

# Care of the Bitch

*from Breeding  
through Pregnancy  
and Whelping*

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## ***North Oatlands Animal Hospital***

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- Full Service Veterinary Facility
- Offering Numerous Specialized Canine Reproductive Services
- AKC Approved Semen Freezing Facility
- 19275 James Monroe Hwy,  
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**703-777-7781**

**[www.NoahVets.com](http://www.NoahVets.com)**





## ***Professional Experience***

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- VMRCVM – Virginia Tech Graduate 2001
- Society of Theriogenology - Member
- European Society of Reproduction - Member
- Breeder/Owner/Handler/Judge – Airedale Terriers
- Member of many National and Local Clubs
- Airedale Terrier Club of America (Chair - Health Committee)
- Airedale Terrier Clubs of Metro Washington and Greater Philadelphia
- Old Dominion Kennel Club





## ***Prior to Breeding***

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- Breeders spend Thousands of Dollars and Many Hours planning an important breeding.

### **Ensuring a Healthy Pregnancy is VITAL**

- General check-up and Bloodwork
- Update vaccination status vs. titers
- Fecal exam
- Thyroid blood test
- Breed specific genetic screening (vW, CERF, OFA, PennHip, etc)



## ***Coming Into Season***

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- Vaginal culture  
(Aerobic and Mycoplasma)
- Brucella test
- Vaginal cytologies and Progesterone tests for the optimal timing



## ***Timing The Bitch***

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- Advantages
  - Higher conception rates
  - Prediction of whelping date
  - Decreased travel time
- Techniques
  - Smears
  - LH tests
  - Progesterone Tests



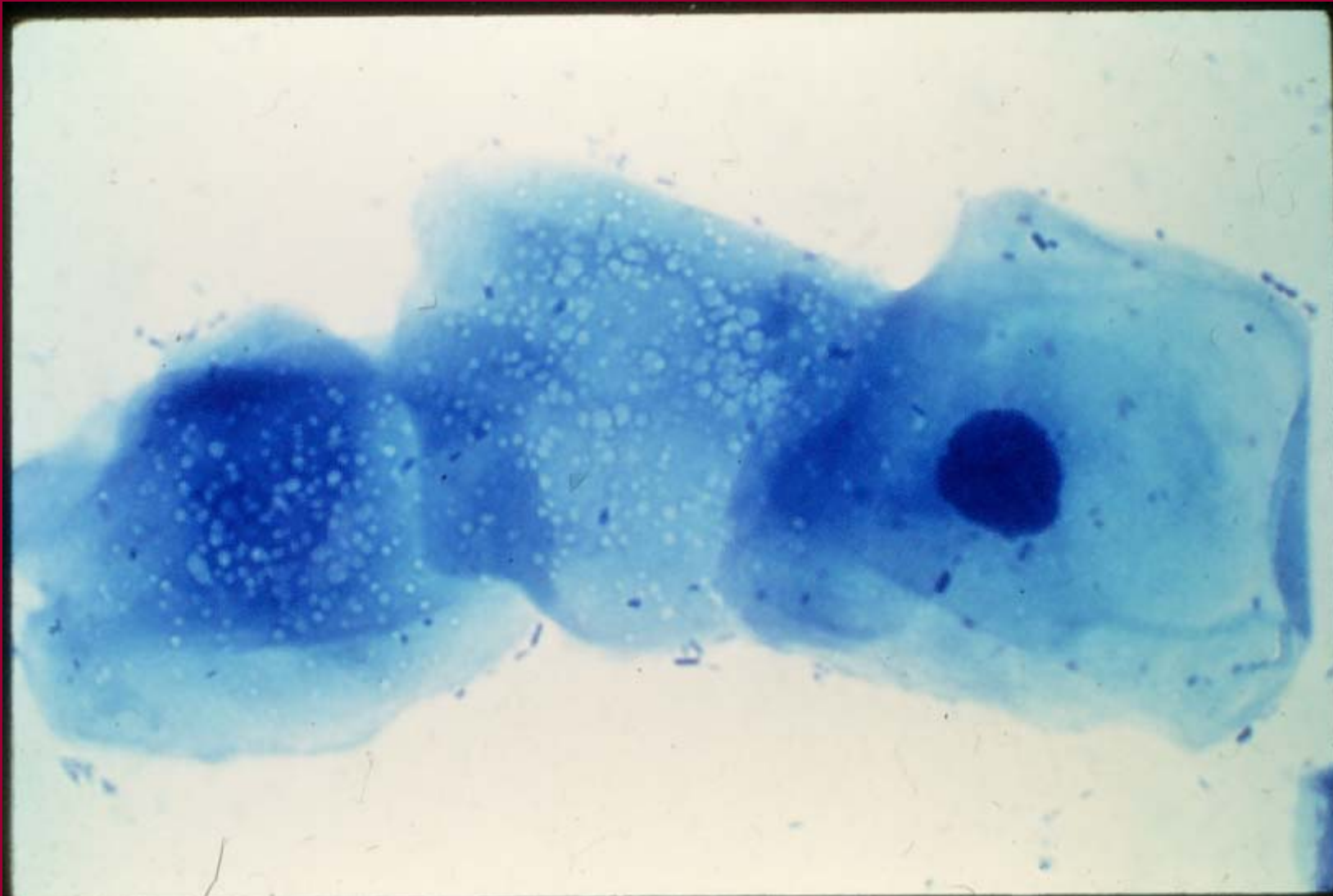
## ***Vaginal Smear***

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- Cornification associated with high Estrogen Levels
- 2 periods of full Cornification due to normal fluctuations in estrogen

***BY USING THIS TECHNIQUE ALONE,  
THE BITCH WILL BE BRED  
TOO EARLY***







## ***Early On In Pregnancy: Days 1 to 21***

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- Monitor for any kind(s) of discharge (Signs of abortion, infection, reabsorption, pyometra) - but hard to find out exact diagnose that early on
- Maintain normal levels of nutrition, avoid obesity, maintain good muscle tone



## ***Pregnancy Diagnosis***

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- Palpation (25-28 days – string of pearls)
- Ultrasound (day 19-30+) 97% accuracy, but only 37% accuracy of counting number of puppies. Provides most informative information.
- Blood test (Relaxin Assay) day 23-28
- Radiography (after day 50) excellent for determining the size of the litter, insensitive for diagnosing fetal distress



## ***Nutrition During Pregnancy***

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- Maintain a well conditioned bitch
- Avoid obesity (it decreases conception rates, creates higher risks for dystocia and can cause poor lactation)
- At 3 weeks of gestation bitches may suffer loss of appetite (kind of morning sickness)
- During the last trimester increase food consumption by 100-150 %
- Feed diets that are high in fat and protein :
- Min 30% protein and 20% fat
- Avoid excess of vitamins or supplements.



## ***Supplementation & Vitamins***

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- **No extra calcium supplementation.**  
Even though requirements increase in pregnancy, they are met by the increased amount of food ingested. Extra calcium increases the risk of hypocalcemia after the whelping.
- Vit B and Vit C vitamins – routine daily amounts should be sufficient
- Excess vit A causes congenital defects (cleft palates)
- Vit D – may complicate calcium metabolism
- **No extra fat soluble vitamins**



## ***Supplements Ctd...***

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### **Examples of Supplements:**

- Platinum Performance Canine, Structure, Vertex, Concept-a-Bitch, etc.
- It has been shown that addition of Omega 3 fatty acids maximize cerebral and retinal development in fetuses



## ***Exercise During Pregnancy***

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- Well fit bitch = less chances for dystocia
- Brisk walks are the safest
- Performance bitches should Stop Heavy Work
- Avoid Stress (adrenalin decreases oxygen flow to the uterus and placenta)

## ***Supplies Needed for Whelping***

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- Radiant Heat Source
- Blankets, lots of hand towels
- Thermometer
- Bulb syringes for suction
- Scale, weight chart
- Scissors
- Material to tie the cords (suture, dental floss)
- Betadine Solution
- Gloves, KY Jelly
- In House Uterine Activity Monitoring – Whelpwise.com
- Drugs from vet (Oxytocin, Calcium)

**Make Arrangements in Case of Emergency**

## ***During the LAST WEEK of Pregnancy***

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- Deworm the bitch with Panacur (minimizes trans-placental and trans-mammary transmission)
- Prepare the whelping box in a quiet place in the house and acclimate the bitch to it
- Monitor for the drop in body temperature (below 98) or a Full Degree Drop
- Catch up on sleep 😊



## ***Initiation of Whelping***

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- Fetus has to initiate the process
  - produces cortisol hormone
  
- Cascade of hormonal changes:
  - Estrogen Levels Go **UP**  
Progesterone levels Go **DOWN**
  - Prostaglandin Hormone is released
  - Relaxin And Oxytocin hormones are released
  
- Whelping is initiated



## ***Stages of Labor***

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- Stage 1: Cervical Dilatation
  - Lasts about 6 - 24 hours
  - Anorexia, panting, restlessness
  - Nervous first time bitches may go 36 hours
- Stage 2:
  - Cervix completely dilated (Cervix cannot be palpated vaginally)
  - Abdominal pushing starts, expelling puppies
- Stage 3:
  - Delivery of Placenta

## ***General Guidelines During Whelping***

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- Strong, frequent stage 2 straining should produce a pup within 30 minutes
- More than 2-3 hours between pups may be evidence of a problem
- Weak, intermittent stage 2 straining should produce a pup within 3 hours (the first one) or within 2 hours (between pups)



## ***Normal Delivery: How Can We Help?***

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- Gentle traction to help pull puppy out
- Help remove placenta (curved hemostat)
- Help open membrane sacs and clear the airway (bulb syringes)
- Gentle rubbing to stimulate breathing
- Keep warm and dry
- Tie off the umbilical cords & dip in betadine
- Ensure nursing



## ***Possible Actions With a S L O W ... Whelping***

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- Pain Management
  - Outside walk
  - Car ride
  - Light tranquilization
- Palpation / Feathering
- Reduce any environmental stresses
- Food and water for the dam
  - (melted ice cream works well)
- Calcium injections 10%  
(1-5 mls SQ)
- Oxytocin (be careful with doses)



## *Use of Oxytocin*

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- A commonly misused drug
- 5-20 units at a time, but can only be used 2-3 times – **MUST palpate first!**
- Can cause tetany, compromised fetal oxygen supply and placental separation

## ***When Do You Need to Get Help?***

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- More than 2 hours between pups
- Partial Delivery – puppy palpated in the canal and is stuck
- Green discharge and no pup
- Bitch is distress
- Bitch only has slight contractions and not going into full pushing mode
- If using Fetal Doppler – slow or unusual fetal heartbeat pattern



## ***Elective Planned C-Section***

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- Breed related predisposition
- Past history of dystocia
- Very Large or Very Small Litters
- Progesterone timing is very helpful at selecting the due date :
  - 63 days from the day of ovulation  
(Progesterone levels on 4-8 ng/ml)
- If no timing -document Progesterone level drop
- Administer short acting steroids to help with the lung development and expansion  
(Solu-Delta Cortef IV injection)



## ***Emergency C-Section***

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- Time is of an essence, 10 min could make a difference between a live and dead pup
- Oxygen mask pre-op
- Atropine (0.04 mg/kg IM or SQ)
- IV support , Blood pressure Monitoring
- Anesthesia Induction Drugs
  - Studies show propofol injectable anesthesia followed by Sevoflurane give the best chance of puppy survival
- Lots of help! Ideally 1 person per puppy

# **C-Section Puppy Resuscitation**

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- **Everyone** scrubs their hands
- 1 person per puppy
- Gentle suction of the airway with Bulb Syringes
- Cotton Tip Swab to remove thick secretions
- Rolling a puppy "over a barrel"
- Place puppy on a gentle incline – head down
- Oxygen mask if feet or umbilicus are blue
- Dopram 1-2 drops on the tongue if not breathing
- Slings is no more advocated – head trauma
- If slow heart beat – administer Atropine, cardiac massage

Puppy Resuscitation using

Place the needle at the point indicated and pierce the lip.

Use a pecking action to stimulate the point.



Resuscitation using Ting Points

The Ting points of the hand (front leg) can be used to resuscitate over anesthetized patients.

They are found at the indicated points.





## ***Puppy Resuscitation Ctd...***

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- Clamp, cut and tie the umbilicus, apply betadine to the umbilicus
- Keep them warm and dry (85-95 degrees) in the incubator
- STAT supplement
- Ensure nursing – otherwise colostrum supplementation is needed



## ***Intraosseous Fluid Administration***

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- Needle placed into marrow cavity
  - Fluid therapy
  - Blood transfusion
  - Drug therapy
  
- Not easy to do - experienced personnel only



## ***Fading Puppy***

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- A catch-all term.
- Can be caused by viral, bacterial, nutritional or genetic abnormalities.
- Signs of illness: nasal discharge, diarrhea, umbilical inflammation, persistent crying, failure to gain weight
- General Guidelines to Treatment:
  - Temperature
  - Feeding
  - Fluid Therapy
  - Vitamin K
  - Thyroid supplementation
  - Antibiotic therapy



## ***Water Puppies***

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- Genetic predisposition
- Breed associated
  - Bulldogs
- Ultrasound a week before due date to assess the amount of fluid present
- Treat with low dose of Lasix
- Provide Oxygen Support
- Extreme cases are difficult to turn around

# ***Postpartum Monitoring of the Bitch***

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- Monitor very carefully
- Post-op give 3 low doses of Oxytocin injection IM every 2 hours. First dose given as intra-nasal drops. (Remove pups before giving – stings)
- Rectal temperature may be mildly increased the first 2 days (102-102.5)
- She may have partial anorexia and diarrhea
- Lochia discharge is normal (brick red, no odor) Lasts 4-5 weeks. If longer or very heavy, may have SIPS (Sub-involution of placental sites)
- Incision should not be red, inflamed or painful, keep it clean and dry.
- Mammary glands should be non painful, symmetric and moderately soft
- Temperatures over 104 is an Emergency !



## ***No Milk Production (Agalactia)***

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- Nervous or agitated dams can have poor milk production – Acepromazine injection
- Fearful Dams – intra-nasal Oxytocin and valium injection
- Metoclopramide (Reglan) tablets given 3 x day for one week
- Behavior and maternal instinct can be impaired in a “drugged” mom – watch her and the pups very carefully and don’t leave them unattended!



## ***Mastitis***

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- Can be very extensive or mild.
- Breed predisposition
- Tends to reoccur
- Gram stain, pH measurement and culture the discharge
- Fluid therapy and proper antibiotics
- Warm compresses, "milking it out" to relieve the pressure.
- To nurse or not to nurse?
- Anti-prolactin therapy: Cabergoline tablets



***Questions ?***



## **Contact Information**

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