



WHAT IF DOGS ALSO HAD 9 LIVES?

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BEHAVIORAL SCIENCE! CAN BE ADVANTAGE FOR US

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MANAGEMENT OF TWINS IN MARE

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THE



CAMPUS

we could be heroes!

READY FOR THE EXAMS?

Tips & tricks pentru o sesiune de succes

by Mara-Catalina Busca & Miruna Beda

Tic-tac, tic-tac, zilele au zburat și a venit mult "așteptată" sesiune! Deși de la începutul acestei pandemii s-a încercat pe cât posibil să nu fie schimbări, sesiunea din această iarnă marchează întoarcerea la normalitate, examenele fizice, și totodată o doză mult mai mare de stress. Pentru unii dintre noi aceasta este prima sesiune desfășurată în facultate, iar pentru alții a trecut prea mult timp de la ultimul examen desfășurat fizic și este nevoie, cu siguranță, de o rememorare a modului de interacțiune cu cadrele didactice. Oricare ar fi situația, vom prezenta câteva sfaturi pentru "study session-ul" din viitorul nu foarte îndepărtat.

01 Sperând că nu e prea târziu când citești aceste sfaturi, încearcă să anticipezi volumul de informații și mai ales necesarul de timp pe care îl ai la dispoziție pentru fiecare materie în parte. Eventual, încearcă să stabilești niște obiective zilnice/săptămânale **REALIZABILE**; nu ajută cu nimic psihic dacă îți notezi "zilnic voi învăța 100 de pagini din manualul de anatomie" deoarece șansele de reușită sunt minime.

CONTINUED TO PAGE 2

succes in sesiunea de examene



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02 Dacă ești genul care face des pauze pentru a savura diverse snacksuri/băuturi, există o soluție simplă: le aduci pe toate lângă tine de la bun început. De asemenea, pentru a nu face excese, este recomandat un sistem de "recompense", inspirat din condiționarea Pavloviană: după 2-3 pagini de curs citite, **poți mânca ceva ce îți aduce bucurie**, dar ai grijă la kilogramele pe care le poți câștiga în plus. Indirect este posibil să înveți mai repede și să nu mai asociezi această acțiune cu un lucru neplăcut.

03 **Pauzele nu sunt un lucru rău!** Majoritatea studiilor indică faptul că un adult obișnuit e capabil să se concentreze doar 20 de minute. Descoperă care este ritmul tău și stabilește pauze regulate, dar care să nu fie invers proporționale cu timpul petrecut studiind. La o jumătate de oră de studiu, o pauză de 5-10 minute ar trebui să fie suficientă. Un exemplu de program ar fi acesta: 90-120 de minute de studiu cu o pauză de 30-45 de minute, timpul perfect să ne bucurăm de un episod din serialul preferat! Că tot veni vorba...

04 **Nu e nevoie să îți abandonezi hobby-urile și plăcerile!** Bineînțeles, va fi mai puțin timp pentru ele, dar să îți petreci toate cele 16 ore din zi învățând poate fi frustrant și nu îți va aduce randamentul scontat pe termen lung. Atâta timp cât ai un plan de studiu, poți "strecura" un film între examene sau te poți delecta cu o carte înainte de culcare. Plimbările sunt recomandate, în special pentru a aerisi "creierul încins". La regimul de studiu descris mai sus, am descoperit că pauzele de jumătate de oră sunt perfecte pentru serialele de comedie ("The Office" și "How I Met Your Mother") ușor de urmărit și amuzante pe deasupra.

05 Pentru cei foarte anxioși sau cu probleme de concentrare, sugerăm să încerce **arta meditației**, mai accesibilă ca oricând prin intermediul aplicațiilor de telefon ("Headspace" sau "Calm") care oferă meditații realizate de traineri profesioniști. O sesiune de meditație poate dura oricât îți dorești, dar este recomandată o medie de 10 minute. Meditația practică zilnic, te ajută să te concentrezi și să alungi gândurile nedorite.

06 Telefonul și internetul, de care suntem dependenți, ne distrag de la studiu dar avem aici soluții: **dezactivarea temporară a notificărilor** și **fixarea de timere zilnice** pentru cele aplicațiile adictive ("Tiktok" și "Instagram") prin **folosirea unei aplicații ingenioase** cum este "Forest", creată special pentru a te ajuta să stai departe de telefonul mobil. Scopul acestui "joculeț" o reprezintă creșterea unei păduri. Un copac plantat, va crește atâta timp cât tu studiezi și nu părăsești această aplicație. „Forest” are multe lucruri de oferit! Vă las pe voi să le descoperiți, în cazul în care v-am trezit interesul. Interesant este faptul că dacă deblocați varianta premium, aveți posibilitatea de a planta un copac adevărat în țări defavorizate, precum Uganda, Camerun, Senegal, Tanzania sau Kenya.

07 Dacă învățatul ți se pare prea sec și monoton, **poți asculta muzică!** Dacă ești genul care se poate concentra în aceste condiții, atunci nu contează genul muzical, dar pentru cei care ar dori un fond muzical, "Spotify" și "Youtube Music" sunt pline de playlisturi de muzică lo-fi sau coffee shop.



08 Bineînțeles, **nu trebuie să neglijăm dieta.** Pentru o memorie mai bună, chiar dacă pare un lucru banal, **apa este una dintre cele mai importante resurse.** În momentul în care suntem deshidratați, atât memoria cât și atenția au de suferit. Foarte important este să consumăm multe legume și fructe proaspete, dar să nu uităm de super-alimentele precum OLEAGINOASELE. (Baftă la Nutriție!)

09 Foarte mulți studenți își pierd nopțile învățând și foarte important de știut este faptul că oboseala reduce foarte mult capacitatea de concentrare și memorare. **Somnul corespunzător** ajută la restabilirea echilibrului energetic la nivelul sinapselor nervoase din creier și reface echilibrului hormonal perturbat din cauza adrenalinei secretate în cantitate mare în condiții de stres.

10 Ultimul sfat și poate cel mai important pentru sănătate, este să desfășurăm o **activitate fizică moderată:** exerciții fizice, mers pe jos, alergare sau yoga, toate acestea fiind metode pentru a reduce eficient stresul.

“PS: Niciuna din aplicațiile menționate mai sus nu au sponsorizat acest articol, dar aprecierea noastră pentru ele nu ne-a putut opri din a le menționa.”



Name: Max

Breed: Mixed

Sex: Male

Age: Born in december 2018

Size: Medium

Status: Neutered

Health: Max has a digestive malabsorption, meaning he will always need a specifically adapted food.

His story: Max was found at 4 months old in the street, in the outer part of Bucharest. He has been taken care of by the association Charly Le Blanc since then.

Temper: Max is a lovely dog who is always looking for a hug and a moment to play !

Contact: If you think you are the right family for Max or if you know someone who is, you can contact the Association Charly Le Blanc. They speak **Romanian, English and French !**



Association Charly Le Blanc



asso_charly_le_blanc

Adoption



LA BOITERIE CHEZ LE CHIEN ET LE CHAT

by Yann Daniel

“ Les boiteries sont des motifs fréquents de consultation et il faut pouvoir en trouver les origines pour appliquer un traitement approprié. La boiterie est une incapacité à se déplacer correctement sur un ou plusieurs membres.”

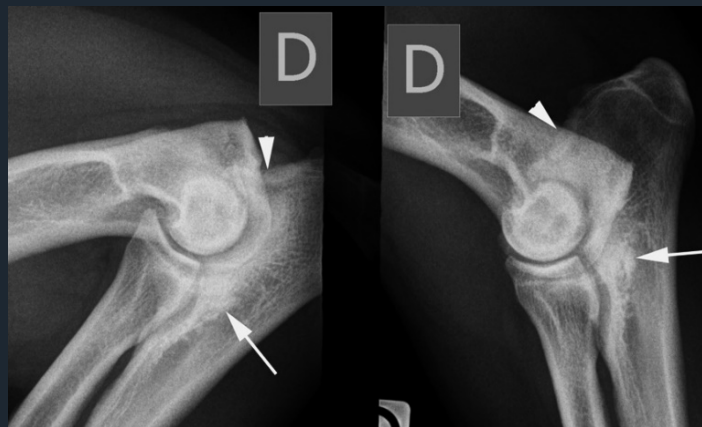
Elle se manifeste par une absence d'appui du membre sur le sol pour les boiteries visibles et un appui bref et rapide qui montre cependant une instabilité dans le cas de boiteries plus complexes.

Etiologies:

- Les traumatismes (ex : fracture /hernie discale traumatique)
- Les corps étrangers (ex : épillets)
- Les plaies (ex : brûlures de contact/ brûlure par produit corrosif/ blessure du coussinet, abcès)
- Les pathologies de l'appareil locomoteur (principalement les articulations : rupture du ligament croisé antérieur, arthrose, dysplasie de la hanche, luxation de la rotule, fragmentation du processus coronoïde du coude)
- Les tumeurs

Mais comment poser un diagnostic sur l'origine de la boiterie ?

Tout d'abord si l'animal est douloureux il faudra prévoir une sédation pour pouvoir manipuler l'animal et le(s) membre(s) touché(s). On peut envisager différents protocoles anesthésiques comme le Butorphanol ou la Buprénorphine. L'anamnèse de l'animal rapportée par le propriétaire va bien évidemment orienter le diagnostic (la chute d'un animal nous amènera à la troisième étape directement)



Radiographie montrant la fragmentation du processus coronoïde du coude chez le chien

Pour poser le diagnostic nous pouvons procéder par étape :

- 01** Un examen clinique général doit être réalisé avec une **observation minutieuse et palpation** des pattes, des **espaces inter-digités** et des **coussinets** pour voir d'éventuelles lésions (brûlure/plaie/ perforation)
- 02** Si aucune lésion n'est observée, il faut réaliser un **examen orthopédique complet** pour déceler une pathologie articulaire (examen de l'épaule, du coude, des hanches et des genoux).
- 03** Si aucune anomalie n'est remarquée nous pouvons proposer des **clichés radiographiques** (profil + face) du membre touché pour tenter de trouver des fractures, de l'arthrose, une tumeur osseuse (ou des tissus mous) ainsi que la luxation des rotules ou une dysplasie de la hanche.
- 04** Pour des boiteries complexes nous pouvons **avoir recours à l'IRM** pour diagnostiquer une pathologie neuromusculaire ou une hernie discale qui expliquerait la boiterie.

HOW TO USE THE BEHAVIORAL SCIENCE TO OUR ADVANTAGE IN THE VETERINARY FIELD?

by Bryan Meguira

As future vets, we all have been in this situation where a dog or a cat needs to be held by 4 vets and nurses for a blood sampling. I am sure that most of us already have been scratched or bitten, and we all have at least one memory of a cat that “flies on the walls” of the clinic while we are closing all the doors and windows before we run after him, hoping that after all this rally he would be tired enough for us to put this catheter we already opened twice.

Yes, animals are, most of the time stressed when they come to the vet. But can we really blame them for this? After all, the situation is stressful, cats were in a cage during their owner's ride to the clinic, dogs have memories of a non-comfortable needle penetrating their skin, and no matter how many times they will express their discomfort in their way (coming soon: an article about dog's body language), we contain them until we get what we were looking for.

I used to think that things were made to be like this, until I lived two experiences that changed my pre-designed ideas. The first was my dog trainer course, and the second was a summer practice with a behaviorism specialist vet in Paris, the Dr. Thierry Bedossa. In his clinic, I saw happy healthy animals, excited to come for their annual shot.

How did he develop such a skill? Did he have kind of a metaphysical connection with animals that make them feel well when they are with him? Well, probably, but not only. The answer is way more rational than this, and the secret lies in conditioning and its two major classes: the Classical conditioning, and the Operant conditioning.

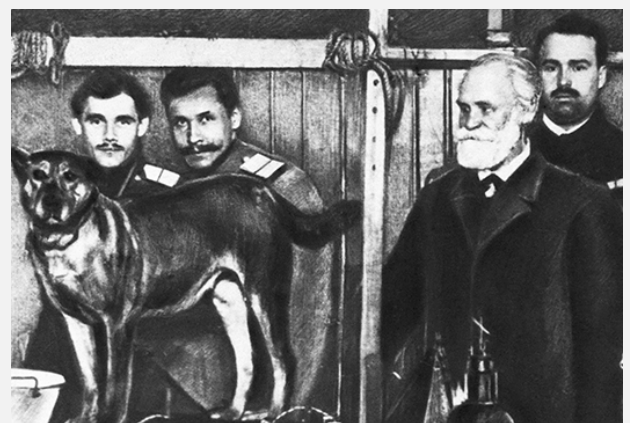
“The aim of this article is, of course, not to transform you into a behaviorist or a trainer, but to give you a quick overview of the learning theory that can be applied to all living beings. Once you will understand the idea, life is going to be easier. For you as vets, for the owners, but more than anything, for the animals.”

Before we talk about the operant conditioning, I think we must first describe the classical conditioning, highlighted by Ivan Pavlov (1849-1936) in 1903. The principle of this conditioning is the association of a stimulus with an involuntary reaction of the organism.

The key word here being involuntary. Indeed, we will see further that this is the main difference with the operant conditioning. In other words, the stimulus induces a reaction that you cannot control consciously.

Ivan Pavlov created this model observing his own animals. Indeed, he paid attention that his dogs were salivating when they were seeing meat. The idea was simple: what if he could induce this behavior without even showing them the food?

Pavlov then added a stimulus: a ringing bell. Each time he was ringing, he showed them meat right after, and the dogs were salivating.



Ivan Pavlov (1849-1936) on the right, with the white beard, and one of his dogs. <https://thepsychologist.bps.org.uk/volume-33/june-2020/kingdom-dogs>

After a few repetitions, the dogs understood the system: when the handler rings, food is coming, and they were drooling just by hearing the sound of the bell. This is the classical conditioning, and our lives are full of examples of it!

Advertisements are one of them: the association of a strong stimulus with the product, in order to induce a Pavlovian reflex.



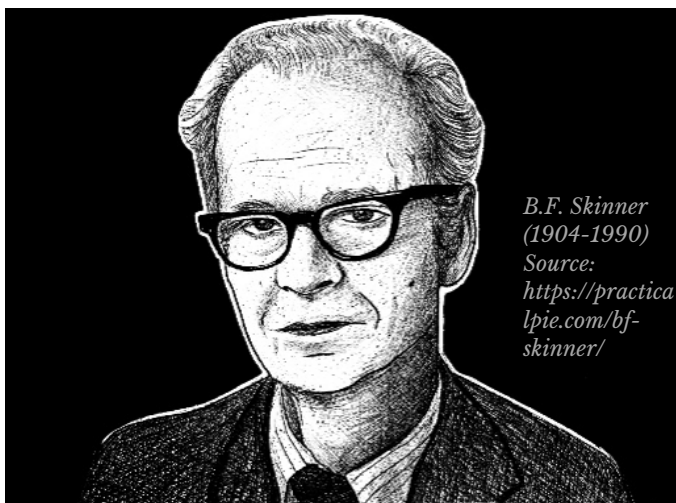
This ad is not a real one, and it's exaggerated on purpose in order to highlight our idea: "advertisements are working following the Pavlovian reflex idea"

if after seeing this you want to eat a burger: congratulations, you've just been Classically conditioned!

Credit: Bryan Meguira with Canva.

The operant conditioning

Now that we described the classical conditioning, we can move on to the second type of conditioning: the operant conditioning, first described by the behaviorist Burrhus Frederic Skinner (1904-1990).



*B.F. Skinner
(1904-1990)
Source:
<https://practicalpie.com/bf-skinner/>*

For B.F. Skinner, the behavior of humans and animals is best explained through the concept of operant conditioning. It suggests that human behavior boils down to environmental operant conditioning as well as reinforcement, whether through rewards or punishment.

The experiment

Skinner highlighted his idea using a device created for this purpose: the Skinner box.

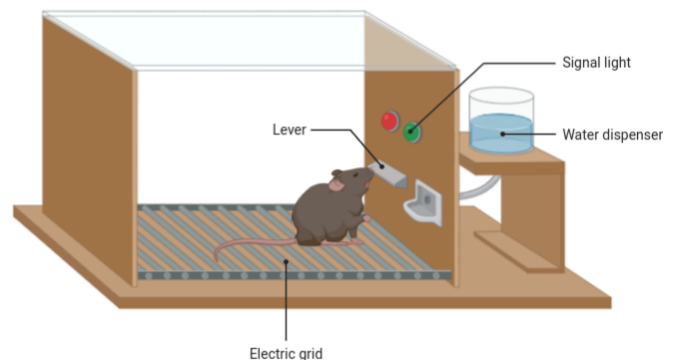
A rat placed in an empty box, with only a button on one of its walls. The aim of the experiment is to "teach" the rat to push it on command. If the rat touches it, he gets rewarded. The first occurrence of this behavior is mostly a question of chance; rats are curious, so once in the box they will look for a way to exit, and, by "mistake" they will find it. After this, each time the rat gets close to the button: he gets rewarded, while he gets punished when he does an action not related to it. This model is called "shaping" because we shape a behavior according to a pre-designed mold.

And at the end, of course, we taught the rat to click on the button.

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The skinner box. www.app.biorender.com

From this experiment, we can draw 2 conclusions:

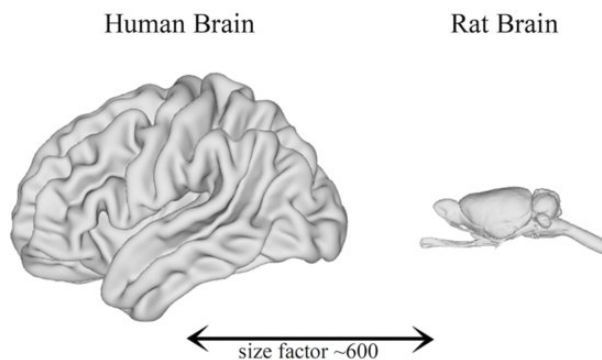
- Behavior associated with a reward will be repeated.
- Behavior associated with a punishment will be avoided.

Now we taught the rat to push the button using food as a reward. But the problem with food, is that animals, even the most voracious, are limited by their appetite. If Ratatouille's stomach is full, why would he push the button again?

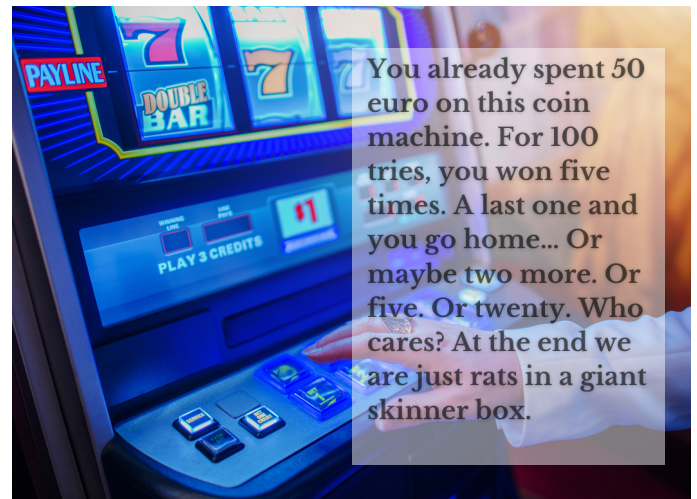
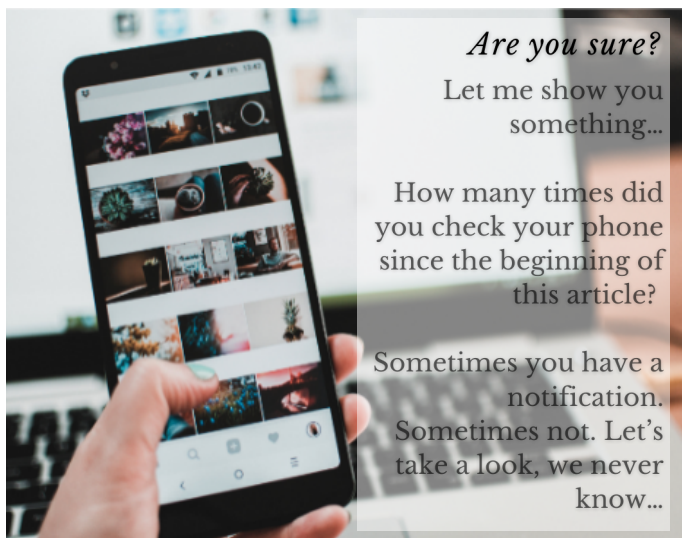
Now we taught the rat to push the button using food as a reward. But the problem with food, is that animals, even the most voracious, are limited by their appetite. If Ratatouille's stomach is full, why would he push the button again?

And this is where the Skinner box's experiment taught us another important notion: the variable ratio reward. In other words, to get the best results, when the animal knows a behavior, the rewards should be given randomly: that's how we create addictions. Sometimes the animal gets rewarded for a behavior, sometimes he won't. This way, it is always worthy to try the taught behavior, because it might be paid of this time, even if last time it wasn't. Therefore, the behavior is not done for food anymore, but for the possibility of being rewarded for his effort. Thereby, the rat will receive a treat for pushing the button 5 times in a row. Then nothing for the next 3 times, then only once, then one time yes, one time no, etc.

You might be thinking "well, rats are stupid. I am not a rat; such a thing doesn't work on me!"



Human brain vs Rat brain. But, are they really working in a different way? Source: https://www.researchgate.net/publication/346942721_Role_of_Nuclear_Imaging_to_Understand_the_Neural_Substrates_of_Brain_Disorders_in_Laboratory_Animals_Current_Status_and_Future_Prospects/figures?lo=1



As we mentioned it before, reinforcing a behavior will increase its frequency, while punishing it will decrease its chances to happen. But what reinforcement and punishment mean?

Both of them has two variations: positive, and negative. It is important to take those two terms for their mathematical meaning: "Positive +" can be replaced by "adding" and "negative -" by "removing".

It is important to precise here that all those definitions and examples only have an informational value and should not be directly taken as an advice. Indeed, we will see further that not all those theories are right to apply on our animals, but I strongly believe that in order to know how to behave, we also need to learn how not to behave.

Extinction

WHAT IS THE IDEA OF EXTINCTION IN BEHAVIOURISM?

As its name suggests, extinction is a way to "delete" a behavior. Indeed, we saw before that punishment decreases the occurrence of a behaviour, but this unlikable action can still occur, while extinction... Extincts it.

HOW DOES EXTINCTION WORK?

As we said before, Behavior associated with a reward will be repeated, while behavior associated with punishment will be avoided. What about a behavior associated with nothing? It will disappear.

In other words, when an action stop being associated with any consequence, this action is likely to be erased from our behavioral catalogue. For example, if the rat in the Skinner box presses the button 100 times without being rewarded... He would not press it anymore.

Examples

I

Each time your dog comes when you call him, he receives a very tasty treat. So he comes more often.
POSITIVE REINFORCEMENT



II

You are a bad student. Your grades are very low, so your parents don't allow you to play video games, which is a very uncomfortable position for you. In consequence, you stop being a bad student, so your parents lift the punishment. You've been NEGATIVELY REWARDED!



III

Your cat annoys you while you are studying, so you slap him on the nose. In consequence, he stops doing it.
POSITIVE PUNISHMENT.



IV

It's again you and your video games. Instead of studying, you are playing. Your father comes, and turn off your play station. To punish you, he removed a pleasant stimuli, you've been negatively punished.



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Credit: Bryan Meguira

WHAT YOU SHOULD REMEMBER ABOUT EXTINCTION IN BEHAVIOURISM?

Remember the variable ratio reward? Well, it is also working with extinction. Indeed, at the beginning, your animal may think that he must try harder to be rewarded again for a behavior that used to be reinforced in the past. Before it disappears, the frequency of the behavior will increase. A simple example to understand:

For the last 2 years, you opened the door of your building with the same digicode. One day, you try the same code that used to open your door, but it doesn't work anymore, so you try again.

Nothing. The 4th time you are not typing, but striking the numbers, until you understand it will not help, and you learn the new code. The following days, you will probably struggle again with this issue, until you finally do automatically the new code, and forget the old one.



Extinction, Bryan Meguira

The behavior “typing the old code” has been extinguished.

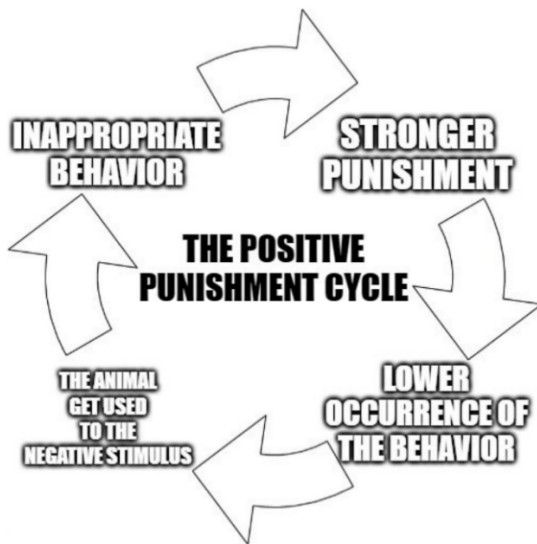
Why the positive punishment should be banned in animal training?



B.F. Skinner once said: "What is love if not another name for positive reinforcement? Or vice versa." I find this sentence very strong and meaningful for all animal lovers. One of the biggest issues we face as animal lovers is the fact that unfortunately, positive punishment works... But it also doesn't work. Yes, it's a paradox, I agree. But let me explain myself: a barking dog will maybe stop barking the few days following the usage of an “anti-barking” collar releasing an electric current on the dog's throat each time he barks. Maybe. You will be happy, and your neighbors as well. But what about your dog? What about the unpleasant feeling that led him to bark? It will still exist. The only difference is that your dog will suffer silently. In medical words: the positive punishment cured the symptom, not the pathology. Furthermore, another phenomenon could happen: the habituation. The animals might get used to the pain provoked by this device, and just keep barking, ignoring the pain. Subsequently, the owner might put on more and more pressure and painful stimuli on the animal, and therefore, not getting out from this vicious circle.

Using the positive punishment as a training method will have several consequences:

- Decrease of the confidence between the trainer and the animal.
- Decrease in the animal motivation.
- Decreased efficiency compared to other methods.
- Increased risk of accidents such as bites.
- Painful for the animal.



The positive punishment vicious circle. Credit: Bryan Meguira

Is this really the way we want to convince our beloved animals to do what we want them to do? I don't think so.

There is also an ethical question behind this subject: do the animals really have to obey to our wills at any price? Do they have to do what we want from them because they **MUST**, or because they want to?

I will let this question open.

The Force Free training (FFT)

First, I want to make a distinction between “force free training” and “positive training”. The two are used to describe the same idea, but as a dog trainer, I prefer to use the first one. The reason is simple: I think that every day, we have “non positive” impact on our animals. Is a leash positive? No, but it is still important as a security device. Is it positive to let our dog or cat alone 8 hours per day when we're at work? Again, no, but we cannot spend the entire day with them, and thousands of years next to us taught them to adapt.

And so on. That's why I prefer to use the terms “force free” with the underlying idea of not using any restrictive or violent method to train animals.

?

In a few words, we can sum it up in this way: matching classical and operant conditioning principles banning any restrictive aspect.

The Clicker

Do you remember Pavlov and his bell? The clicker works on the same idea. At the beginning, we create a conditioning: we click, and we give a treat to the animal, until he associates the two; once the animal hears the click, he knows that a reward is coming. This is the classical conditioning aspect of the FFT.

The operant conditioning

Once the animal associates the click with the reward, the operant conditioning can start. Like the rat inside his box, the dog, or the animal you try to train, for each step to the behavior you are looking for, you will click, and reward, until you get the whole behavior.

The conditioning is that strong, that the animal is looking for the click, more than for the reward. You “created” an animal to love doing hard things. By the way, our brain works the same way too! You can literally teach yourself to love doing hard things. Remember this when the exam session will come!



Behavioral techniques used in Force Free Training, Bryan Meguira

“ To create this atmosphere, we should respect the animals for what they are: animals; avoiding anthropomorphism and give them the time to be ready for exams that can be sometimes unpleasant, especially the first time. We have a huge responsibility over puppies that come for the first time: we can create good memories, and excitement to come to the vet', or the opposite. So be gentle, be generous, don't hesitate to reinforce them for passing this first test with success. ”

How can we use it in our veterinary clinics?

As you understood, if training was a pathology, we would consider it as chronic rather than acute: its treatment is lifelong, it's a daily cure, and the owner is, at the end, the most important person in this whole project. But as vets, we also have a huge responsibility.

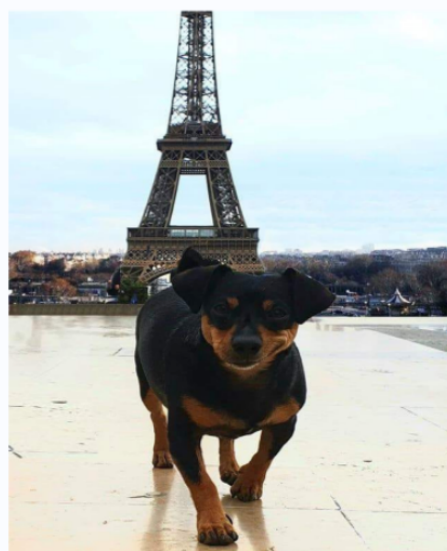
At the beginning of this article, I talked about Dr Bedossa's clinic. After reading this, he wanted to add a point I didn't talk about: creating a pet friendly atmosphere. In his clinic, dogs, cats, and even a parrot, are free, and comfortable, which by mimetics help the new animals not to feel alone. So, this would be our first intention. A veterinary clinic must be more than a place for sick animals; it should also be a place where they feel well. To create this atmosphere, we should respect the animals for what they are: animals;

avoiding anthropomorphism and give them the time to be ready for exams that can be sometimes unpleasant, especially the first time. We have a huge responsibility over puppies that come for the first time: we can create good memories, and excitement to come to the vet', or the opposite. So be gentle, be generous, don't hesitate to reinforce them for passing this first test with success.

Our responsibility is also to learn behavioral sciences, communication, and psychology of the animals we are working with, in order to be able to reply to the owner's question as much as possible, and to help them to have the best life they can with their 4 paws best friend. At the end of the day, I think that healing the body is good, but having a healthy and confident animal is better!

...AND WHAT DO WE OBTAIN ?

Happy, healthy and smart animals



Photos by Bryan Meguira

Conclusion:

“ This subject has been fascinating me for a few years already, and of course, each animal has his own history, his own personality, and what's true for one, is not always for the other. I could also have talked about the way dogs and cats communicate with us and with other animals, about how we need to prepare animals for unpleasant triggers, about medical training in general and a lot of other subject, but it would have been a whole thesis project. I however hope that it convinced you to look for more information, and to naturally chose tolerance over violence. Because I strongly believe that with a bit of patience and a lot of love, we can do miracles. ”



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PCR DIAGNOSING

by Maria Nestian

“Nowadays the PCR test is well-known for its ability to detect Sars-Cov 2 infection even before you have the first symptoms. But this kind of tests are used worldwide to diagnose a variety of infections, not just the one that changed our lives in the past two years.”

Even in veterinary medicine it helps us treat your beloved pet. Whenever one of our patients is ill we make every effort to find what is the cause.

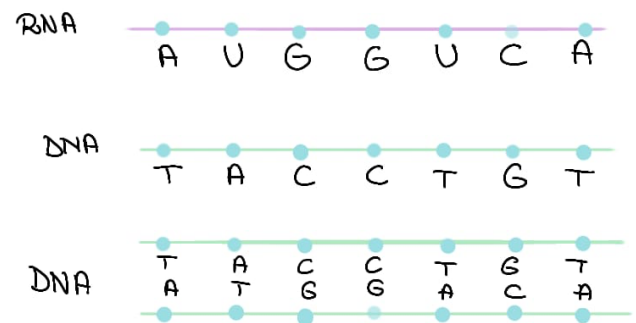
Sometimes it may be easy to find that he ate chocolate and treat him specifically, but there are days when we need to search deeper. It becomes harder and harder to discover the pathogen as it becomes smaller and smaller. Fortunately, PCR tests help us give a final diagnosis so we can give the best treatment for your pet.

PCR (polymerase chain reaction) can be used for viral diagnosis like Aujeszky's disease, that affects pigs, bluetongue disease and many more. There is a bundle of types of PCR tests and every laboratory uses the one that suits their needs the best. The first reports of PCR uses in veterinary diagnostic practice is from the late 1980s; PCR being especially applicable where traditional diagnostic methods require long and complex culturing procedures or intricate processing.

How PCR works?

The general PCR steps involve denaturation, annealing and extension.

Firstly, we need the specimens. The one used for viral detection need to be purified, leaving just the DNA of interest. In the case of RNA viruses we need to purify and transcribe it to the complementary DNA. We mix the primers, DNA sample, polymerase enzymes and the buffer in the specific PCR tube. After this we are ready to start the PCR procedure that is run by repeated cycles of heating and cooling.



Transcription of RNA to DNA

01 Denaturing

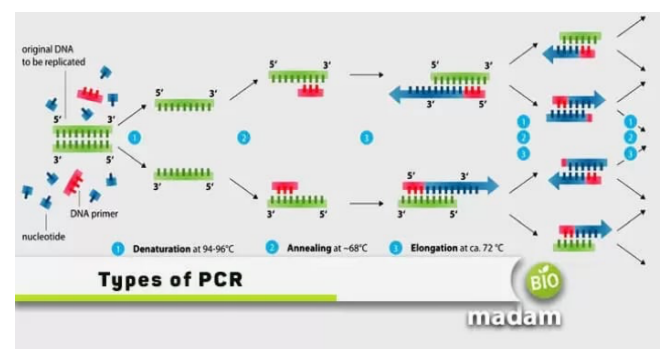
The mixture is heated to 90-95 C. In this step the double-stranded molecules are separated to form single strands.

02 Pre-annealing

This time the temperature is lower, set between 37 and 70 C depending on the sample. In this step specific annealing between the primers and the single strands of the target DNA.

03 DNA-synthesis (primer extension)

The temperature is increased between 67 and 70 C. Now, the polymerase extends primers by using each single-stranded target as a template for a new DNA synthesis.



Types of PCR

The cycle is repeated creating new DNA molecules. By performing 25 to 30 cycles a 33.6 million-fold amplification to the target could theoretically be achieved within 3 h. However, due to decrease of enzyme activity and other factors, one cannot expect more than an approximately 10 6-fold amplification of the target in a single PCR assay.

To understand better the importance of PCR tests, I will give you the example of pseudoarabies, a viral pathogene that may establish latent infection in swine following a primary acute infection can be detected using polymerase chain reaction. The latently infected animals are symptomless and do not shed virus. However, virus can periodically be reactivated from these carriers, spreading to susceptible animals and causing new outbreaks. After the acute infection disappears and latency has been established, infectious virus is difficult to detect by standard techniques. The viral DNA molecule persists in several organs of the pigs, but in low quantities. That makes it very hard to apply any traditional diagnosis methods and be sure you obtain a real diagnosis.

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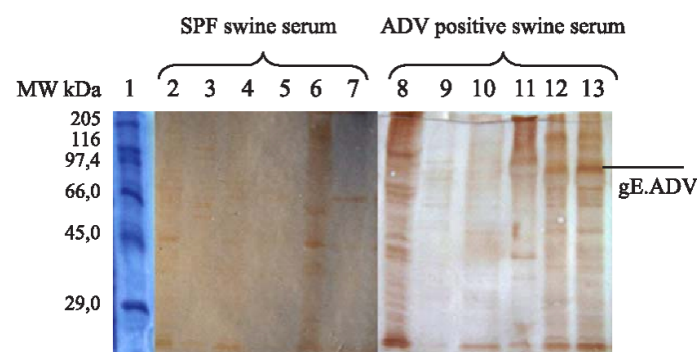
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Polymerase Chain Reaction (PCR): Steps, Types, Applications - MICROBEONLINE.com

Applying PCR methods you are able to multiply the DNA molecules from the sample and obtain a final diagnosis.

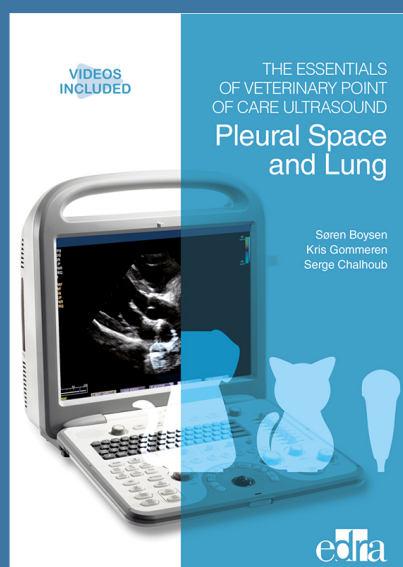


Cloning and expression of Aujeszky's disease virus glycoprotein

Conclusion:

“The next time you hear about PCR tests remember how useful it is, not just in diagnosing Sars-cov-2 in humans, but in helping doctors treat their patient even if the patient is a furry cat, a cut pink pig or a human.”

BOOK OF THE MONTH



We are extremely excited to announce brand new book published by 3 masters; Dr. Søren Boysen, Dr. Kris Gommeren and Dr. Serge Chalhouh

This book is designed to be a reference for both the new and experienced veterinary point-of-care sonographer. It includes many key tips, tricks and any additional information that we as nonradiologists or cardiologists have found helpful in assessing the pleural space and lung. It covers a step-by-step, how-to approach to performing pleural space and lung ultrasound and uses a binary question approach to allow novices and experts alike to master and grow their skills. Specific techniques, key criteria to assess, and image interpretation for each of the following binary questions about the pleural space and lung: “Is there pneumothorax?”, “Is there pleural effusion?”, “Is there alveolar interstitial syndrome?”, “Is there lung consolidation?”, “Is there pleural thickening?”, and “Is there pleural irregularity?”. What each of these findings represent and how to differentiate them from other pathologies is also discussed along with a section on pleural space and lung procedures. Finally, limitations and pitfalls for each binary question are also covered. This book should be helpful for any veterinarian, vet student, intern, resident or even technician who is currently learning or practicing veterinary point-of-care ultrasound. (The authors)

WHAT ABOUT THE MANAGEMENT OF TWINS IN MARE?

by Chloé Loir

Twins are not desirable in mares; in 70% cases these gestations result in early resorption before day 16 of gestation or in abortions between 8th and 9th months gestation. In few cases, when foaling occurs one is alive and the other is dead (mummified) or both are alive but very weak, not well developed and do not survive more than few hours.

“Spring is coming meaning foaling season is coming!”

Twins are not desirable in mares; in 70% cases these gestations result in early resorption before day 16 of gestation or in abortions between 8th and 9th months gestation. In few cases, when foaling occurs one is alive and the other is dead (mummified) or both are alive but very weak, not well developed and do not survive more than few hours.

In practice, the clinician can use different techniques to manage these twin gestations:

Manual reduction

What we should know : Increasing size of the embryonic vesicle, coupled with the increasing tone of the early pregnant uterus, will lead to the fixation of the conceptus at the base of one uterine horn by day 16.

It's then important to carefully evaluate both uterine horns through ultrasonographic examination before day 16, because the vesicle moves freely within the lumen of both horns and the uterine body. If twin vesicles are detected, then manually separating them before day 16 will be easier. Successful elimination of one vesicle is more likely at that time because the uterine walls are thin and minimal pressure is required to crush a vesicle. TIPS : the “pop” sound can often be felt when the vesicle ruptures.

ATTENTION : Confusion with endometrial cysts can be frequent. Note the size and location of any cysts at the time the mare is being examined for breeding. You can perform reevaluation one or two days later thinking about the fact that embryonic vesicles should grow 4mm per day and are likely to move.

°Manual reduction of bilaterally fixed vesicles requires less manipulation than with unilateral twins. Before fixation of the vesicle: > 90% success rate

After fixation (before day 30): 75% success rate

°Manual reduction of unilaterally fixed vesicles:

- The clinician should attempt to move the more proximal vesicle toward the tip of the uterine horn. At this location the manual reduction procedure is less likely to disrupt the remaining vesicle. The vesicle can be crushed by pinching it between the thumb and fingers.
- Alternatively, the vesicle is squeezed against the mare's pelvis using the ultrasound probe or fingers until it ruptures.
- After fixation and with unilaterally fixed vesicles (<20 days), the clinician can use the “snowflake” method, which consists of applying pressure with the transducer until hyperechoic spots (resembling snowflakes) are observed within the embryonic vesicle.

Recheck the mare few hours later or the next day if you failed to reduce the vesicle because the embryonic vesicles grow in diameter and might be located in an easier location to perform manipulation and manual reduction.

Natural reduction

There is negligible natural reduction of twins before day 15 and it decreases starting day 40. Fortunately, natural reduction to a singleton is far more likely with unilaterally fixed vesicles. More than 80% of unilaterally fixed twins are likely to naturally reduce to a singleton, with over half of these occurring between days 16 and 20.

Prostaglandin (PG) use to end the gestation

This should lyse the CLs (Corpus Luteum) that resulted from the double ovulation, and the precipitous decline in progesterone will bring the mare back into estrus. Ultrasound confirmation is safer. This treatment must be given before day 35 because once the endometrial cups begin to form, repeated PG injections may be necessary to terminate the pregnancy.

Eg : Natural PG analog : Cloprostenol

0.25 mg (250 µg) to 0.5 mg (500 µg) of cloprostenol (as sodium salt) per mare, namely:

- Light breed: 1 mL of solution intramuscularly
- Heavy breed: 2 mL of solution intramuscularly

Eg : Dinolytic (Dinoprost)

5 mg to 10 mg of dinoprost, i.e. 1 to 2 mL of solution per mare.

Prostaglandin (PG) use to end the gestation

Technique used if natural reduction does not occur or the diagnosis of twins is not confirmed until after 30 days.

Administer:

- Flunixin meglumine ● Oral altrenogest (suppress oestrus) ● Lidocain (reduce uterine straining)



Figure 1: Ultrasonographic visualization of fetus and puncture guide.



Figure 2: Needle placement within allantoic sac



Figure 3: Partial aspiration of allantoic fluid.



Figure 4: Complete aspiration of allantoic fluid

Transcutaneous (abdominal) ultrasound-guided fetal puncture

In advanced twin pregnancies (up to approximately 5.5 months), best results between 115 and 130 days gestation.

Fetal intracardiac injection of potassium chloride (KCl) is effective. Experienced operators can achieve a 50% success rate.

Procaine penicillin G can cause fetal death when injected into either the fetal thorax or abdomen, but the effect is not instantaneous (advantage: does not require precise placement of the injection into the fetal heart). Procaine penicillin G also reduces the likelihood of bacterial infection, and the injection can be visualized on the ultrasound screen. Mares should be started on oral altrenogest, systemic antibiotics, and flunixin meglumine on the day of the procedure. The antibiotic coverage and anti-inflammatory medication should be continued for 3 days in uncomplicated cases.

Once the mare has been sedated, the uterus will relax, and the location of the fetuses will shift cranially. A sedative–analgesic combination that works well for this procedure is acepromazine (10 mg), xylazine (100 mg), and butorphanol (10 mg). The smallest or most easily accessible fetus is selected for reduction. The ventral abdomen should be surgically prepared and local anesthetic infiltrated at the puncture site. An 18-gauge, 8-inch spinal needle with stylet can be used for most fetal injections, but the length of the needle is determined by the depth of the fetus from the abdominal wall. Specialized needles with echogenic tips are available to provide better visualization via ultrasound. Once the location of the selected twin's thorax is confirmed, the needle is introduced through the aseptically prepared skin, abdominal wall, and uterus.

Most abortions occur within 1 to 2 months after the reduction procedure. If the clinician is experienced in the technique, between 40% and 60% of cases reported have resulted in delivery of a live foal. One theory for the loss of both twins after an intrafetal injection has to do with the presence of vascular anastomoses between the two fetoplacental units. It has been suggested that circulation of either the injected solution or other tissue degradation products could result in the death of the adjoining twin fetus. Small anastomosing vessels are present between twin vesicles as early as 40 to 60 days' gestation.

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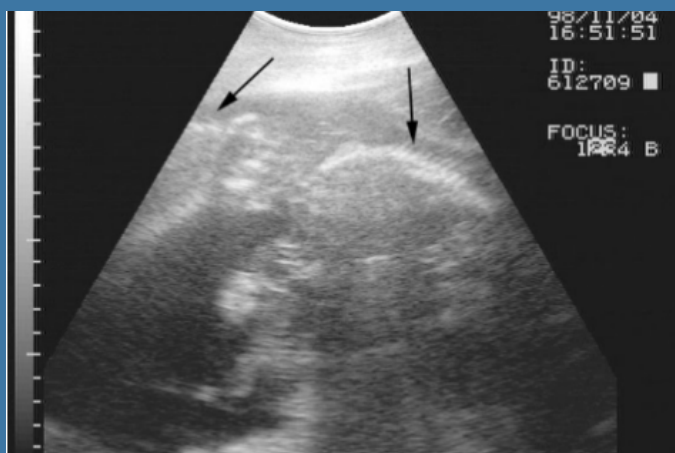


Figure 5 : Twin fetuses (arrows indicate thorax of each fetus) imaged by transabdominal ultrasonography



Figure 6 : Ultrasonogram of needle placement (arrow) into the fetal thorax



Figure 7 : Injection of procaine penicillin G along diaphragm of the fetus (arrow indicates hyperechoic location of injected PPG)

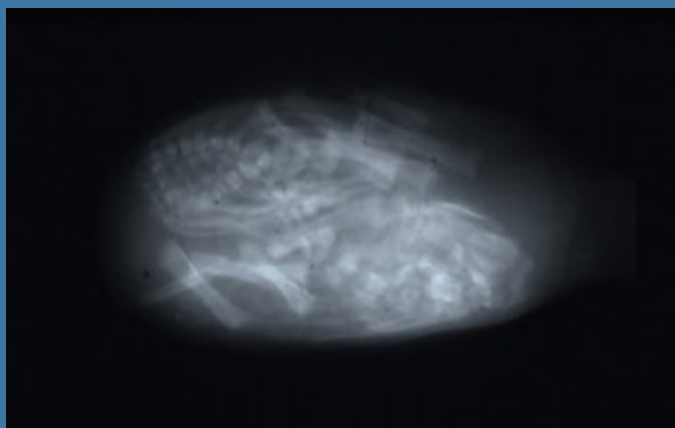


Figure 8 : Radiograph of fetal mummy (Fig. 5) showing bones present within the mummified fetal remnant

BECAUSE ADOPTION HELPS MORE THAN JUST ONE ANIMAL.

by The Campus



**Fundația
Speranța**

“Each year shelters are trying to save millions of stray, lost, abandoned and abused animals. You can be a lifetime beloved hero of a dog.

As the team “The Campus” we decided to share some dog and cat adoption advertisements starting with second issue.

But first we wanted to focus and start up with a special shelter owned by **Fundația Speranța (The Hope Foundation)**”



Speranța Foundation was established in 1996 and, for over two decades, we have done everything in our power to help our friends that cannot speak for themselves, especially abandoned and suffering dogs. Their shelter has been functional since 2001.

Aside from the pensioners, at our shelter there are 8 paraplegic dogs (each one has a special wheelchair) that lead normal lives, with daily walks and a lot of attention from our staff.



Buni. Photo Credit: Fundația Speranța Dr. Anca Tomescu

Dr. Anca Tomescu also mentioned that with a great effort and an important sponsor they also have physiotherapy area for the injured dogs.

In 2021 they had 120 dogs elder (more than 14 years). The 4th section of their shelter rebuilt from scratch.

62 dogs adopted and they are living happily with their new family in warm homes.

95 volunteers helped and Speranta shelter is very grateful to each of them.

7 paraplegic dog recieved special care and attention.

She also shared with us a touching emotional story of a dog that lived in the Speranta shelter for 19 years, until she was adopted.

Buni

Buni is the dog who lived 19 years in Speranta Shelter. Last year, on December 17, 2021, Speranta posted a text on the FB page about Buni.

After 19 years spent in the shelter Buni was adopted by a family from Cluj where she was received with all love, not only by human members, but also by four-legged members..

For the first time in the history of the shelter, a dog so old and who spent so many years in the shelter, found her happiness and family. It was an extremely impressive moment for the Speranta staff, but also for Buni.

Initially, she was called **Maronica**, but over the years Speranta colleagues in the shelter started to tell her **Buni** which is the abbreviation for **Grandma**.

At the end Dr. Tomescu added those words:

The moral of this story is to never lose Speranta (The Hope)

WINTER POISONOUS PLANTS FOR PETS

*Interview with Dr. Gheorghe V. Goran
by Mathilde Breton*

Dr. Gheorghe V. Goran, DVM, PhD



“With the winter most of us having flowers and plants in our houses, some gives us good energy, makes us remember spring or summer. Some for being Zen. But do we really know if they are toxic for our pets?”

As our previous “raise awareness on daily toxicants” article was well received by our readers, we decided to take a step forward and turn ourselves to a highly trained professional in veterinary toxicology: **Dr. Gheorghe V. Goran, DVM, PhD**. Teaching toxicology in the FVM Bucharest for the past 20 years, Dr Gheorghe V. Goran also graduated from a pharmacotoxicology master, followed by a doctorat, then began to teach and while doing so, he continued to train him self and obtained a study certificate post doctorate in 2017 in Animal Husbandry and Food Biotechnology based on Ecoeconomics and Bioeconomics necessary for Ecosanogenesis. Biodiversity.

He also managed to write 2 books as sole author, 4 books as co-author, 4 chapters as co-author in a treaty, and over 130 articles in peer-reviewed journals or communications in symposiums and congresses.

Long story short, we couldn't be more pleased to be able to introduce a professional's highly valuable contribution in our second edition of The Campus.

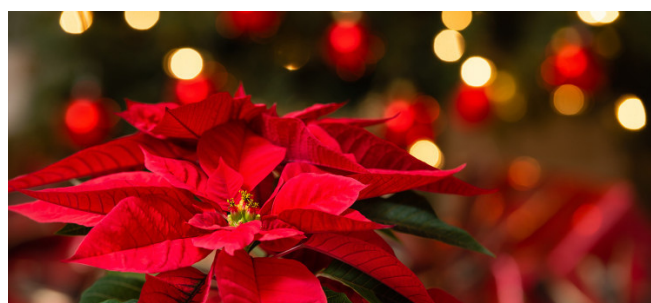
Dr Gheorghe V. Goran is going to discuss a season theme with you all: Winter rose toxicity ! Pretty nice in your living room, but quite Naughty in your pets' digestive systems.

“During the holidays, plants are very important for festive decorations. Certain decorative plants are toxic to dogs and cats.”

In some cases, only mild indigestion and discomfort will result; in other cases, the toxicity can lead to more serious health problems, even death. That being said, it's always best to keep these plants out of the reach of pets and children.

Christmas star (Poinsettia plants)

Poinsettia plant, with brightly colored leaves, contains a sap that irritates the mouth and digestive mucous membranes. If the leaves are ingested, they often cause nausea and vomiting, but a large amount of plant would be necessary to cause poisoning, and most pets and children will not do that because of the milky sap's taste and irritating sensation. Poinsettia's sap contains minimal levels of complex diterpenoid euphorbol esters and steroidal saponins.



Christmas star (Poinsettia plants) Credit: www.kachen.lu

However, most likely this kind of plant has been treated with a pesticide, and the pet could also be at risk of getting sick from ingesting the pesticide. The size of the pet and the amount of ingested plant will be the determining factors in the severity of the poisoning. **Puppies and kittens are most at risk. The plant or the pesticide it was treated with cause severe reactions that include seizures, coma, and, in some cases, death.**

Mistletoe (*Viscum album*)

Mistletoe is also a popular holiday plant. This plant, as well as its berries, have a higher level of toxicity than Poinsettia.



Mistletoe (*Viscum album*) Credit: botanic.cam.ac.uk

Mistletoe contains multiple toxic substances for dogs and cats, including toxalbumins (lectins) like viscumin. It is well known to cause excessive drooling, severe intestinal upset like vomiting, diarrhea, and abdominal pain, as well as a sudden and severe drop in blood pressure, breathing problems, and even hallucinations (manifesting as unusual behavior). If enough of this plant is ingested, convulsions and death may result.

The leaves and berries of mistletoe, even dried, should be kept out of the reach of pets, better yet, out of the house.

Winter rose (*Helleborus* plants)

Helleborus plants, commonly named winter rose, are not related to the rose family. Winter rose, like other hellebores, although rarely fatal, if ingested in fairly large amounts can prove somewhat toxic.

These plants unpleasant taste may prevent most animals from eating enough of it to become dangerously poisonous.



Winter rose (*Helleborus* plants) Credit: windyridgegardencentre.ie

Winter rose is a winter flowering plant that can cause cardiac arrhythmias and has neurotoxic effects, as well as irritant effects at digestive and renal levels. The active compounds in hellebore are a glycoside called hellebrine, a saponin - helleboreine and an alkaloid - helleborine. Helleboreine acts as a drastic purgative and cardiotonic, similar to digitalis glycosides, while helleborine has a narcotic action on the nervous system.

“Even Christmas cactus and Christmas Tree can cause irritations in the mouth as well as stomach upset. Also, we have to keep in mind that cut flowers (lilies, snowdrops, daffodils, etc.), and household plants (amaryllis, ivy, sago palm, dieffenbachia, philodendron, oleander, rhododendron, cyclamen etc.) can be toxic to pets.”

“Some decisions are hard to take; it's always easier when we get some unexpected help”

Do not forget to take your “COMMON THORACIC DISEASE” poster. It will help you in taking decisions in **EMERGENCIES**

Decision Tree in COMMON THORACIC DISEASES is written and prepared by Dr. Christopher C. Byers - Dr. Mariana Pardo and Dr. Seralp Uzun to help the future veterinarian doctors and veterinarian practitioners



WHAT IF DOGS ALSO HAD 9 LIVES ?

by Claudia Schimenti

Managing a traumatic diaphragmatic hernia (TDH) in a hit-by-car Yorkie

“As a vet student, I am getting more and more used to be on the side of the medical team when a patient enters the room. I see my professors and the clinicians I follow during my internships asking all kinds of questions to the patient owner. This is how they are collecting informations about the case and building the anamnesis: why is this animal here today? What happened to him before coming to this clinic or hospital? Is he already under any treatment? etc.

I understand how this step is essential in order to determine further which kind of examinations, and then treatment, we will choose.”

But I am also aware that veterinary medicine is not only about the animals we treat, but also about the humans who surround them. Apart from any financial consideration, we don't treat a dog the same way depending on the place he occupies in his owner's heart. This is why a part of me always wonders, what happened in the client's mind before coming here ? How much is he affected by the situation ? What made him choose this clinic or hospital, and not another one ? On the contrary, what would make him choose another practice ?

With the following story, I will try to give you an insight into a pet owner's head after her dog was hit by a car. For this, let me take you to a winter night in Bucharest, about 2 months ago, with Diana and her cute 2.4 kg Yorkshire Terrier.

What happened to Dharma ?

It was then about 11 pm when Diana and Dharma were coming back home from their usual evening walk. On their way, they crossed a street on the pedestrian cross as the light was green for them.

Sadly, a car driver who decided to turn into that street didn't take the time to stop and hit Dharma, who got abruptly projected on the ground. After that, the car didn't even stop. Everything happened so quickly in this classic hit-and-run case that Diana didn't even have the time to panic. In a surge of solidarity, the surrounding passers-by and car drivers stopped and rushed to Dharma to check on her. The little dog then got scared of them and she quickly ran back to Diana, who because of this thought her dog wasn't seriously injured.



Meet Dharma, a distinguished lady who just turned 4 years old. Credit: her owner Diana.

Nevertheless, Diana had the reflex to check on her pet vital signs and looked if she had any wound. When she noticed some blood on her, she immediately took her to the closest hospital, which happened to be a human one. The doctors there checked on Dharma quickly but concluded rapidly that she needed to be addressed to a veterinarian doctor.

Since it was almost midnight by then, Diana couldn't go to her usual veterinary clinic because it was closed, so she went to another one she didn't know as it was indicated to be open on internet.

There, the clinician performed a blood test and took a few X-ray shots. After the results came in, he told Diana that according to the X-rays, her dog probably had a diaphragmatic hernia due to the accident, and that she must be stabilized, but they had no overnight hospitalisation there.

While Diana was trying to find a proper solution she also felt like her dog was in distress, breathing rapidly and superficially as well as trembling. She forwarded the X-ray shots to her local veterinarian doctor.

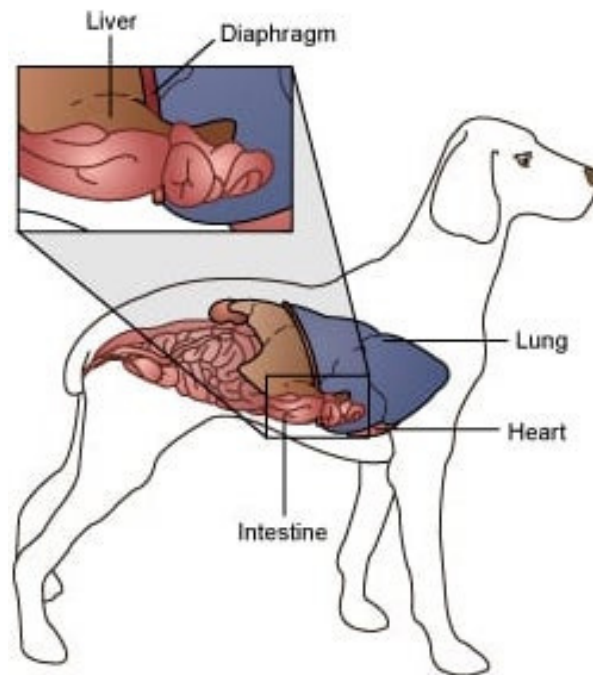
The latter agreed the X-ray shots seemed to indicate a traumatic diaphragmatic hernia, which he didn't feel like treating himself as he didn't have the right equipment for that. He therefore referred urgently Diana to our faculty's emergency hospital surgery department.

What are we talking about ?

At this point of this story, if you are a vet student like I am, you probably want to know more about the medical aspect of this situation. What is a diaphragmatic hernia, moreover a traumatic one ? How can you diagnose and treat it ?

Anatomically speaking, you probably remember that the diaphragm is a dome-shaped muscle layer separating the thoracic and abdominal cavities. During inhalation, the diaphragm enlarges the thoracic cavity by contracting and flattening, thus creating a vacuum that pulls the air inside the lungs. On the contrary during exhalation, the diaphragm returns to its original dome-like shape, therefore forcing the air outside of the lungs.

Diaphragmatic hernias can be either congenital (defect present at birth) or secondary to an accident with a motor vehicle, that is to say a blunt force trauma, thus the appellation traumatic diaphragmatic hernia. This is caused by the forceful increased pressure suffered by the abdomen at the moment of the impact. It gives rise to an important difference in pressure between the thoracic and abdominal cavities, tearing down the diaphragm at its weakest points. Nothing then stops the abdominal organs from being displaced within the thoracic cavity and from compressing the heart and lungs.



The clinical signs and treatment will depend on the organs being herniated and with which severity. Credit: Lifelearn inc.

Because of this, it is common for traumatic diaphragmatic hernias to be associated with breathing difficulties, being more or less detectable depending on the hernia severity. In addition, if the stomach also gets trapped within the herniation it will bloat as gas will accumulate inside, and the condition will need to be treated even more rapidly. In some cases, the herniation isn't diagnosed before weeks pass and it is common to encounter asymptomatic animals actually suffering from a chronic diaphragmatic hernia.

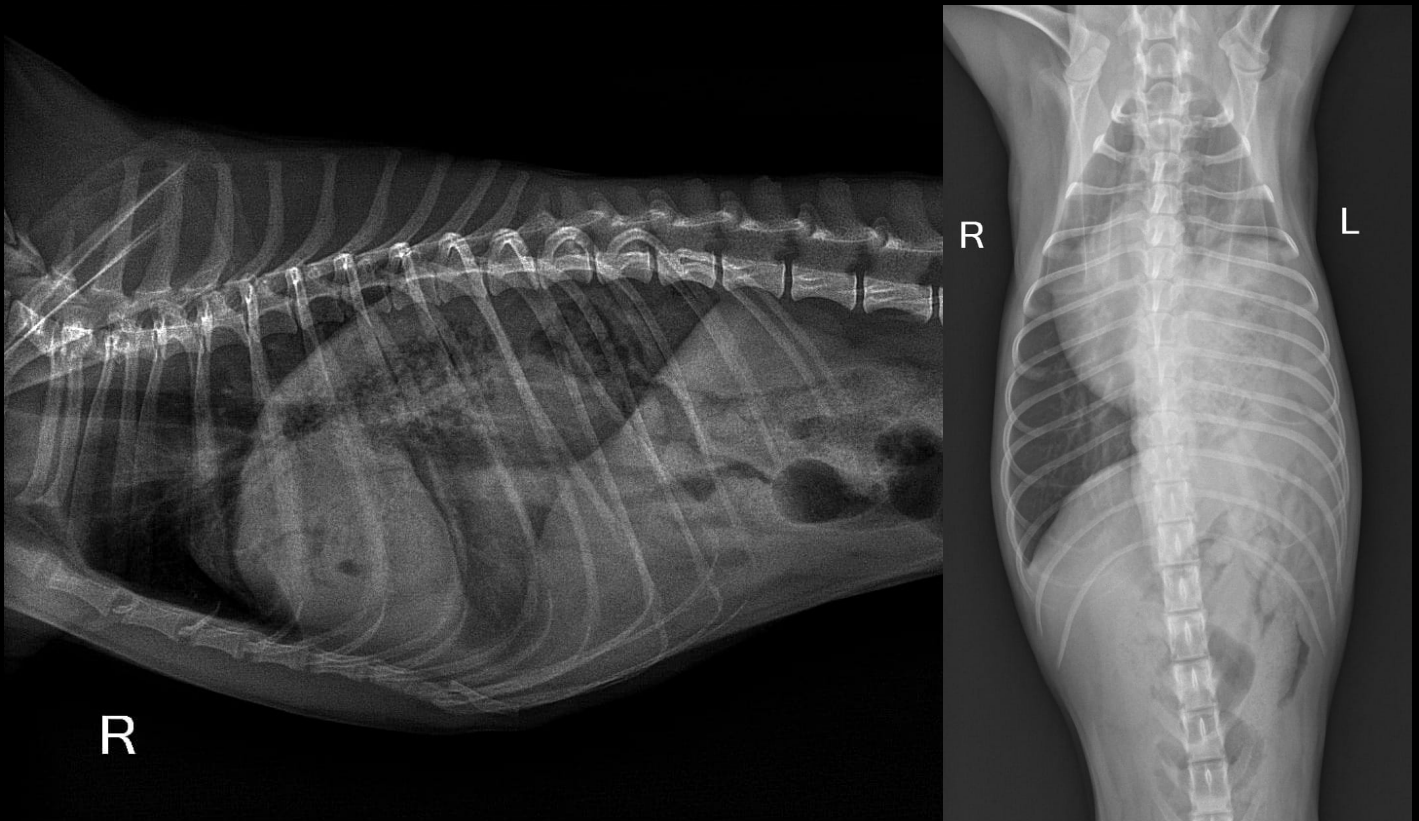
How to make an appropriate diagnosis ?

Everything starts with collecting the anamnesis! If your patient was just hit by a car, think about the conditions most commonly associated with such a situation, including the traumatic diaphragmatic hernia or the traumatic pneumothorax (if you want to know more about it, check out our article dedicated to "Dealing with pneumothorax in emergency" in our 1st issue !). Most probably, if the trauma is recent, your patient will be in shock and you will have to check for any sign of pale to cyanotic mucosa or cardiac arrhythmias. Also assess by auscultation if he has poor respiratory or digestive functions: does he have normal or absent lung sounds ? Does he have digestive sounds abnormally located in the chest, or tachypnea ?

The liver being the organ most commonly herniated through the diaphragm, it is very likely that if you do a blood test the hepatic biochemical parameters won't lie within their physiological range. A thoracocentesis might also be required if your patient suffers from a pneumothorax or a pleural effusion.

Also note that in diaphragmatic hernias that weren't diagnosed immediately, the animals may suffer from a significant weight loss that would be more noticeable than the respiratory signs.

And when it is time to make your final diagnosis, X-rays will be of great help. They may show the abdominal organs protruding within the thoracic cavity as well as changes in the diaphragm dome-like shape. It is possible to use specialized X-rays using dyes that will highlight the digestive organs to ease your diagnosis. When you don't think the herniation is not obvious when using X-rays, which will be the case if there is a pleural effusion for example, it is also possible to observe the diaphragmatic silhouette by using ultrasounds.



LL and VD x-rays shows clearly that stomach is in the thoracic cavity. Credit: USAMVB - Emergency Hospital Radiology Department

How to manage and treat such a patient ?

First thing first: if your patient is in shock, anemic and dyspneic, start an oxygen supplementation as soon as possible by using a face mask or an oxygen cage. Help him ventilate by positioning him in a sternal recumbency. Also provide him with the appropriate fluid therapy, prophylactic antibiotherapy and analgesia.

After your patient is stabilized and ready to go further, there isn't one million possibilities, because the surgical correction is the only definitive treatment for a diaphragmatic hernia.

But do you know when is the good time to start the surgery ? You are probably thinking like me, the sooner the better, but the truth is actually a little bit different.

What is the right TDH surgery timing ?

Even if our patient with a TDH needs surgical repair as soon as possible due to the emergency conditions, the surgery timing is really important. All the published papers and case reports so far show us that in reality, the mortality rates of the patients being operated in the first 24 hours after the trauma are high.

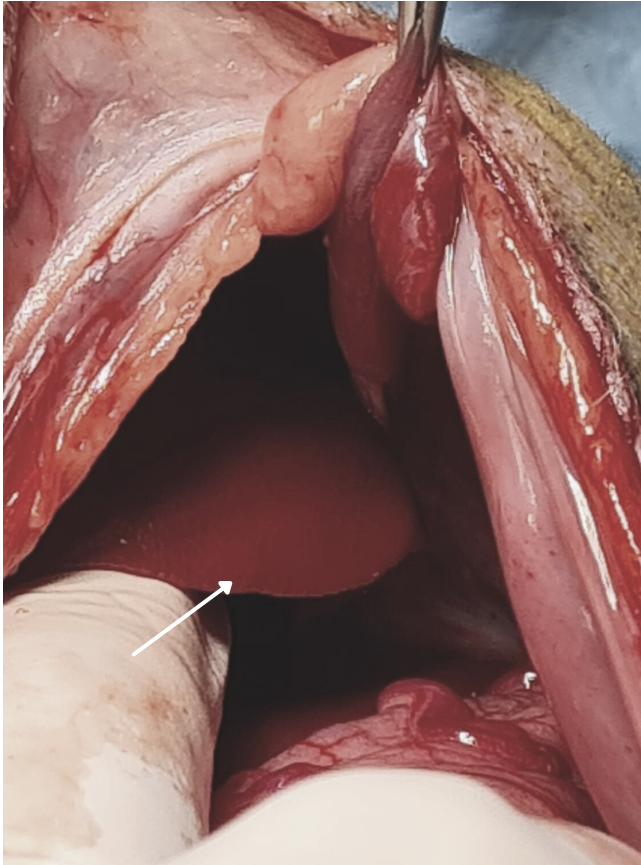
“ The mortality rate is up to 35% in the patients that have been operated in the first 24h. The cause of death in TDH mostly occurs due to a multiple organ failure, shock and failure in anesthesia. ”

Surgical management of a TDH

The aim is to replace the abdominal contents within their cavity and repair the diaphragm.

The surgery starts with a midline ventral incision from the umbilicus which you can extend cranially to the sternum. Use a Balfour retractor to inspect the cavity and the diaphragm integrity.

Extract the herniated abdominal organs smoothly from the thoracic cavity. If you notice some adhesions, make sure you remove them gently from the thoracic structures to avoid the occurrence of a pneumothorax or hemorrhage.



Surgery of Dharma: Both the right medial (white arrow) and the right lateral liver lobes penetrated into the thoracic cavity.
Credit: USAMVB Emergency Hospital Surgery Department

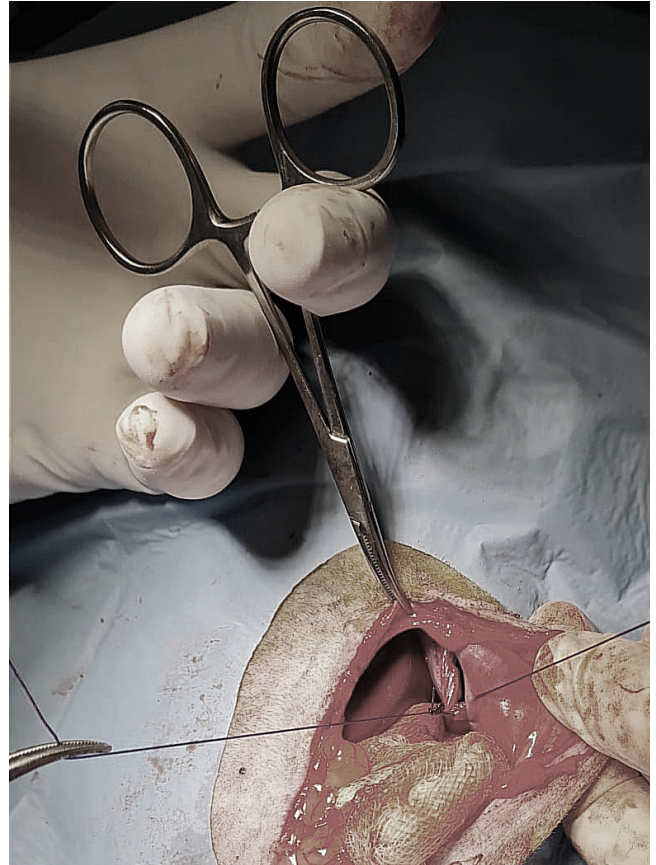
Important things to check !

While the herniated organs pass through the thoracic cavity, some of them can be strangulated. The blood circulation is therefore impaired, the blood isn't oxygenated properly anymore, and this is why ischemia develops. This was the case of Dharma's liver. After replacing the herniated organs back into the abdominal cavity, the restored blood circulation creates inflammation and oxidative damages. This is the typical **Ischemia Re-perfusion Injury (IRI)**.

To avoid this syndrome, it is important to not replace the organs too fast in their place, and to check the capillary refill time regularly.

After putting the organs back, the diaphragmatic wall is then sutured with a simple interrupted pattern, possibly by incorporating a rib in your suture for more strength if you notice the diaphragm is avulsed from the ribs.

In a TDH, the diaphragm can show either radial, circumferential or combined ruptures. The little Dharma weighing only 2.4 kg, the accident was quite violent on her and she had a combined large tear. Therefore, suturing her diaphragm was even more challenging for the doctors.



Surgery of Dharma: A PDX suture material is preferred to close the diaphragmatic tears.
Credit: USAMVB Emergency Hospital Surgery Department

Another important step during a TDH surgery is to make a thoracocentesis right before the last suture on the diaphragm. The objective is to remove the free air within the thorax to gain back the negative pressure for the diaphragm to take on its role. If you skip this step, the lungs will collapse instead of fulfilling with air.

Everything is going well for Dharma

Dharma's stomach, liver lobes and intestines are placed back into her abdominal cavity without any problem, her diaphragm is sutured, the thoracocentesis has been performed and 160 ml of free air was removed from her thorax. The team of doctors starts to be relieved.



Surgery of Dharma: Performing the thoracocentesis before making the last knot on the diaphragm.

Credit: USAMVB Emergency Hospital Surgery Department

So, what happens next ?

You can now place a thoracic drainage to prevent a potential future effusion. Wash the abdominal cavity with a warm saline solution and close it with a simple interrupted pattern.

According to ancient sources, the right thing to do after closing the diaphragm was to give a signal to the anesthetist. The latter would then squeeze the rebreathing bag of the anesthetic machine in order to fill the patient's lungs back with oxygen. This actually led to several deaths. We now know it was due to a **Re-expansion Pulmonary Edema (RPE)**.

This happens in case of a rapid and forced re-expansion of the collapsed lungs right after the surgery. Because of the decreased flexibility of the lungs, their micro vessels are more likely to be damaged while stretching due to the lungs expanding back to their normal capacity.

In modern veterinary medicine, the right way to avoid this fatal complication is to wait for the lungs to naturally re-expand at the end of the surgery, after the thoracocentesis.

Not now Dharma !

When a surgery comes to an end, moreover an emergency one, you can feel the tension suddenly dropping in the room. The doctors feel they did great working as a team, and they can't wait to announce the owner that everything went well.

But as we are working with alive organisms and not with electrical machines, there is always a room for the unexpected. During the dermal suture, that is to say the very last step of this surgery, the monitors started to ring, indicating that Dharma's respiration was critically impaired, and that she was in bradycardia as well.

So far, everything was going as planned, but the little dog became cyanotic so fast ! And it was absolutely not the moment to panic for the doctors. In such a situation, you are racing against time as each second can determine if this animal will survive or die.

The surgeons rapidly placed Dharma on a sternal recumbency and decided to make another thoracocentesis.

They were all ready to perform a CPR if she had a cardiopulmonary arrest.

Fortunately, the monitors stopped beeping. Both the SpO2 and the end-tidal CO2 came back within their normal values.

Variable	SpO2 (%)	EtCO2 (mm Hg)	Heart rate (bpm)	Respiratory rate (bpm)
Reference in dogs	≥ 95	35-45	60-120	8-16

It is time to wake up

At this moment, you probably want to shout "Bravo, Dharma is saved!". But it is actually a little bit too soon to declare victory.

After the surgery, make sure that the patient is observed attentively.

Continue the oxygenotherapy, the fluid therapy and keep checking for the vital signs minimum every 4 hours until your patient is well stabilized.

Dharma was also administered opioids as analgesics, antibiotics as well as nutritional supplements supporting her liver healing.

She was carefully monitored in the Intensive Care Unit of our hospital during several days. A proper post-operative medical supervision is absolutely essential for a good prognosis.



Dharma stayed 5 days in our faculty's hospital under proper medical supervision.

Credit: USAMVB Emergency Hospital, ICU unit

What should we remember from this story?

Be aware that for the pet owners, a clear communication with the medical team is crucial. To be as reassured as possible, they need to talk directly to the surgeon who will treat their life companion, to feel that you take the situation seriously, and refer them to a hospital if needed.

During your daily practice, take the time to inform your clients about who they can call in case of an emergency if you are not on duty. Make sure this information is also displayed online and in your practice's phone voicemail.

“ I am happy to tell you that Dharma is now doing super fine. She is back to being the cute Yorkie who enlightens Diana's daily life. We can now say she is living her best second life, and I wish her to celebrate many more birthdays in the future. We can all be heroes ! **”**

Special thanks to Diana who took the time to give me her side of this story, and who would kindly like to remind you to always double check before crossing a street even if you have the priority.

Claudia Schimenti

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About the article "life after trauma" that published in the first issue: The neurological examination of the patient, has been provided by Dr. Cristina Fernoaga

**ORIUNDE
S-AR AFLA UN
OM TRIST,
DUMNEZEU
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CAINE**

- Alphonse de Lamartine -



STORY BEHIND THE WALLS (II)

by Petre Ciprian Dragomir

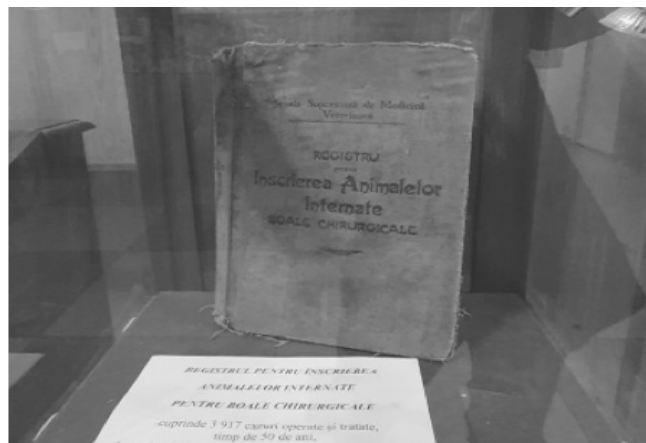
In 1883, under the direction of Alexandru Locusteanu, the Veterinary School obtained the status of Higher School of Veterinary Medicine. Also in 1883, the Higher School of Veterinary Medicine passed from the Ministry of Instruction to the Ministry of Agriculture, and Alexandru Locusteanu began the steps for building his own school, finally acquiring 3 ha of land (between Splaiul Independentei and Izvor Street) for the buildings needed for the school.

*We have to thank him, because Locusteanu and his friends bought the 3 ha with their own money and without this immense effort we wouldn't have what we have now.
to start this article with a game of imagination and to transpose ourselves into a museum, or a wing of a museum, dedicated to the history of the Faculty of Veterinary Medicine and the path it has taken through it. Let's enter the hall of our museum. "Do you know which was the first veterinary school in the world?"*



CONTINUING FROM THE 1ST ISSUE

Let's go upstairs, where I want to talk a little about the development of our faculty after the 1900s. If until now it functioned under the name of "High School" since 1921 it enters into full rights under the name of "Faculty" (At that time, it was the only veterinary educational institution in the Balkans).



Until 1948, the faculty was integrated within the University of Bucharest, to be later transferred under the tutelage of the University of Agronomic Sciences.

Just as every important historical period of our country has left its mark on the development of veterinary education in Romania, communism is also present on our historical path.

"Between what years was Romania under communist rule?"

Very correctly, from 1948 (even if history has shown us that on the territory of Romania there were communists since 1944) until 1989 when the Revolution took place, a crucial moment in the history of our country when it passes from a communist political regime, in a country with a vision and a democratic policy.



During this difficult period for everyone, the faculty is moved from its campus in Splaiul Independentei and is spread throughout the capital. Unfortunately, this scattering brings with it the teaching of courses and practical works in other buildings and improper conditions.

I invite you to come downstairs together and go to the more recent history of our faculty (we attach pictures of buildings and the old hospital).

A major renovation of all buildings begins in 1990. Ten years away, the Faculty of Veterinary Medicine in Bucharest is proud to present to the general public the opening of the Veterinary Hospital.



Fully equipped and modern for the time, it contains all the necessary departments and is designed to help and save all species of interest but keeping an important percentage for teaching activities, coming in support of students.

From the beginning until now, the faculty is in continuous development and modernization mode, both of the teaching spaces and the meter presented to the students to the new techniques discovered in the field. The proof is the "Prof. Alin Birțoiu Emergency Veterinary Hospital", the new veterinary hospital, built from scratch, which benefits from the latest equipment and which offers students the opportunity to complete their internships in order to be in contact as much as possible with the profession which they chose.

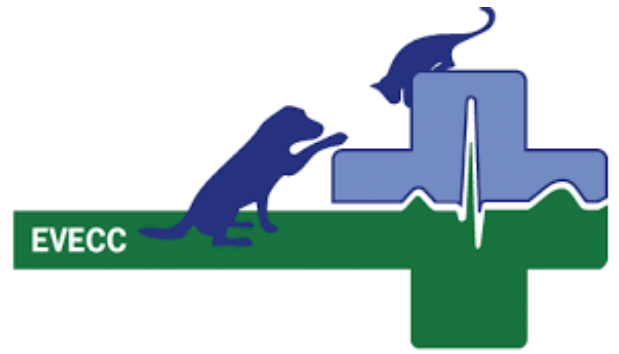
“ I want to thank you very much for participating in this tour and in this history tab of the Faculty of Veterinary Medicine in Bucharest.

Against all the stalemates she encountered, against the most difficult moments that not only this country but this world (the Union of the Romanian Principalities, the Second World War, the Cold Rabbi and its Iron Curtain), the veterinary medicine and it's study did not stop fighting, struggling and more than that developing and modernizing, all for her students.

”



UPCOMING EVENT



19th

EVECC CONGRESS

Ghent, Belgium

**19th annual European Veterinary
Emergency and Critical Care Congress
2-4 June 2022 in Ghent, Belgium.**



GO WITH THE FLOW



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MEDICINE
IS A JOURNEY**