

With this book, the Swiss veterinarian and specialist in canine orthopaedics Dr. med. vet. Patrick Blättler Monnier presents a plea for innovation in the field of veterinary orthopaedics. Breaking with outdated laws on the subject of the causes of hip and elbow dysplasia and a long overdue paradigm shift in their diagnosis form the framework within which the author takes a new look at the subject of skeletal disorders in puppies and young dogs. The focus of the book is on the promotion of a healthy anatomical and physiological development of the puppy - a goal for whose effective realisation Dr. Blättler Monnier presents a watertight prevention and treatment concept based on many years of professional experience and research, evidence-based studies and the application of modern technologies from interdisciplinary fields: LupoMove® PUPPY. This is designed to identify skeletal disorders in dogs at an early stage and to treat them with the help of an individually designed, manually-orthopaedic and kinematically controlled build-up and training plan. LupoMove® PUPPY is not only intended as an aid and knowledge enhancement for veterinarians and those interested in veterinary medicine, but also to help motivate the veterinary spirit of research and innovation, to look beyond entrenched views in one's own professional field and to open up to the benefits of integrating new diagnostic and cross-disciplinary methods.



Dr. med. vet. Patrick Blättler Monnier

LupoMove® PUPPY - The Orthopaedic Prophylaxis Programme for Puppies

The innovative development and
prophylaxis programme for puppies

LupoMove® PUPPY



Dr. med. vet. Patrick Blättler Monnier

Table of contents

1. New scientific knowledge	13
1.1 The question of the 'proper' duration of exercise for puppies	13
1.2 The problem of popular maxims	14
1.3 Science instead of 'rules of thumb'	16
1.4 The importance of the puppy's exercise duration in the light of current research findings	22
2. Introduction to Orthopaedics	25
2.1 Core aspects and tasks of orthopaedics	25
2.2 The importance of prevention in orthopaedics	26
2.3 Preventive measures vs. medical corrective methods	27
2.4 The Arndt-Schulz-Rule	29
3. The Form-Function-Changes (FFC)	35
3.1 The "form-function-change" model in veterinary orthopaedics	35
3.2 The form-function disorders in the puppy	45
3.3 The pacing gait in the puppy and the consequences of FFC and biomechanics	45
3.4 The form-function changes in the adult dog	49
3.5 Anatomy of the form-function changes	50
3.6 Case study: The story of Jalo	61

4. The neurophysiology of movement	67
4.1 Movement – Locomotion	67
4.2 The neurophysiological control of movement	74
4.3 The control of the movement	83
4.4 Conclusion	85
4.5 Case studies from everyday practice	85
5. Hip joint dysplasia	89
5.1 The postulate of hip dysplasia according to Dr Patrick Blättler Monnier	89
5.2 The development of hip dysplasia from the perspective of epigenetics	90
5.3 The definition of hip dysplasia	91
5.4 The cause of hip dysplasia	95
5.5 The development and forms of hip dysplasia	100
5.6 The examination of the hip and pelvis	110
5.7 The radiological forms and severity of hip dysplasia	111
5.8 Hip dysplasia - a polyarticular disease?	117
5.9 The clinical symptoms of hip dysplasia	123
5.10 Summary hip dysplasia	133

6. The loose hip joint, kinematics and classification AI (*machine learning*).....135

6.1	The hip joint from the perspective of functionality - the loose hip joint.....	135
6.2	Will the common and standardised HD X-ray technology be obsolete in 2022?.....	136
6.3	How is the dog positioned with the distraction technique?.....	139
6.4	How are the hip joints assessed on the stress radiograph?.....	143
6.5	What can kinematics contribute to the reduction of HD?.....	144
6.6	The DAR (Dorsal <i>Acetabular</i> Rim) Technique (Hip Roof).....	147
6.7	The standing tangential hip technique.....	153

7. Early diagnosis of hip dysplasia in puppies (16-20 weeks of age).....157

7.1	The LupoMove® early diagnosis of hip dysplasia with motion measurement.....	157
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8. LupoMove® Puppy.....165

8.1	The orthopaedic prophylaxis programme for the puppy.....	165
8.2	Why does the LupoMove® programme only start from week 12?.....	199
8.3	The training and exercise plan for the puppy development in the LupoMove® Puppy.....	201
8.4	Pain memory in the puppy.....	206
8.4.1	The control and regulation of pain memory.....	206
8.4.2	Effects of pain on the dog and its development.....	208

8.4.3	Prophylaxis and prevention of pain pathology in puppies.....	212
8.4.4	The neurological memory of movement.....	213
8.5	Reasons for swimming therapy for puppies.....	215

9. Feeding the puppy.....219

9.1	General information and practical advice.....	219
9.2	The Nutritional Intensity Coefficient (NIC).....	221
9.3	NIC examples from practice.....	222

10. The dragline training.....229

10.1	Areas of application of the dragline.....	229
10.2	Requirements for correct dragline training.....	229
10.3	Injuries and diseases.....	232

11. Cold and heat protection of puppies.....237

11.1	Hypothermia.....	237
11.1.1	Symptoms and consequences of hypothermia.....	237
11.1.2	Assistance with hypothermia.....	239
11.1.3	Preventive measures.....	240
11.2	Heat protection at temperatures above 20°C.....	240
11.2.1	Temperature regulation in dogs.....	241
11.2.2	Adapting exercise and training to weather conditions.....	242

List of abbreviations

AI	Artificial intelligence
BARF	Biologically appropriate raw food
BMI	Body-Mass-Index
CCD	Centre collum diaphyseal angle
CLR	Cruciate ligament rupture
CT	Computed tomography
DAR	Dorsal acetabular rim
DPO	Double pelvic osteotomy
ED	Elbow dysplasia
FFC	Form-Function-Changes
HD	Hip joint dysplasia
IMU	Inertial measurement unit
JPS	Juvenile pubic symphysiodesis
MRI	Magnetic resonance imaging
NIC	Nutritional Intensity Coefficient
OCD	Osteochondrosis, cartilage defects
ORkcmT	Orthopaedic kinematically controlled manual Therapy
PFV	Peak Vertical Force
ROM	Range of Motion
SLO	Symmetric lupoid onychodystrophy
TEP	Total-endoprosthesis
TMJ	Temporomandibular joint
TPO	Triple pelvic osteotomy

Prologue

How much exercise can or should my puppy be allowed to do every day?

Is a dog already born with hip dysplasia?

How does hip dysplasia develop and how can the existence of this skeletal disease be identified?

These and other questions from the same spectrum of topics - why, for example, a puppy paces, whether this can be traced back to a genetic cause or whether it is connected to the wolf - form the focus of discussion in this work and are dealt with in detail in the following chapters. Furthermore, solutions and approaches are also presented to prevent these complaints in the long term or, if they exist, to demonstrate an optimal therapy for their handling.

In this context, the **LupoMove® Puppy** programme represents a complete examination in orthopaedic-clinical terms based on an objective diagnosis of the puppy's movement. While on the one hand the description and diagnosis of skeletal problems is of high importance, on the other hand, therapy as well as an individually adapted plan for the development of a puppy are absolutely necessary. The theory and practice of the interaction of these components is the basis of this prevention and prophylaxis programme and is also shown and explained in detail with the inclusion of examples from my daily practice.

4Dvets AG is currently working with me to set up a network of vets in Europe who will offer this prophylaxis programme in the future. Soon, more and more puppies will have the opportunity to start their lives with this programme.

In addition to an in-depth look at the topics of orthopaedics and hip dysplasia, prevention and prophylaxis, information is presented on adequate nutrition for the puppy, and the advantages as well as the dangers of using a dragline/leash

are presented. At the same time, a first insight is given into the subjects of cold and heat protection for dogs and how you can best protect your animal from negative health effects of temperature extremes, both high and low.

Overall, this book offers you a great package of topics. I am well aware that individual chapters may require a lot of your leisure time to achieve a detailed understanding of the material. However, at the same time I am firmly convinced that the information presented here is of enormous importance and that any time invested in familiarising yourself with this possibly new veterinary field is time well spent. Considering the fact that your canine companion will accompany you loyally and depend on your care for the next twelve to fourteen years, both of you can only benefit from the knowledge imparted - both general and theoretical as well as individual and practical.

With this in mind, I hope you enjoy reading and have good endurance - you will see that it will pay off!

Dr. med. vet. Patrick Blättler Monnier

1. New scientific knowledge

1.1 The question of the 'proper' duration of exercise for puppies

The duration of exercise for puppies is a topic that causes uncertainty among many dog owners. Understandably so - because the multitude of rumours and speculations circulating in this regard have so far provided as little clarity as the lack of meaningful studies. Nevertheless, it is generally known that the organisation of the puppy's daily life, which requires an active occupation of the growing animal and is already favoured by its instinctive and almost unlimited exploratory instinct, demands rest and regeneration as a balancing element to the same extent. Mastering this balancing act and successfully regulating the urge to move, and alternating with physical relaxation in a way that suits the individual, is a challenge for many dog owners. On the one hand, it is not surprising that the question of the "right" way to deal with a puppy's tireless activity and joy of exploration is discussed in detail in the educational context; on the other hand, however, it is surprising that the health aspect is only mentioned in passing and is only dealt with superficially and in comparatively few words. In this context, the consensus that encouraging exercise by walking long distances is detrimental to the physical wellbeing of the puppy is propagated in numerous dogcare guidebooks. These may explain that walking too far can overtax the young animal and cause considerable consequential damage, as its skeletal system is not yet capable of coping with such a strain. Furthermore, it is not uncommon to follow these warnings with a series of alternative activities and guidelines for a healthy amount of exercise at a stretch. In fact, young dogs are not yet familiar with their own physical limits and therefore like to take the opportunity to explore their surroundings by running, romping and playing to the point of exhaustion, even far from any

Severe dysplastic hip (E-E findings):

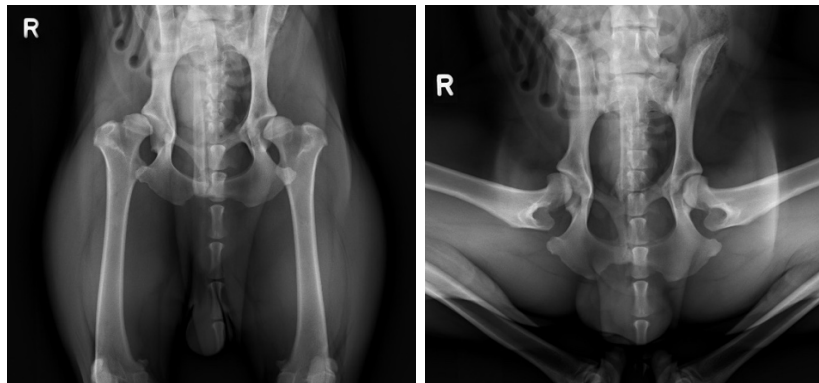


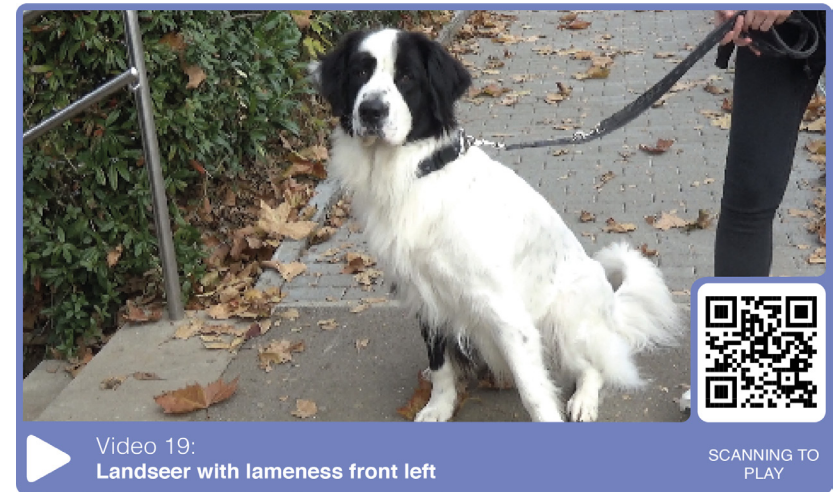
Fig. 49: Severe dysplastic hip (E-E findings), stretched projection

Fig. 50: Severe dysplastic hip (E-E findings), flexed projection



Fig. 51: Severe dysplastic hip (E-E finding), Distraction projection (stress X-ray)

5.8 Hip dysplasia - a polyarticular disease?



<https://youtu.be/03F22M4FPXU>

In this case study I explain the movement pattern. The dog in question is a three-year-old Landseer who has had a lameness on the left front for some time, but this has been latent for a longer period of time and has become noticeable through a conspicuous movement in the hindquarters. If we look at the dog while walking, we can see an extreme pelvic twist, i.e. a scooping out movement of the pelvis to the right and left. The tail goes with this whole movement, but is kept stiff. In the forehand the dog is clearly "toe tight" and it can be clearly seen that the left elbow is carried in an extreme *varus* or bow-legged position and the weight is shifted to the right shoulder limb, while the left shoulder limb is rotated outwards and relieved. On the right-side, the dog paces and especially in the hindquarters has a very heavy gait with a turning out movement of the pelvis and the thigh. On the left hindquarters, exactly the same movement can be seen: an extreme pelvic twist, a delayed or shortened lead phase and generally an extremely pronounced "hacking", reminiscent of a woman walking

on 10cm high heels. The forehand on the left reveals a slight hang-leg lameness and is placed forward and outward in the stopping phase. In this case we are dealing with a dog that suffers from a moderate hip joint and bilateral elbow dysplasia with marked arthrosis and also has OCD (*osteochondrosis dissecans*) - a young dog disease of the cartilage - in the right shoulder. So here we have a tangible anomaly, namely a clear change in the fore- and hindquarters of the dog - and at the same time a clear confirmation that hip joint dysplasia can be a polyarticular disease, because in this example both the hip and the elbow and shoulder are affected.

This relationship is clearly shown in the diagram below. The altered hip is a segmental dysfunction. These generated symptoms of altered movement affect the forehand. The dog has to compensate for the reduced hindquarters and thus performs a *pull move* with the forehand instead of a *push move* of the hindquarters. This can cause elbow dysplasia, as in our example. The altered voluntary motor function, which stores this altered type of movement in the cerebrum, in the motor cortex, must then be assessed as a central dysfunction.

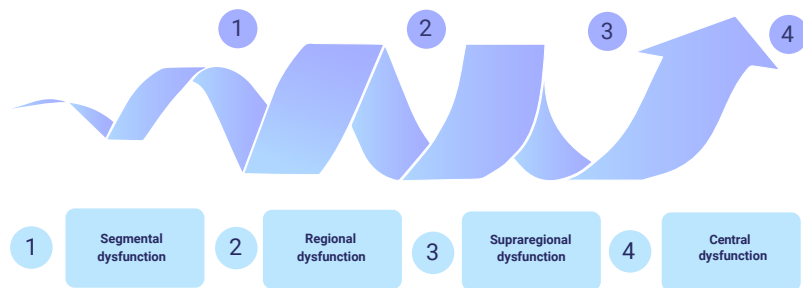


Fig. 52: Form-function change



<https://youtu.be/l10Vgj1AyoQ>

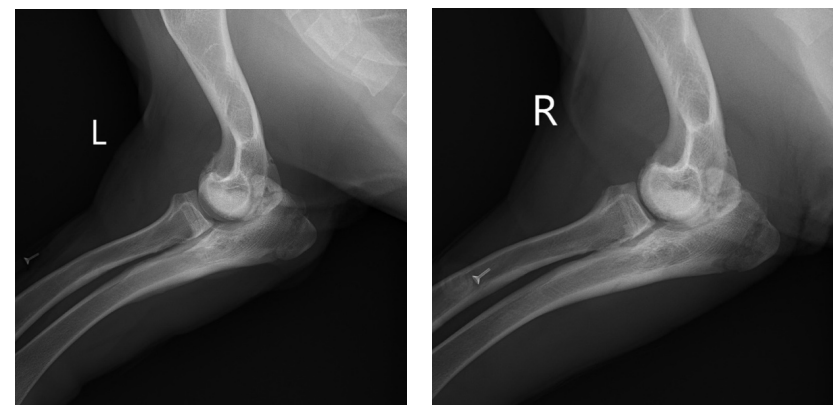


Fig. 53: Elbow left, lateral/ Elbow right, lateral