASURES

- Private room (avoid stimuli)
- Avoid IM injections (atrophy)
- Warm IV fluids/blankets
- Use lidocaine before IVs
- Midline/PICC vs. peripheral IV's
- Offer preferred foods when least ill

CONSULTS/ADJUNCTIVE CARE

- Consults: GI, nutrition, home health, psychology (PTSD), perinatology/MFM
- Adjunctive care: hypnosis, acupuncture, homeopathy, osteopathic manipulation

PATIENT/FAMILY EDUCATION

- Daily: HELP Score, ketostix
- Call if significant Δ in HELP Score
- Coping for psychosocial & debility
- Red flag signs: hematemesis, rapid weight loss, Δ in breathing or gait or vision or mental status, fever, chills, chest pain/arrhythmia, somnolence, oliguria, fainting, severe pain

POSTPARTUM SUPPORT

- Psych: Trauma/PPD support
- Nutrition: Thiamin + prenatal
- Evals: PT, thyroid, ND, GI prn nausea

HG FACTS

- Genetic links to IGFBP7 & GDF15 & RYR2 (cyclic vomiting syndrome)
- Diagnosis: dehydration, poor nutrition, weight loss, debility
- Fetal loss rate: 34%
- Termination rate: 15%
- Maternal Complications: atrophy, esophageal tear/rupture, organ rupture/failure, deconditioning, pneumomediastinum, gall bladder dysfunction, fatty liver, neurological disease, retinal hemorrhage, GI ulcer or infection, premature labor & delivery, PTSD, rhabdomyolysis, severe dental damage
- Child Outcome Risks: IUGR, sensory & emotional & neurodevelopmental & behavioral disorders, vitamin K deficient embryopathy, stillbirth

Hyperemesis Gravidarum Patient Protocol

REHYDRATION
Banana Bag + Vit B6 + Vit B1
Myer's Cocktail + 1 ampule MVI
D5NS or D5LR + 1 ampule MVI + Vit B6 + Vit B1
*Add as needed: Vit K, Vit D, zinc, selenium, iron, magnesium and calcium

COMPASSIONATE CARE
Women with HG are miserable for months and their concerns and requests should be taken seriously. Every possible comfort measure should be taken to minimize unnecessary suffering. Compassionate and effective treatment prevents therapeutic termination, and influences if mother and baby will suffer from physical and psychological complications (e.g. organ damage, trauma) during pregnancy and long-term.

ANTI-VOMITING MEDICATIONS
Start early if a history of HG and begin with a drug targeting the main triggers (e.g. motion). If numerous triggers, and/or more severe symptoms, consider serotonin antagonists (ondansetron/granisetron). Understand few meds help nausea. A medication combination may be needed throughout pregnancy. See medication list below.

PREVENT OR TREAT ADDITIONAL ISSUES
Issues: acid reflux, urinary infection, insomnia, helicobacter pylori infection, embolus, gall bladder/liver congestion
Medication side effects: severe constipation, serotonin syndrome, anxiety, headache, extrapyramidal symptoms

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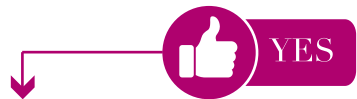

Is mother: Eating ≤ 1 meal per day? Dehydrated? Losing ≥ 2lbs (1 kg)/week? Not responding to Rx?

HOSPITAL/ER CARE

- Weigh every 1-2 days.
- Use comfort measures.
- Rehydration Recommendation: IV fluids + IV multivitamin + vitamins B1 & B6 IV + electrolytes
- Ask about a midline IV OR central/PICC line.
- Request a feeding tube or IV nutrition if you lose over 10% your body weight.
- Request labs: nutrition & metabolic panel, urinalysis
- Ask about consults: Nutrition, Physical Therapy, GI, Home Health, Perinatolgy/Maternal Fetal Medicine
- Return home when eating >1 meal/day + drinking enough fluids OR you get nutritional therapy.
  Goal: HELP Score ≤20

HOME CARE

- Weigh Monday/Wednesday/Friday.
- Complete HELP Score daily.
- Options: daily Enteral (NG/NJ or PEG/J) *or* Parenteral Nutrition (TPN/TPPN) *or* PICC/midline rehydration.
- Weekly labs for TPN: Comprehensive metabolic panel
- Continue until eating ≥ 2 meals/day + drinking enough fluids + gaining weight. Goal: HELP Score ≤20

see page 2 for more detailed information

OUTPATIENT CARE

FIRST VISIT
- Discuss pregnancy history and symptoms in detail.
- Check for molar pregnancy, gall bladder & pancreatic disease, helicobacter pylori infection, hyperthyroidism.
- Labs: Urinalysis, hormone levels, comprehensive metabolic panel (CMP), thyroid panel

ROUTINE CARE
- Do HELP Score daily & HER Assessment Form weekly.
- Try a prenatal vitamin with food or try an iron-free.
- Weigh yourself every 1-2 days when you wake up & call doctor if you lose ≥ 2 lbs (1 kg) in 1 week.
- Try to brush & floss daily (try a water flosser) & get a dental exam at least 1 time while pregnant.
- Rinse mouth with water after vomiting; wait 15 minutes then try brushing with water & baking soda.
- Watch for signs of Wernicke's encephalopathy.
- Eat as healthy as you can; take 50 mg tablets daily of both vitamin B1 (thiamin) & vitamin B6 three times/day.
- Notify your doctor of medication side-effects, and if you are unable to keep your medications down.

2nd & 3rd TRIMESTER
- Labs: thyroid panel, iron
- Ask about using jelly beans/juice for Glucola (GTT) test

Hyperemesis Gravidarum Patient Protocol

MEDICATION (RX) ESSENTIALS

- If medications are not working:
  1. Try changing dose/frequency.
  2. Try different routes: IV, subQ.
  3. Then add/replace a medication.
- Wean over 2-3 weeks when well.
- Prevent and treat side-effects.
- Combination: 1st level meds + 2nd level meds (e.g. Zofran + Phenergan)

1ST LEVEL MEDICATIONS

- Antihistamine
- Acid reducer (Zantac/ranitidine)
- Vitamins B1 & B6 50-150 mg/day
- Meds successful in previous pg

2ND LEVEL MEDICATIONS

- Metoclopramide/Reglan* (5-10 mg)
- Proton pump inhibitors (Prevacid)
- Ondansetron/Zofran (≤ 32 mg/day), granisetron/Kytril (≤ 4 mg/day)
- Promethazine/Phenergan* 12.5-25 mg up to every 4 hours
- Methylprednisolone (after 8 weeks)

3RD LEVEL MEDS/EXPERIMENTAL

** These medications may present a risk to mother or baby. Safety during pregnancy is not confirmed. **

- Prochlorperazine/Compazine*
- Benzodiazepines (e.g. Diazepam)
- Droperidol (Inapsine)*
- Remeron (Mirtazapine)
- Gabapentin (Neurontin)
- Marijuana (or Dronabinol Rx)
- Clonidine (Transdermal)

* Take with antihistamines for anxiety; monitor for extrapyramidal symptoms & neuroleptic malignant syndrome.

BRAIN HEALTH ESSENTIALS

- Causes: Lack of thiamin (vitamin B1) & electrolytes, infection, diuretic Rx
- Signs: Changes in vision or speaking or walking or thinking, abdominal pain, severe headache, change in heart rate or rhythm, sleepiness, dizziness, weakness, inability to speak, shakiness, irritability, muscle spasms, seizure, muscle pain, lack of appetite, difficulty swallowing
- Prevention: Thiamin 50 mg 1-3 times a day (body stores deplete in 2 wks).
- Treatment: Thiamin 100 mg IV up to 500 mg/day until no more symptoms
- Diagnosed by MRI
- May cause serious long-term health issues for both mother and baby.
- May start quickly if you are given IV glucose or electrolytes.

WE = Wernicke's encephalopathy
ODS = Osmotic Demyelination Syndrome

IV NUTRITION ESSENTIALS

- Start slow & watch for symptoms of Refeeding Syndrome.
- Add MVI + B1 100 mg + B6 50 mg + Phosphorus + Mg + Vit D & K + Ca.
- Labs: Metabolic panel weekly
- Learn & carefully follow cleaning & dressing change instructions.
- Call doctor if you have chest pain, breathlessness, temp ≥ 101F (38.3C) or ≤ 96.8F (36C), redness/swelling.

FEEDING TUBE ESSENTIALS

- Start slow & watch for symptoms of Refeeding Syndrome.
- NG/NJ: Use pediatric tube; slow rate

Wean medications for HG:

Over 2+ weeks + After 2+ weeks without symptoms + In 2nd trimester or later

COMFORT MEASURES

- Ask for private room (avoid stimuli).
- Avoid shots (due to muscle loss).
- Request warm IV fluids/blankets.
- Ask for lidocaine before IV insertion.
- Discuss possible midline/PICC IV.
- Eat preferred foods when least ill.

CONSULTS/OTHER CARE

- Consults: GI, nutrition, home health, psychology (PTSD), perinatology/MFM
- Other care: hypnosis, acupuncture, homeopathy, massage, osteopathic manipulation, daily IV fluids

KEY REMINDERS

- Daily checks: HELP Score, ketostix
- Call doc if HELP Score worsens
- Call doc if any red flag symptoms: blood in vomit/urine, rapid weight loss, changes in breathing or walking or vision or thinking, fever or chills, chest pain, sleepiness, no urine output, fainting, severe pain

POSTPARTUM NEEDS

- Support for depression & trauma
- Continue B vitamins & prenatals
- Thyroid test; see ND or GI if nausea

HG FACTS

- HG related genes: IGFBP7 & GDF15 & RYR2 (cyclic vomiting syndrome)
- Criteria for HG: dehydration, poor nutrition, weight loss, exhaustion
- May need referral to HG-friendly doc
- Possible Complications: muscle loss, throat damage, organ failure, inability to care for self/family, gall bladder congestion, fatty liver, brain disease, bleeding in the eyes, stomach ulcer or infection, premature labor & delivery, trauma, severe tooth damage, severe constipation, muscle cramping
- Child Outcome Risks if Severe HG: poor growth, sensory & developmental & behavioral problems, vitamin deficiencies, loss

HELP (HyperEmesis Level Prediction) SCORE

Name: ______________________________ Date: ___________ Gestational Age: ______ SCORE: _______

TODAY'S Weight: ______ LAST WEEK'S Weight: ______ Change: _____% PREVIOUS SCORE: _______

Meds: ☐ Ondansetron ☐ Granisetron ☐ Diclegis ☐ Promethazine ☐ Metoclopramide ☐_______________

Mark ONE box in EACH ROW that most accurately describes your experience over the last: ______ days(s).

My nausea level most of the time:	0	1 (Mild)	2	3 (Moderate)	4	5 (Severe)
I average __ vomiting episodes/day:	0	1-2	3-5	6-8	9-12	13 or more
I retch/dry heave __ episodes daily:	0	1-2	3-5	6-8	9-12	13 or more
I am urinating/voiding:	Same	More often, IV fluids; light or dark color	Slightly less often, and normal color	Once every 8 hours; slightly dark yellow	Less than every 8 hours or darker	Rarely; dark, blood; foul smell
Nausea/vomiting severity 1 hour *after* meds OR after food/drink if no meds:	0 or No Meds	1 (Mild)	2	3 (Moderate)	4	5 (Severe)
Average number of hours I'm unable to work adequately at my job and/or at home due to being sick has been:	0	1-2 (hours are slightly less)	3-4 (can work part time)	5-7 (can only do a little work)	8-10 (can't care for family)	11+ (can't care for myself)
I have been coping with the nausea, vomiting and retching:	Nor-mal	Tired but mood is ok	Slightly less than normal	It's tolerable but difficult	Struggling: moody, emotional	Poorly: irritable depressed
Total amount I have been able to eat/drink AND keep it down: *Medium water bottle/large cup = 2 cups/500mL.*	Same; no weight loss	Total of about 3 meals & 6+ cups fluid	Total of about 2 meals & some fluid	1 meal & few cups fluid; only fluid or only food	Very little, <1 meal & minimal fluids; daily IV	Nothing goes or stays down, or daily **IV/TPN**
My anti-nausea/vomiting meds stay down/are tolerated:	No meds	Always	Nearly always	Sometimes	Rarely	Never/**IV/SQ** (subQ pump)
My symptoms compared to last week:	Great	Better	About Same	Worse	Much Worse	Much Worse!!!
Weight loss over last 7 days: ___%	0%	1%	2%	3%	4%	5%
Number of Rx's for nausea/vomiting	0	1	2	3	4	5+
	0 pts	**1 pt/answer**	**2 pts/answer**	**3 pts/answer**	**4 pts/answer**	**5 pts/answer**
TOTAL each column = (#answers in column) x (# points for each answer)	0	_____	_____	_____	_____	_____
TOTAL for ALL columns: ______		**None/Mild ≤ 19**		**Moderate 20-32**		**Severe 33-60**

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Weight Loss % = (Amount lost ÷ Pre-pregnancy weight) x 100

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Reprints:
www.HelpHER.org/tools

HER HG FACTS

There's nothing quite like the excitement and anticipation experienced by most mothers-to-be. For many women, however, the joy of pregnancy is destroyed by Hyperemesis Gravidarum (HG), a debilitating and potentially fatal disease with no definitive cause or cure. Due to inadequate research, HG is medically misunderstood, misdiagnosed and mistreated. Its physical symptoms are often debilitating and traumatic. Its emotional impact is just as great, and can leave women feeling depressed and alone as they struggle to cope with residual effects ranging from lost jobs and escalating medical bills, to strained personal relationships and long-term health issues for both mother and child. The ***Hyperemesis Education & Research Foundation (HER Foundation) is the leading organization*** *raising public awareness, collaborating on research, and providing education, advocacy and support globally for 1000's managing HG.* ***HER is the voice of HG****.*

About Hyperemesis Gravidarum (HG)

- HG is a pregnancy disease **marked by rapid weight loss, malnutrition and dehydration**, due to unrelenting nausea and/or vomiting with potential long-term consequences for mother and child.
- HG remains the **leading cause of hospitalization** in early pregnancy and is second only to preterm labor as the most common cause overall during pregnancy (ACOG, 2004).
- Total incidence of HG is undetermined but estimated at **2-10%** (Zhang, 1991; Czeizel, 2003).
- HG's **cause is likely related to elevated levels of placenta and appetite regulators, GDF15 and IGFBP7**, which are abnormally high in HG pregnancies (https://youtu.be/M1G6cdgonlE) most likely due to genetics and possibly other factors (Fejzo, 2018).
- HG contributes to **over 375,000 ER/hospital discharges** in the US annually (HCUP, 2012).
- Despite available medications shown to be low risk and effective at decreasing the severity of HG, many women are **denied treatment** (Kouzi, 2003; Carstairs, 2016; Fejzo, 2016; McParlin, 2016).
- Approximately 34% of HG pregnancies result in **miscarriage, stillbirth or termination** in part due to delayed or inadequate treatment of HG (Almond, 2016; Poursharif, 2007).
- Contrary to current medical opinion, HG **recurs in over 80 percent** of women, and **persists** throughout pregnancy in nearly 40 percent (Fejzo, 2011).
- Approximately 75% of HG women report reducing the number of **future pregnancies** rather than risk serious complications to themselves or their unborn children (Poursharif, 2008).
- HG is also associated with poor fetal/child outcomes including a 4-fold increased risk of **preterm birth** and a 3-fold increased risk of **neurodevelopmental delay**, an increased risk of significant **cognitive and behavioral disorders** (Fejzo, 2013; Fejzo, 2015), as well as **chronic illness** in later life due in part to maternal malnutrition (McMillen, 2005) and stress (Van den Bergh, 2005).
- HG, especially inadequately treated, increases the risk of a **low-birth-weight** neonate (Paauw, 2005), as well as prenatal and postnatal complications for both mother and child (Peng, 2007; Tian, 2016).
- Most women with HG are **unable to maintain employment** and/or care for their families during early pregnancy, and some throughout their pregnancy (O'Brien, 1992; Meighan, 2005; Poursharif, 2008).
- Professionals often **dismiss or fail to recognize the seriousness of HG**, thus limiting or delaying treatment (Munch, 2002), contributing to the development of **PTSS**, anxiety, depression, and other mental health concerns that may persist beyond pregnancy (Poursharif, 2008; Christodoulou-Smith, 2011).

About the HER Foundation

The HER Foundation is the leading 501(c)(3) not-for-profit organization for HG **education, advocacy, and support,** and the only one researching HG collaboratively with top universities. Founded in 2003 by fellow HG survivors Kimber MacGibbon, RN, and Ann Marie King and her husband Jeremy, the foundation serves as a voice for HG sufferers and their families. Its website (**HelpHER.org**) is the leading source of HG information, and together with social media and direct contact, HER engages well over a quarter of a million worldwide visitors annually. *Each year, support and resources provided by the HER Foundation and its volunteer network help improve the health and prevent the loss of mothers and babies around the world.*

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