

Vaccination Pros and Cons (Just the basics)

Factors to consider:

- *Risk of disease*
 - How likely is the animal to be exposed?
 - Hunting dog vs. apartment/house dweller
 - Boarded frequently, doggie daycare, dog parks
 - Prevalence in your area of the infectious agent to be vaccinated
 - Does the animal travel? (e.g. Canadian snowbirds!)
- *History of immune mediated diseases?*
 - Vaccination is a recognized *potential* trigger
- *Is the animal currently sick?*
 - If so, DO NOT VACCINATE!
- *Vaccine efficacy and safety*
 - For new vaccines, what safety and efficacy studies and field trials have been performed?
- *Severity of disease* (e.g. giardia vaccine)
- *Type of vaccine to be administered*
 - Killed vaccines (whole cell viruses, subunit antigens, bacterins)
 - Shorter duration of immunity
 - No risk of reversion to virulent form (safer in immunocompromised patients)
 - Rabies, FeLV, Leptospira, some canine parvovirus, some panleukopenia
 - Modified-live vaccines (attenuated pathogens)
 - Longer duration of immunity
 - Risk of reversion to virulent form
 - Canine distemper, some parvovirus and panleukopenia, feline herpes and calici
 - Recombinant vaccines (DNA encoding specific antigenic portions of the pathogen)
 - DNA is incorporated into live virus vector like canary pox virus (virus doesn't replicate, but antigen of pathogen is "presented" to the immune system)
 - Better cell mediated immunity than antibody response
 - Potentially fewer adverse reactions (because a limited number of antigens are used and there is no adjuvant)
 - Purevax® rabies, recombinant FeLV, Lyme OspA (subunit vaccine)

Pros of Vaccination

- The obvious: either prevent infection or limit the severity of disease (i.e., some vaccines are not intended to completely prevent infection; e.g. leptospirosis, feline herpesvirus and calicivirus)

Cons of Vaccination

- Various types of post-vaccinal reactions: transient/non-specific illness; type I hypersensitivity (allergic) reactions; type III hypersensitivity reactions (immune complex deposition in the microvasculature); autoimmune reactions; local injection site reactions (e.g. feline sarcomas)
- Lack of efficacy

Evaluating antibody titers

- Gold standard tests: *serum virus neutralization* (SVN) for distemper, calici and herpesvirus; *hemagglutination inhibition* (HI) for parvovirus and panleukopenia; *rapid fluorescent focus inhibition* (RFFI) for rabies