

How to Vaccinate Chickens

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If you own chickens—be it thousands or just three—you will need to vaccinate them in order to keep them healthy. There are many ways to do this, though some are more effective for large scale productions, like the backpack sprayer method, while others are better for vaccinating chickens one at a time, such as the SC injection method. Scroll down to Step 1 to learn about the different methods. **If you have never vaccinated chickens before, you should consult a veterinarian who can discuss the best methods for your situation.**

Method 1

Preparing for Any Vaccination



1

Give chicks their first vaccinations at the right time. Different vaccines generally need to be given at different times in a chicken's life. Most vaccines are given soon after the chicks have hatched. **Always talk to a veterinarian before vaccinating if you have never vaccinated a chicken before.**^[1] Listed below is a general guide for the most common vaccinations and when they should be given:

- E.Coli: Given at one day-old.
- Marek's Disease: Given at a day-old to 3 weeks of age.
- Infectious Bursal Disease (Gumboro disease): Given from 10 – 28 days old.
- Infectious Bronchitis: Given at 16 – 20 weeks of age.
- Newcastle Disease: Given at 16 – 20 weeks of age.
- Adenovirus: Given at 16 – 20 weeks of age.
- Salmonellosis: Given at day old to 16 weeks of age.
- Coccidiosis: Given at day-old to 9 days.
- Infectious Laryngotracheitis: From 4 weeks of age on.



2

Do not give vaccines to chickens who are laying eggs.The risk of the virus being shed via the oviduct into the egg, and then taken off site where it could pose an infection risk to other birds, is too high when you vaccinate chickens while they are laying eggs.

- Most vaccine manufacturers recommend giving vaccinations to adult birds at least 4 weeks before the hen starts laying. This ensures that the recipient is no longer shedding virus and does not therefore pose a risk of indirect transmission via the egg to birds at a different location.

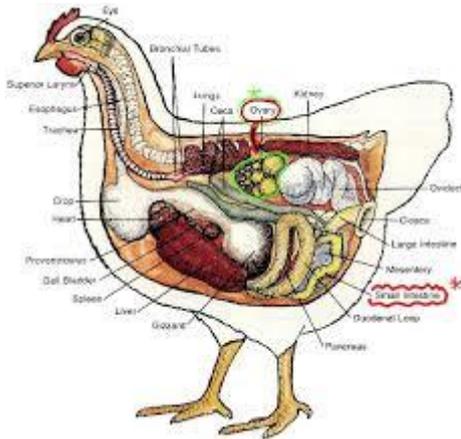


3

Be aware of which vaccines need to be given annually. Some vaccines need an annual booster shot to make sure that they are still effectively guarding against the virus they are designed to fight. Other vaccines only need to be given once and will provide lifelong protection.^[2]

- *Vaccines that need an annual booster:* Infectious Bronchitis, Newcastle Disease, Adenovirus (Egg Drop Syndrome), Salmonella.

- *Vaccines that do not need a booster:* Marek's Disease, Infectious Bursal Disease, Coccidiosis, Infectious Laryngotracheitis



4

Check the overall health of your chickens before you vaccinate. You do not want to vaccinate sick birds, as the virus might be too strong and may kill them. **The best way to tell if you should vaccinate or not is to have a veterinarian inspect the chickens to make sure they are healthy.**

- At the same time, the veterinarian can talk to you about the best way to vaccinate your specific chickens.



5

Check and record the vaccination information. It is very important that you check to make sure you have the right vaccine, right dosage, and understand the best way to give the chicken that vaccine. Double check you have all of the correct information and write down all of the information, including:

- Vaccine name.

- Lot number.
- Manufacturer.
- Production date.
- Expiration date.
- Which chicken is receiving what vaccine.



6

Double check that the vaccine has been stored correctly. If the vaccine is supposed to be stored at a specific temperature or in a specific location, it is important to check that the storage has not been compromised in any way.

- If you notice any cracks, or the temperature is not at the right level, you will have to cancel the vaccination and order another round of the vaccine through your veterinarian.



7

Gather all of your materials. The following sections in this article discuss different ways you can vaccinate your chicken. Each method can only be applied to specific kinds of vaccinations so you should always make sure you are doing the right kind of

procedure. Once you have double checked that you know what you are doing, gather all of your materials so you can have them on hand when you are vaccinating the chickens.

- Some vaccination methods require that you have one or two other people helping you so assemble a team if this is the case with your vaccination method.



8

Sterilize the spot where you plan to inject the vaccination. If you are planning on using a syringe and needle to get the chicken her vaccination, you should sterilize the spot where you plan to do it. To sterilize the skin soak a cotton wool ball in surgical spirit (such as rubbing alcohol), part the feathers over the injection site and swab the skin.

Method 2

Vaccinating with an SC Injection



1

Prepare the subcutaneous (SC) vaccination. Let the vaccine heat up to room temperature 12 hours before the vaccination process. Before preparing the mixture, double check that the vaccine you have is meant to be injected subcutaneously. Subcutaneous means that the needle only gets inserted into the chicken's layer of skin and does not go all the way down into the muscle below the skin.

- To prepare the vaccine, follow the instructions that come with the vaccine package.



2

Pick your injection site. SC injections can be given in two spots on a check—the dorsal (or top) part of the chicken's neck, or in the inguinal fold. The inguinal fold is the pocket created between the abdomen and the thighs.



3

Have an assistant hold the chicken for you. It is easier to give an injection if you have both of your hands. The way you hold the chicken will depend on where you are injecting the vaccine.

- Neck: Have the assistant hold the chicken so that the chicken's head is facing you. Your assistant must grasp the wings and feet to make sure the chicken is secure.
- Inguinal fold: Have your assistant hold the chicken in such a way that the chicken is upside down with her chest facing you. It should look like the chicken is lying on her back in your assistant's hands.



4

Create a tent with the chicken's skin. While this might sound odd, doing this will help you to insert the needle. Grasp the chicken's skin at the injection site and lift it up with the fingers and thumb of your non-dominant hand.^[3]

- Neck: Lift the skin midway on top of the neck area using your middle finger, index finger, and thumb. This will create a pocket in between the neck muscles and skin.
- Inguinal fold: Again, the inguinal fold is the pocket created between the abdomen and the thighs. Lift the inguinal fold using your fingers, and feel the pocket or space created.



5

Insert the needle into the chicken's skin. Inject the needle into the pocket created. Initially there will be resistance, but once the needle has penetrated the skin and entered the subcutaneous space, the needle will pass through very easily. You should feel this initial resistance, followed by smooth movement.^[4]

- If you still feel resistance (like there is something blocking the needle), it means that you may have gone too deep and inserted the needle into muscle. If this is the case, remove the needle and change the angle of your needle so that it goes more shallowly into the chicken's skin.



6

Inject the vaccine. Once you have inserted the needle correctly, press down on the plunger and inject the chicken with vaccine. Make sure that all of the vaccine gets injected and that the needle has not come out on the other side of the fold of skin you are holding on to.

Method 3

Vaccinating with an IM Injection



1. 1

Prepare the intramuscular vaccination. Intramuscular (IM) means that the needle you will use gets injected into the chicken's muscle. The breast muscle is the best site for injecting this sort of vaccination. Follow the instructions that come with the vaccine to make sure that you prepare it correctly.

2.



2

Have an assistant hold the chicken down on a table. It is easiest to give this injection when the chicken is placed on a table. Have your assistant grab the hocks and legs of the chicken with one hand, while the other hand grasps both wings at the base while the chicken is lying on her side.



3

Locate the keel bone. The keel bone is the bone that divides the chicken's breast. You will want to inject the vaccine in a spot that is 1 to 1 ½ inches to the side of the keel bone. This is the largest part of the breast muscle, which makes it easy to inject the vaccine into.^[5]



4

Insert the needle at a 45 degree angle. Holding the needle at a 45 degree angle and inserting it into the chicken will help to make sure that the needle reaches the muscle below the skin. Check to make sure that there isn't any bleeding.^[6]

- If you notice that the spot is bleeding, you have hit a vein or artery. Remove the needle and try a different spot.



5

Push the plunger down on the syringe and inject the vaccine. Make sure that none of the vaccine spills out while you are injecting it. Once all of the vaccine has been injected, remove the needle from the chicken.

Method4

Vaccinating with Eye Drops



1

Use an eyedropper for respiratory vaccines. This route is tedious but is the most effective and surest way to administer a respiratory vaccine. This route is more commonly used in breeders (chickens used to produce chicks), layers (chickens used for their eggs), and when you only have a small number of chickens to vaccinate.

2

Prepare the vaccine solution by diluting it. Open the vaccine vial or bottle and dilute it by using a syringe with 3 ml of diluent (this syringe and diluent comes with the vaccine). Make sure that the temperature of the diluent is 2 to 8 C°. [7]

- To make sure that the diluent is always cold, always carry an ice box with ice, and place the vaccine vial and diluent in it.
- If you are going to vaccinate a lot of birds, you can divide the diluted vaccine into two or three clean bottles and keep them on ice. That way, the vaccine will stay at the right temperature.

3

Attach the eye dropper to the vaccine vial or bottle. Gently shake the vaccine vial several times before attaching the dropper. Once shaken, attach the eye dropper that should come with the vial or bottle containing the vaccine.

- The eye dropper will appear different, depending on whether or not you use a vial or bottle. However, you should be able to attach them by pulling them over the lip or the container or twisting them on.



4

Have an assistant hold the chicken and apply the vaccine. Grab the bird's head and slightly twist it so that her eye is facing you. Drop 0.03ml of the vaccine in the chicken's eye and wait for a few seconds. Taking a moment to wait will ensure that the vaccine is absorbed by the eye and flows through the nostrils.

Method 5

Vaccinating through Drinking Water



1

Use this method if you have a watering system in your hen house. This vaccine method should also really only be used if you have a commercial chicken farm, as only vaccinating a small amount of chickens this way will waste a lot of vaccine.



2

Make sure that your watering system is clean. It is very important that your watering system be clean but also free of chlorine. Stop running chlorine and other medications through your watering system at least 48 hours before planning on vaccinating your chickens.^[9]



3

Stop running the water prior to vaccinating your chickens. In order to make sure that you chickens actually drink the water that contains the vaccine, you should stop running water to the chickens for a period of time before the vaccination process.

- Withdraw water 30 to 60 minutes before vaccination for hot climates, and 60 to 90 minutes for cold climates.



4

Calculate the amount of water to be used by the birds over the course of two hours. As a rough guide the water consumption in liters for 2 hours can be calculated by multiplying the number of chickens by their age, and then multiplying that number by two.

- For example: 40,000 birds at 14 days of age would mean $40 \times 14 \times 2 = 1,120$ liters (295.9 US gal) of water for 2 hours.
- If you have a proportioner hooked up to your water system, add another step to the equation. For houses with proportioners with 2% injection rate prepare the vaccine solution in a bucket with 50 liters (13.2 US gal) capacity. To do this multiply 2% to the computed water consumption for 2 hours, and place this amount in the bucket, for the example above: $1,120 \text{ liters (295.9 US gal)} \times 0.02 = 22.4 \text{ liters (5.9 US gal)}$. Mix the vaccine in this bucket and place the proportioner's suction hose in this bucket.

5

Stabilize the water if you use a manual drinker. Stabilize the water by placing 500 grams of skim milk for every 200 liters (52.8 US gal) of water, or by using chlorine neutralizers like Cevamune® at 1 tablet for every 100 liters (26.4 US gal). For houses with bell drinkers, mix the vaccines in the overhead tank.^[10]

- For automatic drinkers with proportioners use Cevamune® to stabilize the water. For the example used in the previous step, you would need around 11 tablets. This was based on $1,120 \text{ liters (295.9 US gal)} \div 100 \text{ liters (26.4 US gal)} = 11.2$ (1 tablet for every 100 liters). Mix these tablets in the pale with the 22.4 liters (5.9 US gal) of water (from the example above).



6

Let the water start running again so that the chickens can be vaccinated. When the water is back on, the chickens will start to drink. In this way, they will receive their vaccinations. Try to get the chickens to drink all of the vaccine water within one to two hours. Do not put chlorine or other medications back into the water for at least 24 hours.

- For houses with manual or basin drinkers, equally divide the vaccine solution in the basins or drinkers. For houses with bell drinkers, just open the over head tanks to let the birds drink. For houses with automatic nipple lines, just open the valves.

Method 6

Vaccinating with Backpack Sprayers



1

Use a backpack sprayer for large scale vaccinations. If you have a lot of chickens that you need to vaccinate, the backpack sprayer is one of the fastest ways to get the job done. This device actually gets worn like a backpack on your back and can vaccinate many chickens at once.



2

Test the backpack spray device. Test spray by spraying four liters of distilled water in the backpack sprayer, and take note of the time it takes before the device is completely emptied. Ensure that the particle size of the nozzle is correct.

- For chicks (day 1 to 14) this should be at 80 to 120 microns, for older birds (day 28 onwards) this should be between 30 to 60 microns (1).^[11]
- Desvac®, and Field Spravac have color coded nozzles with different particle sizes.



3

Get the right amount of distilled water based on the size of each chicken. The total amount of distilled water will depend on the amount of birds to be vaccinated, and the age of vaccination. As a rough guide^[12]:

- 500ml to 600ml of distilled water is needed for every 1000 birds at 14 days of age, and 1000ml of distilled water is needed for every 1000 birds at 30 to 35 days of age. For example: for a 14 day old flock of 30,000 birds; $30 \times 500 = 15,000$ ml or 15 liters (4.0 US gal) of distilled water.



4

Prepare the vaccine solution. Only mix the vaccine together when you are completely ready to vaccinate the chickens. Open the vaccine vial first, and pour distilled water into it before mixing it in the clean pale with the correct amount of distilled water (see Step 2).

- Mix the vaccine thoroughly using clean plastic stirrers.



5

Divide the vaccine equally into the backpack sprayers and prepare the hen house. Prepare the house by setting it to minimum ventilation rate, and dimming the lights to calm the birds. Always vaccinate in the cooler parts of the day.



6

Vaccinate the chicks. After preparing the house and the vaccine, start vaccinating by letting one person walk slowly ahead to part the birds, and the vaccinators behind him to the left and to the right. The sprayers must slowly walk and direct the nozzle 3 feet (0.9 m) above the birds heads.

- While you spray, maintain the pressure of the nozzle at around 65 to 75 PSI. Each backpack sprayer brand is different but there is always a way to read the pressure on the device.

1. 7

Return the chicken pen to normal. After vaccination, immediately restore the ventilation settings to normal. Turn the lights back on after a few minutes (5 to 10 minutes), to give the chickens time to rest.

2.



8

Clean the backpack sprayer. Clean the backpack sprayer with 4 liters (1.1 US gal) of water, by shaking it and spraying it until it is emptied. Always check the parts of the backpack sprayer and replace as needed. For battery operated sprayers, always recharge after every use.

Method 7

Vaccinating in the Wing Web



1

Use a wing web vaccine for serious chicken diseases. This route is generally taken when you are vaccinating chickens against Chicken anemia, live Fowl Cholera, Avian Encephalomyelitis, and Fowl Pox.

2

Dilute the vaccine. The vaccine you get should come with a diluent. The amount of diluent you need depends on the vaccine you will be giving your chickens. Follow the instructions that come with the vaccine on how to properly dilute it.



3

Have an assistant hold a chicken and lift a wing. Gently lift the right or left wing of the chicken. Expose the wing web so that the wing web is in front of your. This means that you should expose the underside of the wing so that it is facing up. Gently pluck some of the feathers on the wing web so that you can see what you're doing and so none of the vaccine gets on the feathers.^[13]

- The wing web is located near the bone where the wing connects to the body.



4

Dip the needle into the vaccine. Dip the two pronged needle applicator into the vaccine bottle. Take caution that the needle is not dipped too deeply. Only the wells of the two pronged needles must be dipped into the vaccine.



5

Pierce the underside of the wing web, but avoid piercing the blood vessels and bones. You can ensure this by centering the needle puncture in the middle of the triangle formed by the wing web, while the wings are spread apart.

- If you accidentally hit a vein and bleeding occurs, replace the needle with a new one, and re-vaccinate.

6

Replace the needle and check to see that the vaccination was successful. Replace the needle with a new one after vaccinating 500 chickens. Check after 7 to 10 days to make sure that the vaccination was successful. To check:

- Pick 50 birds per chicken house and check them for scabs under the wing web. Scabbing or scarring means that the vaccination was successful.

Cleaning Up After Any Vaccination



1. 1

Dispose of all empty vials and vaccine bottles properly. To do this, you will first have to disinfect them in a bucket filled with disinfectant and water (50ml of glutaraldehyde with 5 liters water).

2.



2

Recycle your vials and bottles. Some operations recycle vials and bottles and use them for sample collections. This can be done by first disinfecting the vials or bottles, and then rinsing them thoroughly afterwards. After the rinse, autoclave the containers to make sure that they are fully sterilized.



3

Check on the chickens' health. It is always important to keep an eye on your chickens after you have vaccinated them. Look for any signs that something might be wrong. If you do notice anything, call a vet right away.^[14]

- For respiratory vaccinations it is normal for the chickens to develop respiratory issues like sneezing for 3 to 5 days after they get vaccinated. If the signs persist for longer than that, call a vet.