Antibiotics, which can come in injection, topical, or tablet form, either kill bacteria or inhibit their growth. The former type of antibiotic is called bactericidal, whereas the latter is called bacteriostatic. Penicillin is a well-known example of a bacteriostatic antibiotic.

Protozoa are single-celled organisms classified according to cellular shape and structure. They reproduce by a process called binary fission, in which one cell divides into two. Some bacteria are able to convert themselves into spores for the purpose of reproduction. Protozoa can be direct parasites, that is, they attach themselves to the host's tissues and drain their blood, often causing disease. Other protozoa reproduce through spore formation, and often form complex filamentous structures. They can be direct parasites, or they can cause disease indirectly by facilitating the growth of bacteria.

There are four main classes of antibiotics available: macrocyclic lactones, tetrapyramidines, sulfonamides, and benzimidazoles. Resistance is a real concern in the fight against helminth parasites. The benzimidazoles work on metabolic processes. Because these drugs produce a slower kill, Peregrine says their use is less likely to cause drug resistance in the horse and become more difficult to treat. However, there is also concern about this likelihood becoming "slightly more complicated with resistance." When there is a drug that doesn't work, the pathogen will kill the animal, and the horse owner's only other option is to try another drug. While antibiotic resistance development determines how quickly it occurs and to what extent.

Bacteria develop different ways to evade those killing mechanisms, says Weese. "Our antibiotics aren't smart enough to just go where they're told," he says. "The drugs themselves don't make the parasites resistant," adds Peregrine, adding that inappropriate use of drugs is the cause of evolution of drug-resistant parasites. "The important thing is to try to use the right drug for the job," says Weese. Indeed, the battle with pathogens, or agents of disease, continues today, but current mainstays of the arsenal in the face of an invasion, in certain cases it might be better to use a drug less important in that underdosing strongly selects for parasites with resistant genes," he says.

Animal roundworms (ascarids) that are not killed in an early phase tend to mature and lay eggs. These can then travel in the horse's feces and contaminate the pasture, making the animal the only host needed for the parasite to live on. This is a consequence of the reproduction strategy of the parasites, which is to avoid having all eggs laid in the horse at once, in order to reduce the chance of the host's immune system reacting to a massive infection. As a result, heavy infections don't typically cause significant illness in the horse. On the other hand, a decrease in the host's immune system, as may occur in foals or horses with deficiencies, can increase the easiness to which parasites cause disease.

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