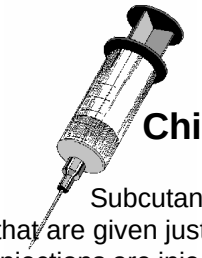

Chicken Injections

Subcutaneous (SC) injections are injections that are given just under the skin. Intramuscular (IM) injections are injected right inside a muscle. They are not the same and usually do not produce the same results. In fact, some drugs and vaccines require that they be injected in a specific way. However, many injectable drugs and vaccines will work both ways, but the dosage requirements are usually different for IM and SC injections. There is also intravenous (IV) injections which are injected directly into a blood vessel, but IV injections are not usually given to poultry.

With an IV injection, the drug is carried quickly throughout the bird's body and the maximum blood concentration is achieved in seconds, however, the drug wears off almost as quickly because the liver and kidneys rapidly extract it. Many times, when a vet gives an IV injection he will hang a bottle of the drug on a rack over the patient and let a continuous supply of the drug run into the patient by gravity.

However, with SC injections, the drug is absorbed very slowly because it has to mix with the bird's body fluids before it can enter the bloodstream. Such injections can take several minutes before any of the drug reaches the bloodstream. Because of this, the level of the drug in the bloodstream remains at a lower, but more constant, level for a longer period of time.

A compromise between the two is IM injections. These are absorbed into the bloodstream through muscle tissue at a faster rate than SC injections and usually achieve higher blood levels. They don't last as long as SC injections, but they do last longer than IV injections. The major drawback of IM injections is that it can cause muscle soreness, therefore it is best to give SC injections if the drug allows it.

One of the best places to give a SC injection to a chicken is between the shoulder blades at the base of the neck. Many people use SC instead of IM because it is less likely to get them into trouble, but a drug must be given by the required route to be its most effective.

The best place for IM injections is usually directly in the breast muscle. The leg muscles should be avoided if you don't want a limping bird.

Finally, it is important to make sure that you do not inject your birds using a needle size of less than 22 gauge - 25 or higher gauge is preferred. The larger needles (less than 22 gauge) can sometimes cause a lot of unnecessary pain and bleeding, but they are easy to draw the drug into the syringe. Smaller needles, such as 30 gauge, are easy on the bird but are hard to draw in the drug. For this reason, it is common to see some vets using a large 20 gauge needle to draw the drug into the syringe, and then switching to a fine 30 gauge needle before actually doing the injection. However, for most non-vets, it is more practical to just use a 25 gauge needle from start to finish.

Cleaning Chicken Wounds

Wounds should not normally be treated with hydrogen peroxide because it impedes wound healing by killing off growing new cells. An organic iodine such as Betadine or Xenodine work best.

Once the wound is clean, pack it with topical antibiotic powder or Neosporin creme that is made for that purpose. Such products will probably include Zinc Bacitracin as their primary active ingredient.

For severe wounds in which a large portion of skin is torn, you can close it by using ordinary Super Glue. Super Glue should be used sparingly and only on the outer layers of the skin. Be very careful what you are doing because you could become "attached" to your chicken in a whole new way.

Bandages are sometimes necessary, but when improperly secured, they tend to last about as long as it takes the bird to reach back and yank them off. Since each wound is different, careful thought should go into deciding on whether a bird actually needs it and if so, how it should be applied so that the bird can't easily remove or lose it.

Military Intelligence

From a military intelligence document used during the Vietnam War - "The infiltration group was composed of 1/3 males, 1/3 females, and 1/3 party officials."

Probiotics

Most people have heard of "anti"-biotics, which are used to kill bacteria inside an animal. However, there is also a substance called a "Pro"-biotic, which is used to infect animals with *more* bacteria.

Animals (including humans) subjected to antibiotic therapy may develop an ecologically unbalanced flora/fauna in their intestinal tract as a direct result. In other words, antibiotics tend to wipe out the **beneficial** bacteria that resides in the intestines as well as the bad.

Have you ever taken antibiotics and gotten diarrhea a few days later? There is normally a strong population of bacterial organisms present in the intestines that are equally balanced between good and bad bacteria. When the balance gets upset, bad bacteria can take over. Probiotics help prevent this by repopulating the intestines with beneficial "good" bacteria.

The best choice of probiotic is one formulated specifically for the animal. Bird Bene Bac is specific to birds, but there are others for cows, people, etc. Some people use yogurt with live culture as a bacteria source, but this does not work that well with birds since birds and cows are too dissimilar.

Drug Injection Calculations

Sometimes it is necessary to give a bird an injection in which the amount is based on the birds weight rather than in cc's (cubic centimeters). This can be confusing sometimes because most syringes are calibrated in cc's. Fortunately, there is a simple procedure that most people can use to figure it out.

The first thing that you need to know is that the dosage-by-weight tables that the drug manufacturers supply allow you to figure the dosage amounts in ml's (milliliters), not cc's. What is a poultry farmer to do? Fortunately, this is the easiest part of our calculation because it turns out that, for liquids anyway, cc's and ml's are identical.

The next thing you need to do is to translate the bird's weight into kilograms (kg). If you have a scale that already weighs in kilograms, then you are ahead of the game. For the rest of us who have scales that weigh in pounds, we must multiply the number of pounds by 0.454 to get the bird's weight in kg's. For example, a bird that weighs 5 pounds also weighs 2.27 kg's.

The next two things we need to get are the mg/kg dosage recommendation from the drug manufacturer and the mg/ml concentration of the drug that we are using. Usually this is printed on the front of the box or on an instruction sheet inside the box.

Once we know the animal's weight in kilograms, the mg/ml concentration of the drug, and the mg/kg dosage recommendation we have only to plug the numbers in to the following formula to get our recommended dosage in cc's:

$$\text{Injection cc's} = \frac{\text{(mg/kg recommended dosage X weight in kg's)}}{\text{mg/ml concentration}}$$

For example, if we needed to inject a 4 pound hen with Tylan 50 (an antibiotic) we would first translate the weight into kilograms and get 1.816. Then, from the box the drug came in, we find that the concentration is 50 mg/ml. Also, from the paper inside the box we see that the dosage recommendation is 10 to 40 mg/kg injected intramuscularly (IM) three to four times per day. Since our recommended dosage is in the form of a range, we must do the calculation twice to get the range in cc's. From our formula above, we multiply the lower dosage range by the weight (10 X 1.816) and get 18.16, then we divide that number by 50 to get 0.3632 cc's. Then we do it again for the higher range (40 X 1.816 = 72.64) and divide again by 50 and we get 1.4528 cc's. Thus we can see that the proper dosage of Tylan 50 for a 4 pound hen is in the range of approximately 0.4 cc and 1.5 cc. Note that those figures are rounded. It is perfectly acceptable to round the dosage to the nearest graduation of your syringe.

Do any of this wrong and you may kill the animal. This can happen either by overdosing it with too much drug or underdosing it. Underdosing it may in the short term cause death because the disease is not really being treated. In the long run, especially in the case of antibiotics, death may be caused by underdosing because a large number of bacteria may become resistant to the low doses of the drug and therefore not be affected by the drug at some later date or may pass the resistant strain on to other animals. When giving antibiotics, it is usually best to give a dosage near the higher range of the recommended level, at the recommended frequency, and for a minimum of five days.

Chooks

If you have been to Australia, you probably have eaten chook eggs for breakfast. In fact, most Australians who eat eggs, eat chook eggs no matter where they live. Some even eat the chooks themselves. That may sound disgusting at first, but it sounds a lot better when you learn that "chook" is Australian slang for "female chicken".

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