CAN AN INTERNET PROGRAM HELP MOTHERS LOSE WEIGHT AFTER PREGNANCY?

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Gaining weight in pregnancy is important for the health of the mother and child. However, after having a baby, if a mother keeps the extra weight she gained during pregnancy, this can be harmful to her long-term health. This study tested whether an Internet weight-loss program could help mothers to lose weight after having a baby. We worked with WIC, which is a program that gives low-income families food and support. Half of the women in the study received regular WIC and half received WIC plus an Internet weight-loss program. We found that the Internet program helped mothers lose five more pounds than regular WIC, and it also helped more mothers get back to the weight that they were before pregnancy. WIC serves half of all US mothers; the Internet weight-loss program in WIC could help many women get closer to the weight they were before pregnancy and avoid weight-related diseases later in life.

INTRODUCTION

Pregnancy is a miraculous time when a woman's body goes through major changes to support the life of a growing baby. One of the most obvious changes is weight gain. Why do women gain weight during pregnancy?

One reason, of course, is because they carry extra weight from the growing baby. However, pregnant women also carry extra weight from the **placenta**, which is a temporary organ that gives nutrients from the mother to the baby. During pregnancy, mothers also carry extra weight from water, blood, protein, other fluids, and fat. Women need all of this extra weight to support their baby's growth and health (see Figure 1).

After the baby is born, does all that extra weight go away? Not exactly. After having a baby, women immediately lose the weight from the baby and from the placenta. After about 6 weeks, they lose the extra water, other fluids, blood, and protein. However, the extra fat that was gained during pregnancy often sticks around after the baby is born. It can be hard for women to lose the extra fat after pregnancy. Having body fat is important for good health but keeping on extra fat from pregnancy can be harmful. Research has shown that mothers who keep on extra fat after having a baby are more likely to have serious health problems later in life. Some of those health issues include heart problems (called "**cardiovascular disease**") and problems turning food into energy (called **type 2 diabetes)** [1]. These are serious diseases. So, it's important to find ways to help support mothers who have just had babies, to make sure that they get back to the weight they were before pregnancy and do not keep on any extra fat.

Many women do not lose the extra fat gained during pregnancy. Of the four million women who give birth in the United States every year, about one million experience extra weight gain after pregnancy [2]. Some women

Example of Weight Gain in Pregnancy

Baby:
6-8 pounds
(3-4 kg)

Placenta:
1-2 pounds
(0.5-1 kg)

Womb:
1-2 pounds
(0.5-1 kg)

Fluid in the womb:
2-3 pounds
(1-1.5 kg)

Blood:
3-4 pounds
(1.5-2 kg)

Protein and fat storage:
8-10 pounds
(4-5 kg)

Body fluids:
3-4 pounds
(1.5-2 kg)

Other:
1-2 pounds
(0.5-1 kg)

Total weight gain: 25-35 pounds

FIGURE 1

are more likely to keep on extra weight than others. Women who do not have a lot of money and who sometimes do not have enough money to buy food are more likely to keep on extra weight after having a baby and develop **obesity**.

What makes losing that extra fat so tough? To lose the extra fat, mothers have to eat less and exercise more. That can be difficult after having a baby! New mothers are often tired from waking up several times during the night to feed their babies. Mothers may find themselves eating at different times of the day and eating more food than usual. New mothers may also spend more time sitting and less time exercising, because they are feeding the baby and trying to rest. Stress can also make it tough to lose the extra fat. After having a baby, a mother may take time off from work to care for the new baby. Less work can mean less money for the family, which is stressful. Caring for a baby takes time, and mothers may not have the time to plan healthy meals and exercise.

HELPING MOTHERS LOSE WEIGHT AFTER THEY GIVE BIRTH

There are many programs that can help a person lose extra fat. These are called "weight-loss programs" and they are like classes—groups of people meet and work with a counselor who teaches and supports them as they strive to eat healthy, exercise more, and lose weight. These programs work well for most people but have not worked very well for new mothers. Mothers often start these programs but then drop out because they cannot make it to the classes; new mothers have schedules that change every day based on their babies' needs. Also, weight-loss programs can be expensive and might require mothers to hire babysitters too. The expense can stop some mothers from joining weight-loss programs altogether. So, there is a big need to discover a weight-loss program that is made just for new mothers, that does not cost a lot of money, and that motivates mothers to stay in the program, lose the extra fat, and get back to the weight they were before pregnancy.

FIT MOTHERS/MAMAS ACTIVAS: USING THE INTERNET TO HELP MOTHERS LOSE WEIGHT

We decided to test whether a weight-loss program that was delivered over the Internet on a website could help new mothers lose the extra fat they gained during pregnancy. We thought that if a weight-loss program were delivered on a website, new mothers could decide when to receive the program and not have to worry about leaving their babies to go to a weight-loss program. An Internet program could be received from the comfort of

home. A mother could pause the program if her baby were to start crying and resume when the baby was settled. The Internet costs money, but it still would not cost as much as a typical weight-loss program. So, we wanted to find out if this approach would work to help mothers lose weight after having babies.

We worked with an organization known as WIC. WIC stands for "Women, Infants, and Children" Special Supplemental Nutrition Program. This is a US government program that helps mothers and children by providing free food and counseling in healthy eating for low-income pregnant women and children under the age of five. However, WIC does not give mothers weight-loss counseling. Since low-income mothers are most likely to keep on extra weight after having babies, we thought working with WIC would be a wonderful idea.

Our study's hypothesis was that an Internet weight-loss program provided through WIC would produce more weight loss than the regular WIC program over 12 months, in women who kept on extra fat after having babies.

WHO WAS IN THE STUDY?

We recruited 401 women from 12 WIC clinics in CA, USA. Even though the women were all low income, most already had computers and Internet in their homes. If they did not, we gave those to them. Women joined the study when they were about 5 months postpartum—which means that their babies were about 5 months old. When they joined the study, mothers had all reported keeping on extra fat since having their babies. On average, the mothers were 17 pounds (7.7 kg) heavier than they were before having their babies. When they joined the program, most mothers were still breastfeeding. Also, most of the women in the study were Hispanic and many (about 40%) spoke only Spanish.

At the beginning of the study and after 6 and 12 months, we measured women's weight and waist circumference. We also asked the women to fill out a survey asking about their eating and exercise. We paid each woman $25 for completing these measures at the beginning of the study and at 6 months and paid them $50 for completing the 12-month measures. The money was given to them because we wanted to thank them for the time it took (about 60 min) to complete the measures as part of our study.

OUR INTERNET PROGRAM VS. REGULAR WIC

We wanted to know if our program would be better at helping women lose weight than the services that WIC usually provides. If our program was not

better than regular WIC, then, there would be no point in having our program! So, our study included 12 WIC clinics in California. A computer randomly picked six clinics to receive the Internet weight-loss program and six clinics to receive the regular WIC program.

Women in the regular WIC program saw their WIC counselors about every 1–3 months and received free food and information about healthy eating and nutrition.

Women in the new Internet weight-loss program received everything that the women in regular WIC received. They also received an Internet-based weight-loss program. The program was in English and Spanish (Figure 2) and had lots of information in it! See Table 1 to check out everything that the website offered.

The women in the new weight-loss program also received text messages on their phones a couple of times every week. The text messages reminded and encouraged the mothers to stay motivated to lose the extra fat from pregnancy. The women could also attend monthly group meetings at WIC if they wanted extra support or needed help using the website.

RESULTS: DID OUR INTERNET PROGRAM HELP MOTHERS LOSE THE EXTRA WEIGHT?

We found that mothers in the Internet weight-loss group lost five pounds more than mothers in the regular WIC group at the end of the 12-month program! The Internet weight-loss group lost 7.0 lbs (3.2 kg) and the usual WIC group lost 2.0 lbs (0.9 kg). This difference between the groups was big enough that it could not have just happened by chance.

We also found that the Internet weight-loss program helped more women get back to the weight that they were before pregnancy; 32.8% of women in the Internet weight-loss group were back to their original weight, compared with 18.6% of mothers in the usual WIC program. Also, mothers who received the Internet weight-loss program reduced their waist size by 1.6 inches (4.0 cm), which was 1.1 inches (2.8 cm) more reduction than mothers in the usual WIC program. These differences were also big enough that they could not have just happened by chance.

WHAT DOES IT ALL MEAN?

This study is the very first to show that an Internet weight-loss program can help women lose weight after having babies. The Internet weight-loss program helped low-income women from all different backgrounds.

FIGURE 2

Women who received the Internet weight-loss program lost five more pounds than women in the usual WIC program. That may not seem like a lot, but even that amount can lower risk of several diseases later in life [3]. The weight-loss

TABLE 1

The Fit Mothers/Mamas Activas website offered tools to help mothers get back to the weight they were before pregnancy.

The website had:

- A weekly lesson to read/video to watch that gave instructions on ways to eat healthy, exercise, and lose weight.
- An online "tracker" where women could record their daily food and drinks and also keep track of their daily minutes of exercise.
- A resource area that provided several recipes and information about places where the women could exercise with their babies.
- A "chat room" where the women could write questions and comments to each other and ask for support.
- "Diaper Points." These points were given every time a woman visited the website and tracked her eating and activity. Women also got points for going to WIC meetings. Women could exchange the points for prizes, like diapers, books, creams, and other small gifts for mothers. Diapers points were designed to motivate women to visit the website.
- A weekly episode of a soap opera. This entertainment was designed to keep women motivated to view the website at least once per week.

TABLE 1

program also reduced women's waist circumferences, which can also help promote long-term health.

WIC serves half of all mothers in California and 54.8% of mothers in the United States as a whole. If the Fit Mothers/Mamas Activas program becomes part of the regular WIC program, it could help many women get closer to the weight they were before pregnancy and to avoid serious diseases later in life.

ORIGINAL SOURCE ARTICLE

Phelan, S., Hagobian, T., Brannen, A., Hatley, K. E., Schaffner, A., Muñoz-Christian, K., et al. Effect of an Internet-based program on weight loss for low-income postpartum women a randomized clinical trial. *JAMA* (2017) 317 (23):2381–91. doi:10.1001/jama.2017.7119

REFERENCES

1. Rooney, B. L., Schauberger, C. W., and Mathiason, M. A. 2005. Impact of perinatal weight change on long-term obesity and obesity-related illnesses. *Obstet. Gynecol.* 106(6):1349–56. doi:10.1097/01.AOG.0000185480.09068.4a
2. Rasmussen, K. M., Yaktine, A. L., and Institute of Medicine (US). 2009. *Weight Gain During Pregnancy: Reexamining the Guidelines.* Washington, DC: National Academies Press.
3. Wing, R. R., Lang, W., Wadden, T. A., Safford, M., Knowler, W. C., Bertoni, A. G., et al. 2011. Benefits of modest weight loss in improving cardiovascular risk factors in overweight and obese individuals with type 2 diabetes. *Diabetes Care* 34(7):1481–6. doi:10.2337/dc10-2415

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My interests include baseball, football, fishing, the outdoors, and reading. For the future, I am interested in becoming a conservationist or a scientist. I am particularly interested in trout and their habitats and the whirling disease that has impacted our Canadian lakes and rivers. I am an avid fisherman and am currently learning how to fly fish. I love science and I am very curious about the world around me.

AUTHORS

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I recently received my undergraduate degree from California Polytechnic State University, San Luis Obispo. As an undergraduate student and now as a Research Assistant, I have studied ways to help mothers manage their weight and health before, during, and after pregnancy. I will soon begin graduate school where I will be working to become a Physical Therapist. Away from studies, I also enjoy hiking with my dogs, playing video games, and hanging out with friends.

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I'm a Clinical Health Psychologist and Professor at California Polytechnic State University, San Luis Obispo. I work with a research team. We design and test lifestyle programs to help people live an active lifestyle, eat healthy foods, and maintain a healthy weight. We study whether and how lifestyle programs can prevent and reduce obesity in the time surrounding pregnancy. Outside of work, I like to hang out with my three children, spend time with other family and friends, play guitar, and read books. *sphelan@calpoly.edu