

Physical Activity During Pregnancy: A Prescription for Improved Perinatal Outcomes

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ABSTRACT

Physical activity during pregnancy has significant health benefits for mother and baby that extend beyond the perinatal period. However, the majority of women do not achieve recommended levels of physical activity in either time or intensity. Physical activity tends to decrease even further as pregnancy progresses. Pregnant women have frequent contact with health care providers and may be motivated to engage in behavior changes that improve health. Nurse practitioners should educate women about the benefits of regular physical activity and help them overcome the barriers to achieving recommended physical activity levels to improve perinatal outcomes.

Keywords: physical activity, pregnancy, prenatal, guidelines, promotion

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INTRODUCTION

A woman with an uncomplicated pregnancy is likely to see her prenatal care provider at least 14 times during her pregnancy and postpartum period. Pregnancy care is often the most concentrated contact women of reproductive age have with the health care system. During pregnancy, women may be motivated to change behaviors such as quitting smoking or improving nutrition. Pregnancy may be a time when new patterns of behavior are established to improve maternal and fetal health.¹ The American Congress of Obstetrician Gynecologists and United States Department of Health and Human Services (ACOG/DHHS) recommends pregnant women achieve at least 150 minutes of moderate-intensity physical activity weekly throughout pregnancy.² Women may safely engage in vigorous physical activity throughout pregnancy as well.³ Nurse practitioners (NPs) are well positioned to advise women about the benefits of physical activity, how to safely engage in physical activity, and encourage women to achieve and maintain sufficient levels of physical activity throughout the prenatal period. NPs should also encourage women to maintain a physically active

lifestyle postpartum while adapting to the realities of caring for a new child. Counseling women may include dispelling myths about perceived dangers or contraindications to physical activity. The purpose of this study is to review the benefits of physical activity, risks of sedentary behavior, patient safety, contraindications, and best practices to promote physical activity during pregnancy.

BENEFITS OF PHYSICAL ACTIVITY DURING PREGNANCY

Being physically active during pregnancy has many health benefits for mothers. The ACOG/DHHS recommends pregnant women achieve at least 150 minutes of moderate-intensity physical activity weekly throughout pregnancy.² Women may safely engage in vigorous physical activity throughout pregnancy as well.³ Those women who engage in regular physical activity have less pregnancy discomfort, report less stress, and have improved mood.⁴ They also have improved pain tolerance, shorter labors, less total weight gain, and less fat mass gain.^{5,6}

Engaging in sufficient physical activity is also associated with decreased rates of preeclampsia and

gestational diabetes.^{7,8} Preeclampsia is a cause of maternal multiorgan system failure and death and is estimated to affect 3%–5% of pregnancies in the developed world.⁷ Rates of preeclampsia are increasing and women with a history of preeclampsia are twice as likely to develop early-onset cardiovascular disease.⁹

Rates of gestational diabetes mellitus are increasing worldwide.¹⁰ Gestational diabetes is one of the most common complications of pregnancy.⁸ Women diagnosed with gestational diabetes benefit significantly from adequate physical activity. Compared with a diet-only approach to achieve glycemic control, women who also incorporate physical activity need less insulin and may avoid the need for insulin entirely.¹¹ Engaging in sufficient physical activity can help women avoid pregnancy complications as well as the sequelae associated with diseases of pregnancy later in life.

Sufficient physical activity has numerous fetal benefits that extend well beyond pregnancy. Fetal benefits include fewer preterm and cesarean births and fewer cases of excessive fetal growth.¹² Babies whose mothers engage in regular moderate or vigorous physical activity do not have an increased risk of preterm birth.¹² The fetuses of women who engage in structured aerobic or resistance training have a 15% decreased risk of birth by cesarean.¹³ A recent meta-analysis showed that women who followed a structured exercise program during pregnancy had a 31% decreased likelihood of giving birth to a large-for-gestational-age baby and no effect on the risk of having a small-for-gestational-age baby.¹² Infants of women who engage in adequate physical activity during pregnancy may avoid downstream health impacts related to excessive maternal gestational weight gain and gestational diabetes, which includes the lifetime risk of becoming overweight or obese and type 1 and 2 diabetes.

RISKS OF SEDENTARY BEHAVIOR DURING PREGNANCY

Sedentary behavior is associated with serious short- and long-term risks for mothers and babies. Women who are sedentary during pregnancy are at increased risk for gestational diabetes, preeclampsia, excessive gestational weight gain, complications during labor

and birth, and postpartum weight retention.² Sedentary behavior is also associated with postpartum mood disorders.¹⁴ Women who gain weight beyond what is recommended by the Institute of Medicine are unlikely to return to their pre-pregnancy body mass index during the interconception period and enter subsequent pregnancies overweight or obese, leading to more weight gain and increased risk for poor perinatal outcomes with future pregnancy.¹⁵ Infants exposed to excessive gestational weight gain or obesity in utero have a 40% greater risk of childhood obesity.¹⁶ Women should be counseled that there are potentially serious consequences to sedentary behavior during pregnancy.

MYTHS ABOUT PHYSICAL ACTIVITY DURING PREGNANCY

Despite the clear benefits of adequate physical activity and significant risks to sedentary behavior, only about 15% of women achieve recommended levels of physical activity weekly during pregnancy.¹⁷ There are many factors that contribute to low rates of activity, including erroneous beliefs about the amount and types of physical activity associated with improved perinatal outcomes. Common misconceptions include beliefs that physical activity may cause miscarriage, restrict fetal growth, cause preterm birth, and lead to musculoskeletal injury.² Other misconceptions, such as the belief that vigorous exercise is harmful, raises core body temperature, or contributes to preterm birth, have been disproven.¹⁸ Qualitative studies examining women's attitudes about physical activity suggest women are concerned about safety and believe, incorrectly, that activities of daily living are sufficient physical activity.^{19,20}

PHYSICAL ACTIVITY RECOMMENDATIONS DURING PREGNANCY

The ACOG/DHHS report further recommends pregnant women achieve at least 150 minutes of moderate-intensity physical activity weekly and that women may safely continue vigorous physical activity throughout pregnancy.^{2,3} Moderate-intensity physical activity is defined as effort sufficient to raise heart and respiratory rates while retaining the ability to speak in short sentences.²¹ Women should be

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