

# Importance of Providing Injectable Iron to Newborn Piglets

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## TAKE HOME MESSAGE

To prevent anemia, it is necessary to provide piglets a single 150 – 200 mg iron injection before 8 days of age to optimize body iron status and growth

### Why are piglets born anemic?

Low body iron reserves at birth  
Not enough iron in sow's colostrum and milk to support rapid growth

At birth, piglets have minimal body reserves of iron and sow's milk provides only a portion of the iron required to prevent piglet anemia. This combination requires producers to provide supplemental iron after birth. Today, iron supplement after birth is essential, but several decades ago the impact may have not been as great due to different production practices whereas piglets often had exposure to soil as a source of iron.

### How is piglet anemia prevented?

#### Iron injection

An intramuscular injection of iron in the neck region is the most common method to provide piglets with iron. Piglets that receive an iron injection are able to retain the iron for future use. Two common sources of injectable iron include iron dextran and gleptoferron.

### Oral administration

The practice of giving iron orally is a method to increase the body level of iron, but has limited efficacy as a portion of the iron is not absorbed and excreted in feces. Also the oral iron dose has the potential to disrupt the pig's digestive tract. Oral iron must also be given within the first 6 hours after farrowing, creating an extremely short window for supplementation. However, orally administering (3 to 10 days of age) large amounts of iron (600 mg/kg body weight) is lethal.

### How much injectable Fe is needed?

Single dose of 150 - 200 mg

While no exact level has been deemed ideal for all piglets, common practices would provide 150 to 200 mg in a single injection. Recent research has shown that injecting piglets with 100 mg of iron is sufficient for adequate growth in the preweaning stages, but 200 mg of injected iron was needed to maximize post-weaning gain, feed intake and blood Fe status (Figure 1).

### Should I provide a second iron injection to piglets?

From a biological prospective the answer is "no". The evidence is very weak to show a measurable benefit in providing 2 full or partial doses of injectable iron during the suckling stage prior to weaning. Some producers however do give two injections, and the main reason is to make sure no piglets accidentally missed their injection at processing. Research has shown that piglets that did not receive any iron injection were approximately 17 lb lighter at the first marketing event compared to pigs receiving a 200 mg injection of iron at birth (Figure 2). Thus, some producers choose to provide the 2nd injection to assure all piglets receive at least 1 iron dose prior to weaning.

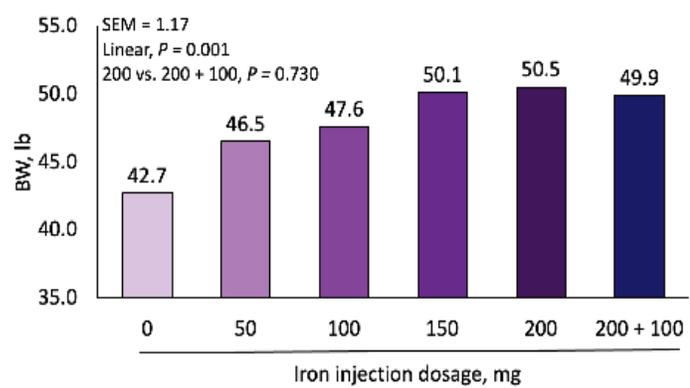


Figure 1. Effect of piglet iron injection dosage (0, 50, 100, 150 or 200 mg of iron in a single injection on d 3 of age or 200 mg on d3 and 100 mg on d 10 of age) on ending nursery weight. Adapted from Williams (2020).

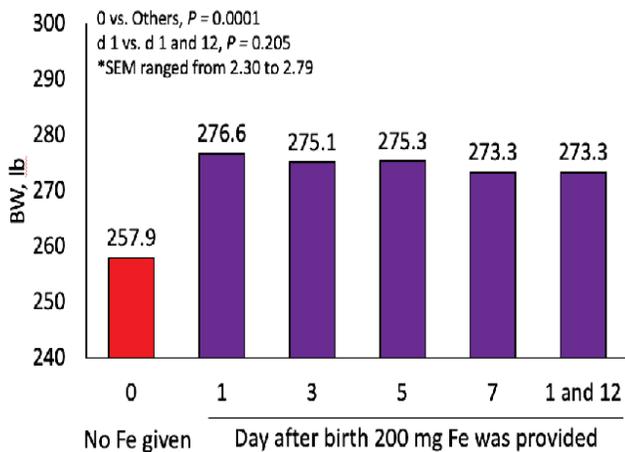


Figure 2. Effect of piglet iron injection timing (iron injection given on d 1, 3, 5, 7 or both 1 and 12 of age) or no iron injection given on market body weight. Adapted from Williams (2020).

## When should injectable iron be given?

Iron injections are generally given at first processing, which generally are conducted from day 1 to 7 after birth. While research data is not fully consistent, providing the iron injection at any time during this period should not cause noticeable changes in subsequent piglet growth and body iron status.

## Will an iron injection affect pig survival?

Anemia can compromise the immune system's ability to fight off infection. Piglets that do not receive an iron injection can develop various lesions that can result in death. While providing an iron injection to piglets post-farrowing has been shown to reduce mortality, recent research has shown that there was no influence on suckling or wean-finish mortality. Thus, while growth performance and blood iron status are significantly decreased from anemia caused by a deficient iron body status, pig mortality may not be directly influenced.

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