

Drawing from vast bodies of clinical, epidemiological, endocrinology and nutrition biochemistry literature, Susan B. Dopart clearly explains the causes and consequences of gestational diabetes and what expectant mothers can do to promote better pregnancy and neonatal health outcomes. Her prose is illuminating, jargon-free and comprehensive. By making the underlying science more accessible, she educates and motivates positive lifestyle changes from a solid foundation of clinical knowledge and research.

Michelle A. Williams, ScD  
Professor of Epidemiology, University of Washington

.....

This book is truly a gem and I wish all pregnant women could have a copy! Susan B. Dopart has written a book that contains all the latest information to help women with gestational diabetes. It dispels fear, informs with the most current research and encourages women to take charge of their health through good nutrition and exercise. It is simple, concise and empowering and will set those who read it on a course for good health for the rest of their lives.

Deborah Frank, CNM  
Midwife, Beverly Hills, California



HEALTHY YOU, HEALTHY BABY : a mother's guide to gestational diabetes

DOPART



# HEALTHY YOU HEALTHY BABY

*A mother's guide to gestational diabetes*



By the Doctor's Dietitian  
**Susan B. Dopart, MS, RD, CDE**

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**To our daughter Grace Anne.  
You could not be a part of our lives,  
but you are my little angel who helps me  
support bringing healthy babies into this world.**

Edition 1, First Printing: April 2012

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 **SGJ Publishing**  
Santa Monica, California

Publisher's Cataloging-In-Publication Data  
(Prepared by The Donohue Group, Inc.)

Dopart, Susan B.

Healthy you, healthy baby : a mother's guide to gestational diabetes / by Susan B. Dopart. -- [1st ed.].

p. : ill., charts ; cm.

"By the Doctor's Dietitian."

Includes bibliographical references and index.

ISBN: 978-0-615-51825-1

1. Diabetes in pregnancy--Popular works. 2. Pregnancy--Nutritional aspects--Popular works. 3. Pregnant women--Health and hygiene--Guidebooks. I. Title.

RG580.D5 D67 2012  
618.364/6

## A Note to Readers

*The information in this book is not intended or implied to be a substitute for professional medical advice, diagnosis or treatment. All content in these pages -- including text, charts, illustrations, graphics and photographs -- is for general information purposes only.*

*You are encouraged to confirm any information obtained from or through this book with other sources, and to review all information regarding any medical condition or treatment with your physician or healthcare professional.*

*Never disregard professional medical advice, forego or delay seeking medical treatment because of something you have read in this book.*

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# Foreword

Dear reader,

*Gestational diabetes mellitus* (GDM) has become one of the major medical complications among pregnant women. On average, about one out of five American women develop gestational diabetes. However, the rates may be doubled among Asian or Hispanic women, obese women, or among women with high weight gains, especially in the early weeks of pregnancy.

Learning how to prevent GDM, or how to manage the disease if you have already been diagnosed, is the most important step you can take.

GDM has been treated by diet for more than 125 years. Today, diet is the first choice for managing blood glucose levels. Many women control their blood glucose levels by eating healthy foods so they do not need any medications. Registered dietitian Susan B. Dopart, one of my former students at UC Berkeley, has a personal interest in diabetes as it runs in her family. She has lived this diet and is sharing her own experiences with you.

As you read through the book, you will quickly learn how to adjust your usual pattern of eating to a more healthy one by adding some new foods and eliminating others. Also, your entire family can eat just like you, and there is no need to change your diet after the baby is born. Sometimes women who have GDM develop diabetes after their pregnancies. The diet described in this book will reduce your risk of diabetes throughout your life.

It is not easy to change your eating habits, and you don't have to do it all at once.

You might start by focusing on one aspect of your diet such as fruits and vegetables one week and then another the next week. Knowing why these changes benefit your health and that of your baby makes it a lot easier to shift your diet.

Remember, you are not alone in managing your health. You have a team of healthcare providers to help you. But, you are the head of your healthcare team, and you are the one who will benefit by making positive changes in your diet.

Finally, don't forget to enjoy your pregnancy. With this book in hand, you have started a journey of improving your health and that of your entire family. As you shift to more healthy foods, congratulate yourself for a job well done.

Janet C. King, PhD  
Senior Scientist, Children's Hospital Oakland  
Research Institute Professor, UC Berkeley and UC Davis

# Acknowledgements

This book was born out of my passion for helping women create healthy lifestyles they can pass on to future generations. There were many who helped bring this book to life.

I want to thank my colleagues who gave their time in editing, feedback and encouragement: Ruth Garland, RN, CDE; Erika Demonsant, RD; and Pamela Lee, MPH, RD, CDE.

Besides encouragement and editing, Deborah Norman-Lesin, RN, BSN, CDE, was an inspiration for this book and supported me throughout the entire process.

To Janet King, PhD, for her important foreword for this book, for starting me on the road to understanding the biochemistry of nutrition, and never wavering on the science of food.

Many thanks to Deborah Frank, CNM, for her encouragement, support and endorsement for this book and the nurturing care she gives in helping to bring healthy babies into the world.

To Michelle Williams, ScD, for her support in endorsing this book and all the scientific research she provides to ensure women with GDM get the best care they need as a result of her research.

Great appreciation to Sheryl Ross, MD, for her encouragement and for trusting me with the care of her GDM patients. I value our partnership and shared purpose to create an environment for healthy babies.

Special thanks to the women who contributed their stories to help other women with GDM: Jessica, Leslie, Wendy and Andie.

To Joni Donnella for contributing her time and beautiful bump

for the front cover. Special thanks to Jonathan Davino, Josh Sanseri, Sam Nazarian, Dante Dauz and Andrew Bick for help with photography and the book cover. Special thanks to Rachel Morrison, Ramona Trent Photography and JEM Photography for contributing some beautiful pictures.

Special thanks to Debra Main for her amazing support, wisdom and assistance with design, editing and clarity with direction for this book.

I want to thank my parents, Evangeline and Joseph Dopart, for editing this book and providing support for all my endeavors.

To Jessica Liu Brookshire for her incredible talent for design. She foresaw my design for this book before I even conveyed it to her. With her talent, the pages of this book came to life.

I want to especially extend gratitude to my editor, Catherine Wire Roberts, for her dedication to my writing, her beautiful spirit and innovative style. She is truly the Renaissance woman in every respect. Despite having a demanding day job and family commitments, she always makes time for my projects and books. There are really no words to express my appreciation to her.

And lastly, I thank my partner in life, Jeffrey Batchelor, for his encouragement in writing this book and his unwavering assistance with editing, photography and support. Jeffrey had the vision of me writing this book before I ever knew it, and he encouraged me through every step of the process.

Susan B. Dopart, MS, RD, CDE

# What should I do now that I have Gestational Diabetes?

If you are holding this guide in your hands, you probably have more questions than answers right now:

*Is my baby going to be okay?  
Was it something I was eating?  
Did I do something wrong?*

Gestational diabetes (GDM) is a complex endocrinology disorder caused by multiple factors. It may be in your genes, your weight prior to pregnancy, what you ate, how active you are, etc. However, trying to solve this mystery is not going to help you now and may even hinder you from getting the information and treatment you need. It is more important to focus on **WHAT TO DO** next to keep you and your baby healthy for the remainder of your pregnancy.

## My Approach

Diabetes runs strong in my genes. Although I have not had diabetes, I do everything possible to avoid getting it. I became a dietitian to help others avoid the occurrence and consequences of diabetes. I attend numerous diabetes conferences to make sure I am up-to-date on medical and nutritional information that will help me assist my patients.

With the goal of the best possible outcome for you and your baby, this book contains current, cutting-edge information on GDM from leading physicians and researchers from all over the world.

Most importantly, I will tell you exactly what you need to do to keep your blood sugars balanced and normal. With blood glucose testing, food combinations and exercise, I hope to help you eliminate your need for medications.

Current research shows that women with GDM who are successfully treated have outcomes equal to women without GDM. How's that for some good news? In addition, 70 percent of women with GDM can develop type two diabetes within 10 years if their diets or lifestyles remain unchanged. Therefore, a lifestyle change now is an opportunity to lower your risk of future diabetes - a blessing in disguise!

As you go through this book, you will hear from women with GDM. I hope their stories will encourage you and help you realize that taking steps to help your baby will also help your own future health. Changing your lifestyle can influence the health of future generations of women and children in your own lineage.

So, put aside your worries, and together we will embark on a journey to better health, a successful pregnancy and a healthy baby.

Susan B. Dopart, MS, RD, CDE

# 1 The GDM Diet

Taking the best care of your child's future health starts with what happens in the womb. What you consume during pregnancy can determine whether your child:

- Is born too small or large (*called small for gestation or large for gestation*)
- Starts off with a predisposition toward normal weight versus obesity
- Is predisposed to having diabetes, heart disease or cancer
- Has a high cholesterol or triglyceride level at birth leading to fatty liver

These realities show how self-care through diet and exercise is of the utmost importance.

A baby is programmed in the womb with a certain set of genes or DNA, but how he or she responds to that DNA can be influenced by your diet and level of self care.

*Epigenetics* is a term scientists use to describe their point of view that genes are controlled beyond what is encoded in DNA. As a mother, you have a powerful impact on the future health of your child – both a wonderful and a daunting responsibility. You can't change your genes, but you can control your diet.

The diet for GDM is a healthy way of eating and differs slightly from the diet for other types of diabetes. The goal of the GDM diet is to keep blood glucose levels normalized during pregnancy. Hormones during pregnancy can cause changes in your blood sugars, thereby needing adjustments in the diet.

No doubt you've heard of carbohydrate, protein and fat. These three macronutrients and how they are combined determine

whether your blood glucose levels will be normal or elevated. To better understand what happens to your body, let's first talk about **insulin resistance** – the underlying reason for GDM.

## Understanding Insulin Resistance

Normally insulin, a hormone released from the pancreas, enables cells to remove glucose (sugar) from the bloodstream to be used as energy (see diagram on page 16). Approximately one-third of the population inherits a trait whereby their cells respond improperly to insulin. This results in higher circulating levels of blood glucose, which causes the pancreas to release ever-increasing amounts of insulin in an attempt to normalize blood glucose levels. This can eventually lead to diabetes.

Simply put, insulin is the key that unlocks the cell for sugar to get in, which in turn, enables your body to use the food you consume. However, somewhere along the line, the key either gets stuck or has difficulty getting into the lock. Or, if it does get in, it cannot turn the lock. Therefore, it was given the term "resistant." If your body develops a resistance to insulin, you are not able to utilize the food you take in. This can increase your fatigue and cravings for ever-greater amounts of carbohydrate, which compounds the problem.

This resistance sets up a cascade of reactions in the body that are not in your favor. It is as if the sugar is outside the cell knocking to get in. When it cannot get in, your body keeps craving more carbohydrate. Sort of like when you eat one slice of bread then find yourself wanting the whole loaf.

## Insulin Resistance & Pregnancy

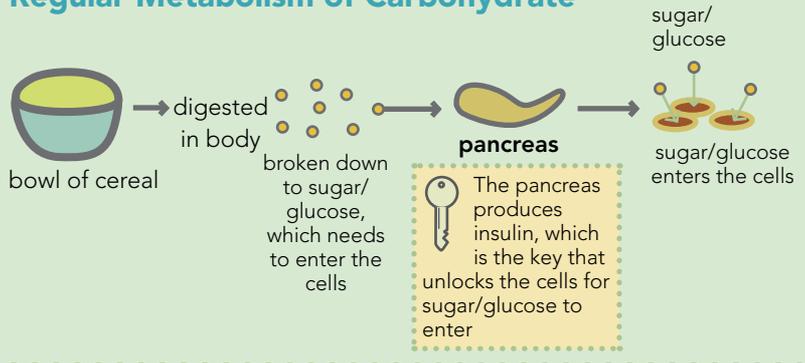
Since pregnancy is a state of insulin resistance, many women are susceptible to blood glucose changes. Scientifically, *gestational diabetes mellitus* is defined as carbohydrate intolerance of variable severity with onset of first recognition during pregnancy.<sup>1</sup>

As you get farther along in your pregnancy, the placenta grows, which increases the level of insulin resistance with each week. At about 20-24 weeks gestation, the hormones the placenta makes (estrogen, cortisol, progesterone, and human placental lactogen) begin to partially block the action of insulin. The body responds by making more insulin, but sometimes it is not enough, and the result is gestational diabetes.

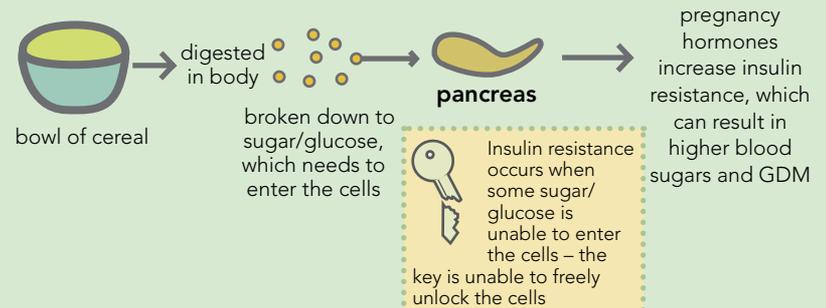
Women who already have adult onset, or type two diabetes, can have higher levels of insulin resistance with resulting higher blood glucose levels. They may need to alter their diets at this point in the pregnancy or increase their oral medications or insulin dosages due to these metabolic changes.

How can we control or quiet insulin resistance to help with normalizing your blood glucose levels? Let's start with the balance of what you are eating.

### Regular Metabolism of Carbohydrate



### Insulin Resistance leading to Gestational Diabetes



### Carbohydrate: Good Carbs vs. Bad Carbs

Understanding the difference between carbohydrates is essential to learning how to eat healthfully. If you are eating food in its purest form – i.e. food which is not processed - then it is likely that you are eating a healthy form of carbohydrate.

Examples of foods that contain healthy forms of carbohydrates include:

- fruits and vegetables
- low-fat plain dairy products
- nuts and seeds
- whole grains such as brown rice, quinoa and buckwheat
- beans/legumes

Examples of foods that contain processed and low-fiber carbohydrates:

- pasta, potatoes, white rice
- white bread, bagels, English muffins and muffins
- crackers, chips, pretzels
- most breakfast cereals
- pancakes and waffles
- ready-made desserts