

# Pregnancy and the Postpartum Period - How Resistance Training Can Help

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ABSTRACT

The objective of this article is to describe the importance of maintaining a resistance training exercise regimen throughout pregnancy and during postpartum. To emphasize this statement, I will be delving into the common misconceptions of exercising during pregnancy and postpartum along with safety considerations to be aware of. Following this, there is also a section dedicated to how exercising during this period of anatomical change can help the patient's psychological wellbeing as well. From here, the reader can expect to learn of common pain that occurs during the pre and postnatal period and how resistance training can alleviate said pain. There will be reasoning as to why it is important to strengthen the lower back, core, and pelvic floor. Specific resistance training exercises that can aid in developing strength will be provided. At the end of the article, exercise science professionals will be more knowledgeable regarding how resistance training can help those during pregnancy and postpartum. Reading this discourse will allow them to be more helpful and informational during sessions with clients who fall into this patient population.

## **I. Introduction**

Physical activity (PA) is an extremely important aspect that should be a factor in every person's day to day life. Depending on the resistance training (RT) program, there is an opportunity to create an increase in overall strength, muscular endurance, hypertrophy, or power in an individual. RT consistently remains an important factor and should continue to be incorporated throughout each phase of a person's life. This includes the natural phases of pregnancy and postpartum that many individuals experience. Maintaining PA during the pre and postnatal period arguably becomes even more beneficial to the individual because of the array of anatomical changes the body experiences. Common conditions that pregnant clients can experience during pregnancy are increased levels of depression, low back pain, and diastasis rectus abdominus. By engaging in exercise during pregnancy, these conditions among others may be avoided completely or diminished.<sup>13</sup> Similarly, maintained or increased PA during pregnancy and postpartum has proven to be associated with delivering healthy newborns, shorter labor length, and allowing the accuracy of the estimated delivery date to increase.<sup>13</sup>

Low-moderate intensity PA during pregnancy and the postpartum period is beneficial for most clients. This article will look at the positive impact RT specifically has during these anatomical phases.

## **II. Safety Considerations and Precautions**

Although proven to be beneficial for both the mental and physical maternal and fetal wellbeing, there are important safety considerations to understand before beginning or continuing PA during pregnancy and postpartum. Pregnant patients who have medical complications, such as obstetric risk factors, should be given a thorough clinical evaluation before beginning or continuing any form of PA during their pregnancy.<sup>1</sup> By following this

process, both the patient and the clinician are ensuring the wellbeing of the maternal and fetal health. If this process is not accurately followed, the safety and health of both parties are at risk.

The ACSM states that in order to maintain physical strength, all individuals in good health from ages 18-65 should engage in muscular strength or endurance PA for a minimum of two days per week.<sup>11</sup> Additionally, the ACSM recommends that healthy pregnant and postpartum adults should engage in moderate intensity aerobic PA five days a week for a minimum of 30 minutes.<sup>11</sup> Pregnant patients who are obese or those who were previously sedentary should progressively incorporate an exercise regimen instead of immediately adopting an intense, vigorous program.<sup>9</sup>

It is important to note that pregnant clients specifically should be encouraged to decrease exercise intensity while gradually increasing volume. This precaution is to prevent injury to the client due to the increase in joint laxity during pregnancy.<sup>5</sup> Another safety precaution to emphasize is the complete avoidance of the Valsalva maneuver during RT. This maneuver causes an increase in heart rate and blood pressure and in turn, can block necessary blood flow for healthy fetal development.<sup>5</sup> By gradually introducing an exercise program for this specific client population, this allows the body to naturally adapt to the deep physiological changes the body experiences during this time.



[Figure 1](#)

### III. Common Misconceptions

Unfortunately, pregnant populations have not always had access to reliable scientific studies regarding exercise during pregnancy and postpartum. There is a plethora of common misconceptions regarding RT during this period along with other forms of training as well. A large factor as to why I am focusing on this research is due to the multiple misunderstandings I have heard regarding RT during the pregnant and postpartum period. Many of these comments I have personally heard are from those who are able to become pregnant. This first-hand account emphasizes the importance of furthering this research for those exercise professionals who are looking to educate themselves and their clients.

By identifying and explaining the falsity of the misconceptions of RT during pregnancy and postpartum, there is hope that pregnant and postpartum clients may live a healthier and safer life during this phase of great anatomical change. One recurrent misbelief practitioners themselves frequently prescribe is bed rest.<sup>1</sup> By encouraging patients to increase sedentary behavior, there is a lack of active ambulation. From this, there may be a rise in weight gain, along with an increase in risk of gestational diabetes in obese, pregnant and postpartum individuals.<sup>1</sup>

There is a massive population of clients who strongly believe that there are more health-related drawbacks to PA during the prenatal and postpartum phase than true benefits. This misconception is shown through a study done with pregnant South African women. Participants were given an interview-led questionnaire that focused on factors within their socio-demographic, obstetric, maternal, and behavioral characteristics.<sup>2</sup> From this study it was observed that 64.5% participants believed PA increased body temperature and 56.5% believed

women should practice PA abstinence. Along with this, 82.7% and 85.7% believed that PA during pregnancy increases musculoskeletal discomfort and back pain, respectively.<sup>2</sup>

As aforementioned, the main purpose of this article is to provide information. I want readers to be able to offer this information to clients and patients so that they as well are given the opportunity to understand the falsity of these common misconceptions. To be well informed, is to be safe.

#### **IV. Psychological Benefits**

In general, safe PA allows for a plethora of benefits to be reaped both mentally and physically. Engaging in PA during pregnancy and postpartum can help maintain and/or improve maternal mental health. Pregnancy and the act of labor is a large, important life event. This phase in a person's life can be traumatic at times, which in turn can cause extensive maternal mental stress. On average, postpartum depression occurs one month post childbirth and occurs in 6.5-20% of women.<sup>7</sup> This is a staggering statistic. Because of how prevalent postpartum depression is, it is important to note that researchers observed that an increase in sport exercise and/or RT improves the overall maternal well-being.<sup>8</sup> More specifically, those who maintain an active lifestyle will statistically have a decrease in depressive symptoms throughout pregnancy and postpartum.<sup>6</sup> Based on this information, the relationship between PA and the risk of depression symptoms during these phases can be identified as inverse.

RT is an effective mode of exercise that prenatal and postpartum clients should consider engaging in. An example of a low-moderate intensity RT set that was proven to improve maternal mental health includes: warm-up, dual leg extension, dual leg press, dual arm latissimus pulls, dual leg curl, along with lumbar extensions and transverse abdominis focused standing

abdominal exercises.<sup>10</sup> To measure the exercise intensity, the Borg RPE scale (see figure 2) should be used. It was proven that by using this low-moderate intensity RT plan, prenatal mental energy will improve.<sup>10</sup>

20-Grade Scale	
6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	

The rating of perceived exertion scale. Reprinted with permission from org.<sup>19</sup>

[Figure 2: Borg RPE Scale](#)

## V. Physiological Benefits

### Pain Relief

During pregnancy, it is important to engage in PA that focuses on strengthening the lower back, core, and pelvic floor. Lower back pain is one of the most common symptoms of any pregnancy. This pain is centralized around the lumbar portion of the spine. At least 76% of pregnancies experience this lumbar pain.<sup>5</sup> Lumbar pain can feel debilitating at times which can

cause stress on the body and mind during pregnancy. This pain can seriously impact a client's daily life such as causing lack of sleep, or pain when standing and sitting. Additionally, severe lower back pain during pregnancy can cause a need for a leave of absence from work.<sup>5</sup> With this being said, there are ways to alleviate lower back pain during pregnancy through PA. Some exercises and/or stretches that can help alleviate this lumbar pain along with strengthening the pelvic floor are bird dog, double leg bridges/pelvic tilt, and cat-cow stretch.



Figure 3: Double Leg Bridge / Pelvic Tilt

One reason as to why it is beneficial to strengthen the core during the pregnancy and postpartum period is because of diastasis rectus abdominus (DRA). This injury is characterized as a midline inner-recti separation that is commonly caused in the supraumbilical portion of the body due to physical changes during pregnancy.<sup>14</sup> This muscle tearing is extremely common and occurs in 66-100% of pregnancies.<sup>14</sup> Because of this injury, it is crucial for pre and postnatal clients to strengthen and rebuild their torn abdominal muscles. By training the core musculature, pregnant clients will be benefiting from the overall strength gain in addition to counteracting the lower back pain they may be experiencing. Exercises such as monster walks, squats, clamshells, and side planks are all examples of movements that are low intensity and effective in



strengthening and rebuilding the core. Each of the aforementioned exercises mentioned in this section can be done with handheld weights such as kettlebells, dumbbells, resistance tubing/bands, or with the client's own bodyweight. Pregnancy causes the body to experience extreme anatomical changes and it is vital for clients to be able to be given the opportunity to fortify and strengthen their body through PA.

### Labor and Postpartum

Similarly to being able to relieve pain, PA is also able to aid in other physiological ways to benefit aspects of pregnancy. This includes the length of labor and a decrease in premature delivery risk.<sup>4, 12</sup> A study focusing on PA during pregnancy and its impact on labor and postpartum found that physically inactive women had the longest period of the first labor stage and physically active women had the shortest.<sup>3</sup> Performed studies have found that individuals who were active during their pregnancy had a much lower risk of preterm delivery than sedentary individuals.<sup>12</sup> It was also discovered that the entire length of the postpartum period is shorter in active individuals and was observed to last for four weeks.<sup>3</sup> This shortened postpartum period was due to the activity level of the individual prior to conception and the amount of activity during the third trimester.<sup>3</sup> Because PA has been proven to reduce the perceived negative aspects of newborn delivery, it is important for professionals to encourage clients to maintain an active lifestyle.

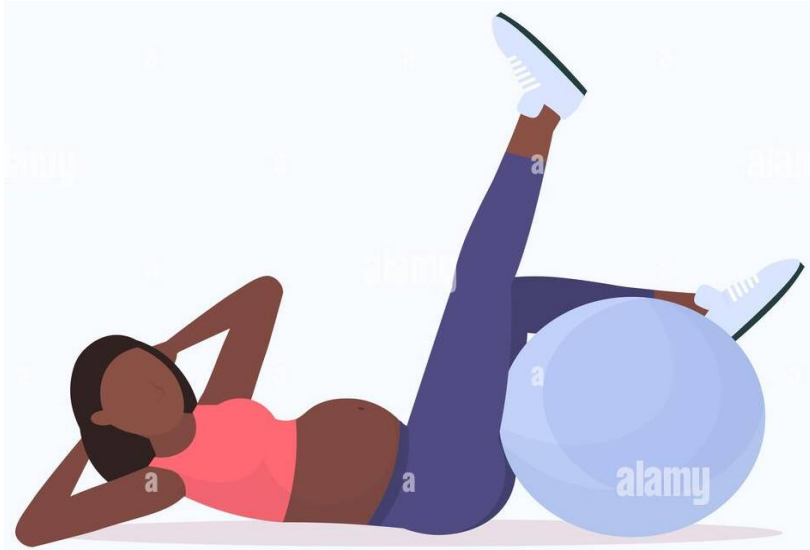


Figure 4

## VI. Literature Limitations

There is a deep need for more studies, reviews, and published observations regarding the overwhelming benefits that RT has during the prenatal and postpartum phases. Many of the cited references point out how the main limitations to their studies they experienced was this specific deficiency in the literature. As professionals in the exercise science and physiology field, it is important to emphasize this need in order to bridge the gap on this topic.

As previously stated, to be knowledgeable is to be safe. If there is an increase in literature regarding this topic, there will be a direct impact on the safety and health of pregnant and postpartum clients. The reason as to why this call to action is required is because of the immense aid that new studies and knowledge could bring to pregnant or postpartum clients.

## VII. Summary

Although there is a plethora of misconceptions regarding resistance training during pregnancy, it has been proven that safe, low to moderate intensity resistance training is beneficial

for pregnant and postpartum clients. But there are specific aspects of resistance training that should be followed such as decreasing in training intensity and increasing volume. While there are factors that should be followed, there are also aspects of training that should be completely avoided. Clients should avoid engaging in the Valsalva maneuver due to the blockage of blood flow necessary for fetal development. For this particular population, physical activity is imperative for both psychological and physiological health. More specifically, resistance training during the pre and postnatal period can decrease the risk of depressive symptoms, increase maternal mental energy while decreasing the prevalence of overall fatigue. In a similar fashion, resistance training can alleviate overall pregnancy and postpartum pain. By performing specific resistance exercises, lower back pain has been proven to decrease during a client's pregnancy. In addition to this, core dedicated resistance training during postpartum can assist in healing injured or torn abdominal muscles from the common pregnancy injury, diastasis rectus abdominus. Maintaining physical activity throughout pregnancy can also lessen labor length and decrease the risk of premature delivery. Exercise science professionals can use this knowledge to inform their clients and emphasize the importance and benefits of resistance training during pregnancy and postpartum.

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