



EUROPEAN COLLEGE OF VETERINARY AND COMPARATIVE NUTRITION

Policy and Procedures
ECVCN Residency Programme
Version of September 2019

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1. Introduction

The European College of Veterinary and Comparative Nutrition (ECVCN) was founded in 1998 by the European Society of Veterinary and Comparative Nutrition (ESVCN). The ECVCN obtained recognition by the European Board of Veterinary Specialisation (EBVS) in 2008. The list of ECVCN Diplomates can be found on the ECVCN website (<http://www.esvcn.eu/college>).

The primary objective of the ECVCN is to advance the quality of animal health care in Europe by increasing the competency of those who are active in the field of veterinary and comparative nutrition, through:

- Establishing guidelines for post-graduate education and training as a prerequisite to become a specialist in the field of veterinary and comparative nutrition;
- Examining and authenticating veterinarians as specialists in veterinary and comparative nutrition to serve the veterinary patient, its owner and the public in general, by providing expertise in this discipline;
- Encouraging research and other contributions to the knowledge related to veterinary and comparative nutrition including nutritional biochemistry, physiology and pathophysiology, comparative aspects of nutrition, applied nutrition, clinical nutrition/dietetics, knowledge on feedstuffs, feed hygiene and

feeding management and promoting communication and dissemination of this knowledge.

Within this objective, the ECVCN is responsible for the training of the ECVCN Residents who want to become an ECVCN Diplomate.

Scientifically based and clinically oriented structures will allow the Resident to gain expertise in veterinary medicine and nutritional sciences and become a specialist in veterinary and comparative nutrition. These prospective ECVCN Diplomates could have a future professional career in academia, veterinary medical practice, food and feed industry and government agencies. The main part of his/her time will be devoted to the speciality.

The goal of these guidelines is to inform ECVCN Diplomates and ECVCN Residents of the policies and procedures of ECVCN and help ECVCN Residents to complete their Residency Programme and prepare for the ECVCN Certifying Exam. These guidelines are based on the constitution and the bylaws of the ECVCN.

2. ECVCN Residency Programme

2.1. Definitions and Terms

The “Residency Programme” is a training programme that allows veterinarians to acquire in-depth knowledge of veterinary and comparative nutrition and their supporting disciplines, including all species; companion animals, food producing animals and avian and exotic species; under the supervision and guidance of an ECVCN Diplomate and aiming at certification by the ECVCN.

The “Resident”, is a trainee within an approved ECVCN Residency Programme.

The “Diplomate”, is a veterinarian who is certified as a specialist in veterinary and comparative nutrition by the ECVCN.

The “Residency Supervisor”, is an ECVCN Diplomate responsible for the direct supervision and day-to-day training of the Resident.

The “Training Site” is the location where the ECVCN Residency Programme takes place.

The “Credentials”, are the totality of the requirements (clinical training, research activities, teaching and continuing education) necessary for sitting the ECVCN Certifying Exam.

2.2. Objectives

The objectives of the ECVCN Residency Programme are to:

- Develop technical sophistication and major professional expertise in the areas of veterinary and comparative nutrition;
- Provide experience in research and investigative projects; to develop critical thinking, experience with methodology and analytical techniques, and acquisition of the ability to assess experimental data;
- Provide experience in presentation techniques for teaching and education;
- Develop a scientific basis that allows the successful trainee to manage veterinary patients or animal herds, including companion animals, food producing animals and/or avian and exotic species, manage problems of herd health and veterinary public health with nutrition as a central area.

2.3. Requirements for Admission to the Residency Programme

Prospective Residents are eligible to apply to a Residency Programme if the applicant:

- Is in the possession of a veterinary degree from an institution approved by the European Association of Establishments for Veterinary Education (EAEVE, <http://www.eaeve.org>), unless relieved of this obligation by the ECVCN Education & Residency Committee and the Executive Committee;
- Is licensed to practice veterinary medicine in a European country, unless relieved of this obligation by the ECVCN Education & Residency Committee and the Executive Committee;
- Has a satisfactory moral and ethical standing in the profession;
- Has performed at least one (1) ~~to one and a half (1.5)~~ year of Internship in a veterinary area, either as classical clinical Internship or an equivalent that is relevant to the veterinary profession. Details regarding the Internship are described in *Section 2.5. Acknowledgement of the Internship*.

2.4. Duration of the Residency Programme

The Residency Programme will be **at least four (4) years** in duration. This 4-year period should be divided in two (2) periods as follows:

1. First period – Internship:

At least one (1) ~~to one and a half (1.5)~~ year of Internship fulfilled in any veterinary area, either as classical clinical Internship or an equivalent relevant to the veterinary profession, evaluated by the ECVCN Education & Residency Committee on a case by case basis.

Details regarding the Internship are described in *Section 2.5. Acknowledgement of the Internship*.

2. Second period – Residency:

~~Depending on the length of the Internship,~~ The length of the Residency has been set to be **at least two-and-a-half (2.5) to three (3) years** for a Standard Residency or its equivalent for an Alternative Residency.

The Residency consists of a period of specialised training, postgraduate education, and in-depth experience in the science and state of the art in veterinary and comparative nutrition and their supporting disciplines under the supervision of at least one ECVCN Diplomate who participates actively in that programme. Both Standard and Alternative Residency Programmes are possible.

Details regarding both types of Residency Programmes are described in *Section 2.6 Standard Residency Programme* and *Section 2.7 Alternative Residency Programme*.

The Residency can be taken on a full-time or on a part-time basis. Based on 40-hour work week, residents have to practise the speciality for more than ~~50~~**60%** of their time. Total time of the Residency should be at least ~~the two-and-a-half (2.5) to~~ three (3) years and should not exceed five (5) years for a Standard Residency or its equivalent for an Alternative Residency.

2.5 Acknowledgement of the Internship

The Internship should include a minimum of twelve (12) months full time work, based on a 40-hour working week, either as classical clinical or rotating Internship, i.e. clinical experience in managing clinical cases in an animal hospital setting, or an equivalent that is relevant to veterinary and comparative nutrition. It is preferred that the Internship is fulfilled under the supervision of at least one EBVS approved Diplomate (any speciality).

The Internship must be approved by the ECVCN Education & Residency Committee prior to starting the Residency. ~~If the Internship was longer than one-and-a-half (1.5) years, minimum one (1) and maximum one-and-a-half (1.5) year(s) can be validated by ECVCN Education & Residency Committee.~~

For the acknowledgement of the Internship, the following documents should be submitted by the applicant:

- Completed and signed *Application for Acknowledgment of the Internship Form*. This form is available on the ECVCN website.
- Curriculum Vitae;
- Copy of the Veterinary Degree/Diploma;
- Copy of Licensure to practise veterinary medicine in a European country

The Internship acknowledgement package must be submitted electronically as one single pdf document, **prior to commencing a Residency Programme**. Different documents should be arranged in the sequence listed above and different sections should be bookmarked (e.g. create a table of content within the pdf document, allowing to navigate easily within the document – Document, Add Bookmark) to facilitate review by the ECVCN Education & Residency Committee. The Internship acknowledgement package should be send to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee, as an email attachment. The applicant should make sure to ask for a read receipt. The Chair of the ECVCN Education & Residency Committee will confirm that the application package has been received by email.

All submitted application materials become the sole property of the ECVCN and will not be returned to the applicant.

The ECVCN Education & Residency Committee will decide on the applicant's file and notify the applicant of the decision by email within three (3) months after receiving the complete Internship acknowledgement package.

All correspondence regarding application procedure and notification should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee.

2.6. Standard Residency Programme

2.6.1. Application for and re-submission of a Standard Residency Programme by the ECVCN Diplomate

An eligible ECVCN Diplomate may submit an application for a Standard Residency Programme, including him/herself as Residency Supervisor, to the ECVCN Education & Residency Committee.

This application should include a detailed description of the Standard Residency Programme namely:

- Detailed objectives
- The training team
- Details about the level and frequency of interaction between the candidate and ECVCN Diplomate(s) and others deemed necessary for the programme
- Laboratory equipment
- Teaching materials available; including a synopsis of the number and type of patients/cases, the emphasis and anticipated depth of study of each patient/case.
- Participation in teaching
- Research plan

This application should be sent to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee. The *Application for a Standard Residency Programme Form* is available on the ECVCN website.

Programmes must be approved prior to programme initiation, as credit for time invested prior to programme approval will not be considered.

If any changes are made to the Standard Residency Programme after approval, the Residency Supervisor will need to submit an update to the ECVCN Education & Residency Committee. Any modifications are subject to review and approval by the ECVCN Education & Residency Committee **and the Executive Board**.

Standard Residency Programmes must be re-submitted by the Residency Supervisor to the ECVCN Education & Residency Committee **every 5 years** for evaluation and re-approval. Re-applications should be sent to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee **on or before June 1st of the year of Executive Committee expiration**.

All correspondence regarding application, modification and re-submission for Standard Residency Programmes should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee.

2.6.2. Registration of Residents within an existing Standard Residency Programme

Within 6 weeks prior to programme initiation, Residents must register within a Standard Residency Programme by submitting the *Registration of a Resident for a Standard Programme Form* to the **Executive Secretary and** the ECVCN Education & Residency Committee **Chair**. This form is available on the ECVCN website.

Standard Residency Programmes are general programmes including all animal species but may, for a maximum of 70% of the time, focus on either companion animals or food producing animals. Each Resident must quote if the residency will concern either a companion animal or food producing animal programme. If the Resident is focusing on horses, avian or exotic species, the Resident should decide in consideration with the Residency Supervisor which stream, companion animal or food producing animal, is most appropriate.

If a Resident desires to change his/her species focus, the Resident must ask permission to the **Executive Board and the** Education & Residency Committee to change the species focus. This committee will decide if the time in the previous programme can be (partly) taken into account in the new programme or not.

All correspondence regarding registration of residents within a Standard Residency Programme and any changes should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee.

Within a Standard Residency Programme the Resident will focus on clinical training, research activities, teaching, and continuing education related to veterinary and comparative nutrition. The Resident will spend minimum 35% **(3-year Residency) to 40% (2.5-year Residency)** of his/her time on clinical training and maximum **60% (2.5-year Residency) to 65% (3-year Residency)** should be spent on research activities, (e.g. literature study, preparation of scientific manuscripts, presentation of papers, setting up and performing a research study), teaching (e.g. clinical education of graduate veterinarians and/or veterinary medical students.), continuing education (e.g. external rotations, attendance of conferences and “in house” Residents’ seminars), and independent study.

Clinical Training:

A minimum of fifty-two (52) weeks (1 week is at least five (5) days of at least eight (8) hours) of full-time on-clinic time focused in veterinary and comparative nutrition must be accomplished during the residency programme. Only nutrition-focused service will be considered toward satisfying this requirement. This may include experience in companion animal and/or food producing animal nutrition services, in field service, in extension activities with referring veterinarians and/or laboratory facilities for feed analyses and feed evaluation.

The Resident and Residency Supervisor should be interactively and concurrently managing or consulting on patients/cases on a daily basis. The Residency Supervisor

does not need to personally examine each patient/case seen by the Resident but must be in the premises and direct contact in the form of daily discussion is obligatory. The Residency Supervisor must work at the training site continuously. The specific nature of this contact should be specified in the programme description.

The resident's clinical experience must be demonstrated in three (3) written case reports, of which one is published or accepted as a full paper in a peer-reviewed international or local journal or as an abstract in peer-reviewed conference proceedings. More details about the case reports are provide in *Section 3.1 Qualifications to sit the ECVCN Certifying Exam*.

Research Activities

The Resident must use off-clinic time to complete a research project that contributes to the advancement of the discipline.

The Resident is encouraged to attend local, regional, national and international conferences in order to present his/her research project to the veterinary and nutrition community.

The Resident's research must result in at least one (1) original scientific report in the area of veterinary and comparative nutrition published in an international peer reviewed journal, with the Resident as the principal author. Hypothesis-driven scientific research such as retrospective studies and prospective studies are examples of acceptable publications. More details about publications are provided in *Section 3.1 Qualifications to sit the ECVCN Certifying Exam*.

Teaching

Residents must be involved in teaching of students, interns, residents of other colleges, technicians, veterinarians, producers, and/or owners. Teaching should include informal clinical tutorials, such as daily rounds and other case discussions, as well as appropriate involvement in lectures for formal courses and seminars.

Continuing Education

The Residency Class is usually organised prior to the annual ESVCN congress. The ECVCN Vice-President is responsible for the Residency Class organisation.

Residents are required to attend the ECVCN Residency Class every year during the course of the Residency. Each Resident should confirm their attendance by email to the ECVCN Vice-President **on or before June 1st**. If Residents are unable to attend the ECVCN Residency Class, they should notify the ECVCN Vice-President and justify their absence.

Residents are expected to participate actively in the Residency Class through presentation of either clinical/practical cases or a review. Residency Supervisor approval of the subject and the presentation is mandatory.

- Case report

First year (Residents started before June 1st) and second year (unless this is also the final year: see literature review) residents have to present a clinical/practical case as training for the oral section of the ECVCN Certifying Exam. The case report shall not be the same as any past or accepted case report presented at the ESVCN congress and shall include: general presentation of the clinical/practical case, nutritional management including diets composition, nutritional requirements and other dietary details, discussion and references. ~~The duration of the presentation should be 15 minutes (excluding questions).~~

- Literature review

Residents in their final year (second or third year depending on the ~~duration of the Internship and~~ starting date of the residency) are expected to present a literature review as training for the general nutrition section of the ECVCN Certifying Exam. If the Resident proposes a title that is species related, a species that is not the Resident's species focus should be chosen. ~~The duration~~

~~of the presentation should be 25 minutes (excluding questions).~~ Residents presenting a review will also provide 5 multiple-choice exam questions on the topic of their lecture. These exam questions should be sent directly to the Chair of the Examination Committee and will not be used (if approved by the Examination Committee) for the ECVCN Certifying Exam until these Residents have passed the exam.

On or before June 1st, proposals for case and/or review titles should be submitted for approval to the ECVCN Vice-President. The ECVCN Vice-President is responsible for approval of the proposed titles. Once approved, presentations should be sent as power point or pdf document (2 slides/page) to the ECVCN Vice-President **on or before September 1st**.

Aside from the annual residency class, Residents will be encouraged to regularly attend and participate in local, regional, national and international workshops, seminars, symposia, and conferences in disciplines related to veterinary and comparative nutrition.

Post-graduate degree studies may be included in the Residency Programme. However, it remains important that the Resident is involved in all aspects of the Residency Programme including clinical training, research activities, teaching, and continuing education in order to fulfil the requirements to sit the ECVCN Certifying Exam. This needs to be reflected in the Activity Log Book. Details on Evaluation and Progress are described in *Section 2.12. Assessment of Performance and Progress*.

Rotations and visits to other training sites are recommended as they facilitate development of knowledge, skill, and proficiency via exposure to a wide variety of clinical problems, clinical cases, techniques and research approaches. At the different training site, supervision by an ECVCN Diplomate (or an ACVN Diplomate, at the discretion of the ECVCN Education and Residency Committee) other than the Residency Supervisor is recommended.

2.7. Alternative Residency Programme

In exceptional cases it is possible to follow an Alternative Residency Programme. This Alternative Residency Programme requires the same intensive dedication to the field of veterinary and comparative nutrition as Standard Residency Programmes including exploration of clinical training, research activities and teaching under the supervision of an ECVCN Diplomate or an ACVN Diplomate i.e. the Residency Supervisor.

Supervision by an ACVN Diplomate should be approved at the discretion of the ECVCN Education and Residency Committee and only when co-mentorship is provided by an ECVCN Diplomate. It is not the intent of the Alternative Residency Programme to provide a less intense experience, nor to provide a training programme disassociated from appropriate supervision and mentorship. Residents in an Alternative Residency Programme need to receive equal training and mentorship as those in Standard Residency Programmes.

Alternative Residency Programmes are only approved for an individual and not for an institution. Therefore, it is the responsibility of the prospective Resident to set up and apply for an Alternative Residency Programme in mutual agreement with the Residency Supervisor. All Alternative Residency Programmes **must be approved** by the Education & Residency Committee **before commencement of the training**, as credit for time invested prior to programme approval will not be considered. The description of the programme should provide sufficient detail (at least all aspects needed for a standard residency application should be covered) such that the ECVCN Education & Residency Committee can effectively assess the proposed programme, including specifics about the interaction with the Residency Supervisor.

The Resident and Residency Supervisor should be interactively and concurrently managing or consulting on patients/cases on a daily basis during this time. The Residency Supervisor does not need to personally examine each patient/case seen by the Resident, but direct contact in the form of daily discussion is obligatory for at least six (6) months working full time (or twelve (12) months part-time (50%)). Direct supervision can be done by either his/her supervisor or another ECVCN Diplomate in

another site, or an ECVCN Diplomate visiting the site where the Resident works. For the rest of the time the Resident can work in his /her site without direct supervision with supervisor and Resident being responsible for remote communication. The specific nature of this contact should be specified in the programme description.

If any changes are made to the Alternative Residency Programme after approval, the Residency Supervisor will need to submit an update to the ECVCN Education & Residency Committee. Any modifications are subject to review and prospective approval by the **Executive Board and the** ECVCN Education & Residency Committee.

All correspondence regarding application and modifications of Alternative Residency Programme should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Education and Residency Committee.

The total length of an Alternative Residency Programme depends on the particular programme, taking into consideration the description of the proposed programme. The total length of the programme must be defined by the ECVCN Education and Residency Committee in advance of commencing the programme. The maximum term is set at 6 years. During an Alternative Residency Programme, the Resident must spend at least sixty (60) percent of his/her time in the speciality. If the programme is not continuous, it must be arranged in blocks of no less than half a month per block, with a minimum of 4 months per year.

Rotations and visits to other training sites are recommended as they facilitate development of knowledge, skills, and proficiency via exposure to a wide variety of clinical problems, clinical cases, techniques and research approaches. At the different training site, supervision by an ECVCN Diplomate or an ACVN Diplomate, at the discretion of the ECVCN Education and Residency Committee, other than the Residency Supervisor is recommended.

All the requirements that are in place with regards to clinical training, research activities, teaching and continuing education for the Standard Residency Programme should also be met for an Alternative Residency Programme and are stated above in *section 2.6 Standard Residency Programme*.

2.8. Resident Expectations/Obligations

The Resident is responsible for understanding and agreeing to all programme and credential requirements, and for ensuring that deadlines for submission of all fees and documents are met.

The Resident and Supervisor must inform the Education and Residency Committee of any changes of his/her residency (definitively stopped, temporarily put on hold for maternity leave etc...) and when his/her residency ends.

The Resident is also obliged to register with the ESVCN and **pay the annual membership fee of the ESVCN before commencing the Residency Programme.** Information on ESVCN membership and the annual membership fee can be found on the ESVCN website (<http://www.esvcn.eu/society>).

2.9. Participation of ECVCN Diplomates

Each Residency Programme must be supervised by a Residency Supervisor, who is an ECVCN Diplomate or an ACVN Diplomate. Supervision by an ACVN Diplomate should be approved at the discretion of the ECVCN Education and Residency Committee and only when co-mentorship is provided by an ECVCN Diplomate.

The Residency Supervisor is ultimately responsible for all aspects of the Residency Programme, including selection of Resident applicants, day-to-day guidance and mentorship of trainees, assessment and evaluation of trainees and continuity of the programme. The Residency Supervisor endorses all relevant forms and documents as well as ensures the trainee has completed all requirements of the Programme and of the ECVCN. When submitting a Residency Programme application, the Residency Supervisor also assures and endorses the suitability of the primary Training Site. The Residency Supervisor must be familiar with and understand the Residency Programme guidelines and the credential requirements and must be willing and able

to guide and evaluate a Resident's progress and performance in the areas of clinical practice, research activities, teaching, and continuing education. He/she must be able to assess and identify problems with the Resident and the Residency Programme and recommend changes or even terminate the programme if necessary in mutual agreement with the **Executive Board and the** Education & Residency Committee.

Each Residency Supervisor may train no more than two (2) Residents concurrently, in exceptional cases the ECVCN Education & Residency Committee can allow three (3) Residents for a restricted period. Upon completion of the Resident's training programme (i.e., the Resident Supervisor is no longer actively mentoring the Resident), the Resident is no longer considered a trainee of that Resident Supervisor regardless the stage of the Credentials.

If more than one ECVCN Diplomate participates in an ECVCN Residency Programme, each ECVCN Diplomate must participate actively in the programme; otherwise he/she will be excluded from the programme.

In order to become a Residency Supervisor, the ECVCN Diplomate must spend most of his/her working time at the specialist level in academia, clinical veterinary practice or private laboratories or institutions with adequate facilities for the speciality.

ECVCN Diplomates will be re-evaluated every 5 years. More details about recertification of ECVCN Diplomates can be found below *in Section 5.2. Recertification of ECVCN Diplomates*.

At the end of the Residency, the Residency Supervisor shall prepare a **statement that the Resident has satisfactorily completed the approved time and activities of training**. This statement must be sent to the ECVCN Executive Secretary, the Chair of the ECVCN Education and Residency Committee and Chair of the ECVCN Credentials Committee **within 90 days after programme completion**.

2.10. The Training Site(s)

As mentioned above (Section 2.9. Participation of ECVCN Diplomates), when submitting a Residency Programme Application, the Residency Supervisor assures and endorses the suitability of the primary Training Site.

Facilities, services, and equipment at the primary Training Site required for an approved Residency Programme are:

1. Clinical Facilities

Clinical training may take place in companion animal and/or food producing animal nutrition services, in field service, in extension activities with referring veterinarians and/or laboratory facilities for feed analyses and feed evaluation.

Veterinary medical facilities must have a faculty/staff active in a variety of disciplines and specialities. The facility must have diagnostic and therapeutic facilities consistent with the current standard of speciality care for the medical practice in which it is engaged. Complete medical records as well as reports from clinical and morphologic reports must be retrievable.

Feed analyses and evaluation should belong to the service programme of the institute. Laboratory facilities should be equipped to perform routine nutritional analyses. Records of feed analyses should be kept and must be retrievable.

A nutritional service should be present with a suitable case load to support the ECVCN Residents in the Residency Programme. The nutritional service can focus on companion animals, food producing animals as well as avian and exotic animals.

2. Research Facilities

The research laboratory and other research facilities should allow for research in the field of veterinary and comparative nutrition. A variety of specific research-related analytical procedures should be available and allow the

Resident to become familiar and skilful with analytical methods relevant to the research activities.

3. Scientific literature

A library containing recent textbooks and current journals relating to veterinary and comparative nutrition and its supporting disciplines must be easily accessible for the Residents. Online electronic databases and scientific journals should also be accessible.

4. Continuing education

The programme must also include on-going continuing education. This can include a combination of journal club, case-based rounds and/or seminars.

Parts of the training programme may be carried out at different Training Site(s), see above, *Section 2.6. Standard Residency Programme*. A training site cannot be approved for a Standard programme if only a small part of the activities can be performed in it.

2.11. Assessment of Performance and Progress

During the Residency, it is required that the Resident maintains an *Activity Log Book* including all training activities related to veterinary and comparative nutrition: case log and clinical services provided, seminars and lectures attended, presentations and lectures held by the Resident. A template of this *Activity Log Book* is available on the ECVCN website.

The Residency Supervisor is responsible for the assessment of the Resident's performance and progress in the areas of clinical practice, research activities, teaching, and continuing education. **A formal meeting for evaluation of performance and progress with the Residency Supervisor and the Resident must occur at least two (2) times per year.** Following this meeting an *Evaluation &*

Progress Form, which is available on the ECVCN website, should be completed and signed by the Residency Supervisor and the Resident. The Residency Supervisor must also review the Resident's *Activity Log Book* at least **annually once a year (but twice a year is recommended)**.

Once a year, the ECVCN Education & Residency Committee, should receive:

From the Residency Supervisors:

- A signed summary of assessment of performance and progress for each Resident
- Two (2) *Evaluation & Progress Forms* completed and signed by the Residency Supervisor and the Resident resulting from the meetings described above.

From the Resident:

- *Activity Log Book*
- Progress report, including reflection on the past year
- Outline of the planned activities for the next year

All documents should be submitted **on or before June 1st** to the ECVCN Executive Secretary and the Chair of the ECVCN Education & Residency Committee. The ECVCN Education & Residency Committee is responsible for verification of annual progress and performance evaluations, verification of the Resident's *Activity Log Book*, stimulation and facilitation of interdisciplinary contacts and co-operation.

2.12. Skills to be acquired during the ECVCN Residency Programme

Related to professional contacts and transfer of knowledge:

At the end of the residency, the Resident should be able to:

- Express thoughts clearly, in oral and/or in written form,
- Approach problems in an analytic and scientific way to find solutions and be able to assign priorities to them,
- Organize work efficiently,
- Find required information quickly,
- Develop scientific activities in order to contribute to the development of the disciplines.

Directly related to the speciality:

At the end of the residency, the Resident should:

- Be acquainted with the main current theories, principles and problems of the speciality;
- Maintain up to date knowledge through congresses and literature;
- Be acquainted with the structure, objectives, approaches and problems of the veterinary profession and specifically with regard to the speciality;
- Be acquainted with the social role of the specialist and specifically the responsibilities of the specialist with regard to animals, clients, colleagues, public health and the environment;
- Conform to modern standards of skills and equipment.

Indirectly related to the speciality and/or facilities:

At the end of the residency, the Resident should:

- Keep abreast of new developments in and outside the speciality;
- Understand the limitations of his/her own speciality;
- Understand the possibilities that other specialities may have to offer;
- Be familiar with the potential of multidisciplinary cooperation.

Related to working as a professional specialist:

By his/her expertise, the specialist should have developed the self-confidence, self-criticism and sense of responsibility that are essential for the practice of the speciality. This includes a high moral and ethical standard in the treatment and experimental use of all animal species.

Related to the general practice of the speciality:

At the end of the residency, the Resident shall:

- Recognize and work-up problems as they occur in patients in general veterinary practice as related to the speciality;
- Perform procedures according to the principles of good veterinary practice;
- Cooperate with specialists and colleagues in clinical disciplines to the benefit of the veterinary patient;
- Contribute to methods in preventive medicine, the management of zoonoses and nutritional or technical disorders, and veterinary public health as related to the speciality.

Related to new developments in veterinary and comparative nutrition:

At the end of the residency, the Resident should be able to:

- Recognize and work-up problems of applied clinical nutrition and dietetics,
- Recognize new developments in the disciplines;
- Provide therapy concepts for diseased animals as related to the speciality;
- Be aware of the actual regulatory attempts in the frame of European harmonization towards feed;
- Judge the well-being of animals under clinical and experimental conditions;
- Perform and evaluate animal experiments under Good Laboratory Practice (GLP), Good Clinical Practice (GCP) and Good Scientific Practice (GSP) conditions.

2.13. Knowledge to be acquired during the ECVCN Residency Programme

Knowledge of biochemistry, physiology and pathophysiology related to nutrition:

- Digestion and absorption;
- Energy-, protein-, fat- and carbohydrate, vitamin and mineral/trace element metabolism
- Energy and protein evaluation;
- Feed intake and –regulation;

- Water (fluid) and electrolyte balance;
- Effects of feed additives;
- Effects of deficiency or over-supplementation of/with energy, nutrients, minerals and feed supplements;
- Diagnostics, especially concerning nutrition-related problems;
- Endocrinology (controlling nutrient metabolism and repartitioning in the body);
- Associations between nutrition and reproduction;
- Anaerobic fermentation;
- Laboratory animal science;
- Toxicology and feed related aspects of toxicology;
- Experimental methodology and statistics

Knowledge on feedstuffs:

- Preparation and evaluation of feedstuffs;
- Technology and feed production/manufacturing;
- Harmful and undesired substances, including but not limited to heavy metals, mycotoxins, poisonous plants;
- Feed hygiene;
- Evaluation of quality of drinking-water

- Organizations and legislation related to animal nutrition and human food production.

Special knowledge in companion and food producing animals:

Effects of feeding as applied in veterinary practice (including feeding techniques) as far as disease prevention (including herd health), performance of animals, product quality, animal welfare and protection of the environment; formulation and evaluation of mixed feedstuffs and rations; nutritional prescriptions for patients that may profit from therapeutic and corrective diets (feeds for special purpose), including the use of medicated feed and drinking-water medication.

3. Application to sit the ECVCN Certifying Exam and Passing of the Credentials

3.1. Qualifications to sit the ECVCN Certifying Exam

Those giving evidence of satisfactory completion of their residency programme as approved by the ECVCN Credentials Committee can sit the ECVCN Certifying Exam. The following requirements have to be met:

1. **Two (2) accepted publications** in an internationally refereed scientific journal of which the applicant must be the principal author.
2. Of these publications, **at least one (1) should be a scientific paper** published in English in an internationally peer-reviewed scientific journal. Hypothesis-driven scientific research, such as retrospective studies and prospective studies are examples of potentially acceptable publications.
3. Clinical training must be demonstrated in **three (3) written case reports**.

The case reports should show the capability of the Resident to handle clinical/practical cases and demonstrate that the nutritional management of the patient or the animal herd was adequate.

At least one (1) of these case reports should be published as a full paper in a peer-reviewed national or international journal or as an abstract in peer-reviewed national or international conference proceedings.

Publication of case reports in languages other than English is supported and encouraged by the ECVCN as this is needed to stimulate continuing education of the veterinary community in the field of veterinary and comparative nutrition, but the case report must be translated to English by the Resident and submitted and put into the case report template before submission to the ECVCN Credentials Committee for review and evaluation.

Case reports should be submitted in a staggered manner (one per year), the deadline is March 1st. There is one round of revisions allowed per case report.

(A) Case reports that are accepted or published in ISI-listed journals are submitted in the format they are published in. The ECVCN Credentials Committee will reviews those and decide if they contain enough information and discussion on the nutritional part of the case. If the published case report is not accepted, the candidate may submit the same case in more detail for review.

(B) Case reports not published in ISI-listed journals or that are published but not accepted by the ECVCN Credentials Committee (see A) need to meet the format guidelines established by the ECVCN. After review, the ECVCN Credentials Committee can recommend acceptance, rejection or require revisions.

~~Case reports that are not published and/or did not go through a peer-review process before publication should also be submitted to the ECVCN Credentials Committee for review and evaluation. Again translation to English is necessary.~~

Case reports presented during the Residency Class are not considered written case reports and are therefore not acceptable.

4. The Resident should perform **at least one oral presentation** in English at an international conference.

3.2. Waiting Period

The time between completion of a Standard or Alternative Residency Programme and eligibility to sit the ECVCN Certifying Exam that cannot be justified as necessary and relevant to the objectives of the ECVCN is not allowed.

Once the Residency Programme is completed, the Resident must submit an application to sit the ECVCN Certifying Exam the year after programme completion. If the Resident is not planning to sit the exam that year, **a letter explaining the reason** why the Resident is not applying to sit the exam and an **action plan** to be able to apply the next year, must be submitted to the ECVCN Executive Secretary and the Chair of the ECVCN Credential Committee **on or before March 1st**.

3.3. Application Procedure

Residents must submit their application package to the ECVCN Credentials Committee **on or before March 1st** of the year of anticipated examination. Late or incomplete applications will not be processed or reviewed.

All candidates must submit the *ECVCN Exam Application Form (including check list)* together with other required documents as described below under *Section 3.3 Application Package*.

The credentials submitted in the application package must demonstrate proof of successful completion of a Standard or Alternative residency programme. The training can still be in progress at the time of submission of the application package **but it should be finished by September 1st of the year of anticipated examination.**

Papers can still also be under review at that time. Yet, **the training programme must be fully completed and papers must be accepted for publication by June 1st of the year of anticipated examination.**

If the credentials are not accepted within 18 months then, the credentials committee will decide if this Resident must do some additional training or not.

3.4. Application Package

The following materials must be submitted by the Resident:

- Completed and signed *ECVCN Exam Application Form*. This form is available from on the ECVCN website.
- Curriculum Vitae: The curriculum vitae should follow the following format:
 - Personal data: Full name; address; telephone number, email address, date of birth, place of birth, nationality, country of residence
 - Education: Graduate of Veterinary College/Faculty/University, date of graduation, scientific degree(s) + place and date, diploma(s) / certificates/ Dr. / PhD / Thesis / Habilitation / etc. + place and date, Honorary degree(s) + place and date, Internship Programme (institution, length, approved by ECVCN), Residency Programme (institution, length, programme approved by ECVCN), Residency Supervisor, other.
 - Professional activities: Current professional activity (academic, public service, private practice), office (full address), member of profession and scientific organizations, honours

- Documentation Forms: The following completed and verified forms must accompany the application:
 - *Activity Log Book* (template provided on the ECVCN website);
 - First page of published papers;
 - Letters of acceptance and copies of accepted manuscripts.
 - Proof of peer-review for published and accepted papers
 - Evidence of attendance of congresses and meetings
 - Proof of oral presentations: copy of scientific programme, copy of proceedings abstract including cover page of proceedings

The application package must be submitted electronically as one single pdf document **on or before March 1st of the anticipated year of examination**. Different documents should be arranged in the sequence listed above and different sections should be bookmarked (e.g. create a table of content within the pdf document, allowing to navigate easily within the document – Document, Add Bookmark) to facilitate review by the ECVCN Credentials Committee. The exam application package should be sent to the ECVCN Executive Secretary and the Chair of the ECVCN Credentials Committee as an email attachment. The Resident should make sure to ask for a read receipt. The Chair of the ECVCN Credentials Committee will confirm that the application package has been received by email.

All correspondence regarding application procedure and notification should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Credentials Committee.

All submitted application materials become the sole property of the ECVCN and will not be returned to the Resident.

The responsibility for accuracy and availability of all required documents rests with the Resident.

3.5. Application Fee

The Resident will need to remit the application fee of 300 euro (payable to ECVCN) to the Treasurer of the ECVCN **by March 1st** of the anticipated year in which the Resident will sit the ECVCN Certifying Exam. The application fee is non-refundable.

If the Credentials are not approved, the Resident will need to pay the fee again with submission of the updated Credentials the following year. The application fee is also payable each time the Resident is taking a new attempt to sit the ECVCN Certifying Exam.

3.6. Reference Letters

The ECVCN Residency Supervisors involved in training the applicant must write (a) reference letter(s), including the following items:

- Verification of the ECVCN Residency Programme and level of supervision;
- The applicant's proficiency, judgement, and competence as a veterinary nutritionist and academic readiness to sit the examination;
- The commitment of the applicant to the constitutional objectives of the ECVCN;
- The moral and ethical standing of the applicant within the veterinary profession;
- Date of expected completion of the Residency Programme for Residency Programmes that are not finished by March 1st of the anticipated year in which the Resident will sit the ECVCN Certifying Exam.

The Diplomate(s) should email this (these) reference letter(s) directly to the ECVCN Executive Secretary and the Chair of the ECVCN Credentials Committee.

Requests by the Resident for (a) reference letter(s) from Residency Supervisor should be made early so as to assure arrival on or before the application deadline (**March 1st**). It is the applicant's responsibility to see that the reference letter(s) is (are) sent on

time. The reference letter(s) can only be shared with the ECVCN Credentials Committee. The ECVCN Executive Secretary is responsible for absolute discretion and confidentiality regarding the reference letter(s).

3.7. Notification

1. Successful Residents

The **Executive Secretary and the** Chair of the ECVCN Credentials Committee will notify the successful Resident of the approval of Credentials to sit the ECVCN Certifying Exam by email within three (3) months after receiving the complete application package. The dates and procedure of the examination will be communicated at the same time.

2. Unsuccessful Residents

The Resident will be notified by email within three (3) months after receiving the application package explaining the deficiencies in Credentials. These Residents can re-apply to sit the ECVCN Certifying Exam the following year. A subsequent re-application must include re-submission of those credentials found deficient, resubmission of a new application form, an updated curriculum vitae, and pertinent correspondence and payment of the application fee of 300 euro (payable to ECVCN) to the Treasurer of the ECVCN.

4. ECVCN Certifying Exam

4.1. Description of the ECVCN Certifying Exam

The ECVCN Certifying Exam is designed to test the Resident whose Credentials were approved by the ECVCN Credentials Committee in following area:

- Understanding of biochemistry, physiology and pathophysiology related to veterinary and comparative nutrition
- Comparative aspects of nutrition
- Special knowledge and advisory skills in veterinary specialized applied nutrition and clinical nutrition/dietetics
- Knowledge on feedstuffs
- Feed hygiene and feeding management

The ECVCN Certifying Exam is divided into the following three (3) parts:

1. Part 1 – General Animal and Comparative Nutrition (written)

The general examination questionnaire consists of:

- **Seventy (70) multiple choice questions**

Specific questions with up to 5 possible answers among which **only** one is correct.

- **Five (5) essay questions**

Open answer questions to which the candidate is asked to develop a rationale and specific answers including the main key concepts previously stated by the ECVCN Examination Committee.

Questions on general nutritional concepts for domestic animals cover principles of nutrition and related aspects of nutrient biochemistry, metabolism, physiology; immunology; pathology and pathophysiology of nutritional diseases; feed analysis procedures; and metabolic aspects of internal medicine and surgery. Classic nutritional deficiency and toxicity diseases along with toxic plants are covered.

There is **minimal species orientation**, but basic nutritional concepts that can be applied to all species, regardless of the selected training track.

The proportion of included issues will be:

- 40% biochemical and nutritional physiology
- 40% nutritional requirements and general feeding strategies including nutrient intolerance, deficiency and excess
- 20% animal nutrition and food quality/safety aspects, technology and/or legal aspects.

Species included in this part are: ruminants, pig, poultry and pet birds, equines, dogs, cats, small rodents, fish, amphibians, reptiles, wildlife and exotics.

2. Part 2 – Specialized Applied Nutrition and Dietetics in either Companion Animals or Food Producing Animals (written)

The specialized examination questionnaire consists of:

- **Seventy (70) multiple choice questions**

Specific questions with up to 5 possible answers among which **only** one is correct.

- **Five (5) essay questions**

Open answer questions to which the candidate is asked to develop a rationale and specific answers including the main key concepts previously stated by the ECVCN Examination Committee.

The questionnaire for the subspeciality examination contains in depth questions of feed science and nutritional requirements (20 %), applied nutrition (healthy animals and disease prevention) (40 %) and clinical nutrition/dietetics (treatment of diseases)

(40 %) in the species covered in the specific tracks (companion animal or food producing track).

The **Companion Animal Track** questionnaire will cover aspects of applied nutrition, in depth feeding and nutritional management, nutritional diseases and nutritional pathology of:

- Dog and cat (70%)
- Equines (15%).
- Small mammals, fish, amphibians, reptiles, birds, exotic species kept as pet animals and zoo animals (15%)

The **Food Producing Animal Track** questionnaire will cover aspects of applied nutrition, in depth feeding and nutritional management, nutritional disease, and nutritional pathology of:

- All domestic livestock including ruminants, pigs, poultry, rabbits (70%)
- Equines (15%).
- Others: other production animals (animals used for food, wool or fur production like ostrich, deer, minks), European and exotic wildlife (15%)

Those ECVCN Residents who have primarily specialized in horse nutrition, can choose the Companion Animal or Food Producing Animal Track. In that case, 50% of the questions are horse-specific, the other half (50%) is focussed on other species specific to the track that is chosen (companion animals or food producing animals).

3. Part 3 – Oral Case Discussion

The oral case discussion includes evidence based aspects of nutrition. This part will evaluate practical aspects of nutrition, clinical aspects, and aspects of nutritional physiology.

The specialized nature is pertinent or applicable to the subspeciality area. The subspeciality examination is an advanced-level examination utilizing visual aids and involving both a test of theoretical and scientific knowledge and an ability to solve problems. A candidate is asked to interpret and analyse the questions and problems presented, to evaluate the diagnostic and clinical situation and to propose an adequate nutritional advice.

The **content** of the board qualifying exam cannot be shared by candidates nor by college members. The content of the exam can only be discussed between the individual candidate and the chair of examination committee. If both disagree about the content or the result of the exam, the candidate is advised to submit a formal complaint and to start an appeal procedure as described previously **in the ECVCN By laws**. If there has been any communication about the content of the exam, this will lead to an inactive status of the diplomate, dismissing of an associated or honorary member of the college and dismissing of the resident. The resident/candidate will not be allowed to sit the exam anymore in the future.

4.2. Organisation of the ECVCN Certifying Exam

The examination is usually held every year prior to the ESVCN congress and is conducted in the English language. The use of language dictionaries is permitted.

The **written examination** takes place **two (2) days before the respective ESVCN congress** at 9 AM and in the same area where the congress will be held unless notified in another way. The exact address of the location is sent to all candidates sitting the exam, to all members of the ECVCN Examination Committee and to the ECVCN Executive Committee members by the Chair of the Examination Committee in time, at least four (4) weeks prior to the examination.

From 9 AM until 12 noon (three (3) hours), candidates have time to take the **general part** of the written examination (see above PART 1), **from 1 PM until 4 PM** (three (3) hours) the **second part** of the written examination (see above PART 2) is taken unless notified in another way.

The **next day** is assigned for the **oral examination** (see above, PART 3). The candidates are examined in alphabetical order unless notified in another way. The duration of the oral examination is one (1) hour per candidate. **Additional day(s) may be added if the number of candidates taking the oral exam is >8.**

During the written sessions, two (2) invigilators (at least one (1) member of the ECVCN Examination Committee) will supervise the candidates.

During the oral session, additionally to the members of the ECVCN Examination Committee, one external observer may attend the sessions. This observer can be either from the ECVCN or from another college. If necessary, another ECVCN Diplomate can be co-opted as an examiner. Members of the ECVCN Examination Committee, who supervised one of the Residents sitting the ECVCN Certifying Exam or have another potential conflict of interest, are excluded from any duties related to the Examination Board that specific year.

4.3. Evaluation of the ECVCN Certifying Exam

1. Written Questionnaires (see above, PART 1 and PART 2)

Each questionnaire has 120 points in total (one (1) point for each correct multiple choice question and ten (10) points for each correctly answered essay question).

The evaluation of the multiple choice questions is defined as following

- If any wrong answer is marked, the answer is wrong (0 points)
- If the correct answer is marked, the answer is correct (1 point)

Concerning the essay questions, key words have to be defined for each question prior to the examination and those key words should be mentioned/explained by the candidate. Depending on the answer, 0 to 10 points can be given for each essay question.

The pass mark for the written examinations is 70 % (84/120 points) for each questionnaire (general and specialised).

2. Oral examination (see above, PART 3)

A candidate will be expected to interpret the nutritional case and to provide evidence-based information necessary to answer the questions correctly. The pass mark for the examination is a satisfactory level of problem solving capacities and knowledge in the given area. 70 % of the committee's questions have to be answered correctly.

Four examiners (either all members of the ECVCN Examination Committee or a co-opted specialist of ECVCN when one of the ECVCN Examination Committee members is not able to assist the exam) will perform the examination. Each candidate has to solve at least two cases of his or her speciality track.

Candidates are required to satisfactorily complete all parts of the ECVCN Certifying Exam to become board-certified.

A candidate who passes one (1) or two (2) parts out of the three (3) retains credit for the previous parts that were successful. Three (3) additional attempts within eight (8) years of completion of the residency are permitted to pass the failed parts.

4.4. Results of the ECVCN Certifying Exam

After the evaluation of the written part questionnaires, all members of the Examination Committee are informed, **and the Executive Board is informed**, the Chair of the ECVCN Examination Committee will **officially inform the candidates in writing at the latest 1 month 3 months after the ESVCN-congress**. This information letter will be sent by e-mail. If the Resident has failed the examination (or parts of the

examination), reason for failing are explained in detail in this information letter, to improve the chances of passing the exam in the future.

Candidates passing the exam are officially announced during the formal dinner at the next ESVCN-congress. These new ECVCN Diplomates will **pay their first ECVCN membership fee by January 1st of the year following their examination.** New ECVCN Diplomats have to submit **10 multiple choice questions** to the Chair of the Examination Committee **on or before January 1st of the year following their examination.**

After the information is received by e-mail, the candidate may **appeal within 90 days** against the decision if he/she is not in agreement with the decision (see article 10 of the Bylaws).

In order to respect the privacy of Candidates, names of Candidates who took the ECVCN Certifying exam will not be made public at any stage.

4.5. Suggested Readings for Preparation for the ECVCN Certifying Exam

1. General Nutrition and Nutritional Physiology, Biochemistry, Immunology, and Toxicology

- Berg, J.M., Tymoczko, J.L., Stryer, L. (2002): Biochemistry. 5th ed., W.H. Freeman, New York.
- Gad, S.C. (2008): Toxicology of the Gastrointestinal Tract, CRC Press.
- Kaneko, J.J., Harvey, J.W., Bruss M.L. (2008): Clinical Biochemistry of Domestic Animals. 6th edition, Academic Press, San Diego, California.
- Mosenthin, R., Zentek, J., Zebrowska, T. (2006): Biology of nutrition in growing animals. Elsevier, London, UK.
- Cheeke P.R. and E.S. Dierenfeld, (2010): Comparative animal nutrition and metabolism, Cambridge University Press, UK
- Kohlmeier M. (2012): Nutrigenetics, Applying the Science of Personal Nutrition. Academic Press December 2012
- Erdman J.W. (2012): Present Knowledge in Nutrition 10th ed. Wiley-Blackwell.

- Ross A.C. (2013): Modern Nutrition in Health and Disease 11th edit. Lippincott Williams & Wilkins.
- Plumlee, K.H. (2004): Veterinary Clinical Toxicology. Mosby, Elsevier, St Louis, Missouri, USA.

2. Species-specific and Clinical Nutrition

- Geor, R.J., Harris, P.A., Coenen, M. (2013): Equine applied and clinical nutrition. Saunders.
- Fascetti, A.J. & Delaney SJ (Eds) (2012). Applied Veterinary Clinical Nutrition (2012). Wiley-Blackwell.
- Klasing, K.C. (1998): Comparative Avian Nutrition. CABI International, Wallingford
- National research council: Academic Press, Washington, DC.
- Nutrient requirements of horses. 6th ed., Academic Press, Washington, DC (2007).
- Nutrient Requirements of Beef Cattle: 7th Edition: Update (2000)
- Nutrient Requirements of Swine: 11th Revised Edition (2012)
- Nutrient requirements of Dogs and Cats. (2006)
- Nutrient Requirements of Small Ruminants (2007)
- And others of this serie
- Fuller, M.E. (2004): The encyclopedia of Farm Animal Nutrition. CAPI Publ., Wallingford.
- Leeson and Summers (2005): Commercial Poultry Nutrition. 3rd ed., Nottingham University Press.
- http://www.razeghi.ir/index2.php?option=com_docman&task=doc_view&gid=29&Itemid=51
- Adams, C. (2008): Total nutrition – feeding animals for health and growth. Nottingham University Press.
- Frape, D. (2010): Equine Nutrition and Feeding. 4th ed., Wiley -Blackwell.
- Other equivalent books in specific languages can be chosen as well.

2. Journals

X	Journal of Animal Physiology and Animal Nutrition
X	Proceedings of the Society of Nutrition and Physiology
X	Archives of Animal Nutrition

	The American Journal of Clinical Nutrition
	Annals of Nutrition and Metabolism
	The British Journal of Nutrition
	Feed mix
X	The Journal of Nutrition
	Nutrition Research
	The Journal of Nutritional Biochemistry
	Journal of Nutritional Immunology
	Journal of Nutritional Sciences
	Nutrition Reviews
	Journal of Enteral and Parenteral Nutrition
	Annual Review of Nutrition

X References marked with this sign are considered to be important

Any related and scientifically important articles with new impacts on veterinary and comparative nutrition from: PLOS one, Veterinary Journal, Equine Veterinary Journal, Journal of Dairy Science, Journal of Animal Science, Journal of Veterinary Internal Medicine, Veterinary Clinics of North America, Journal of the American Veterinary Medical Association, Journal of the American Animal Hospital Association, Journal of Small Animal Practice, Critical Reviews in Food Science and Nutrition, Applied Animal Behavior, Livestock Science, Journal of Feline Medicine and Surgery and other relevant journals and proceedings from nutrition congresses. It is stressed that this is a non-limitative list.

4.6. Example Exam Questions

1. General Examination Questionnaire (see above, PART 1)

- Example Question 1

Comparison of rumen and hindgut fermentation:

1. Hindgut fermentation differs only quantitatively from rumen fermentation
2. Reductive acidogenesis is a major feature in both compartments
- 3. Lower quality roughage is fermented to a higher extent in the rumen than in the hindgut, but the percentage of energy lost by gas production is also higher in the rumen**
4. There is no methane production during hindgut fermentation
5. Soluble fermentable carbohydrates such as starch increase methane production

- Example Question 2

γ-Linolenic acid (GLA; 18:3 n6), which is contained in safflower oil (*Carthamus tinctorius*), evening primrose (*Oenothera biennis*) and some other plant oils:

1. DGLA is the precursor of prostaglandin PGE1

2. DGLA is the precursor of prostaglandin PGE2
3. DGLA is the precursor of prostaglandin PGE4
4. all effects of DGLA are pro-inflammatory

- Example Question 3 (Essay)

How is Ca metabolism regulated? Which organs are involved and what are the problems associated with Ca metabolism?

Answer key: PTH, Calcitonin, Vitamin D, Different Vitamin D forms, kidney, 1-α-Hydroxylase, Intestines, Calbindin, Milk production, paresis, growth of large breed dogs, Uroliths in different species

2. Companion Animal Questionnaire (see above, PART 2)

- Example Question 1

For optimal urolithiasis prophylaxis in pet rabbits, which of the following diets is recommended?

1. Mixture of grass hay and lucerne hay
2. Lucerne hay, grain-based concentrates and fresh green herbs
- 3. Grass hay ad libitum, fresh green herbs**
4. Lucerne hay and high-fibre concentrates
5. Fresh green herbs and grain-based concentrates

- Example Question 2

Obese dogs, compared to lean dogs:

- 1. Demonstrated a significant decrease in plasma ghrelin and a significant increase in plasma leptin and insulin concentrations**
2. Demonstrated a significant increase in plasma ghrelin, leptin and insulin concentration
3. Demonstrated a significant decrease in plasma ghrelin, leptin and a significant increase in plasma insulin concentrations
4. There is no significant difference between lean and obese dogs regarding plasma concentration of ghrelin, leptin and insulin

- Example Question 3 (Essay)

Dietary intervention in cats affected by orthopaedic disorders:

Answer key: Complete and balanced nutrition for the individual patient, promoting cartilage repair by providing proteoglycan precursors, controlling pain, manganese (co-factor for glycosaminoglycan synthesis), weight control, long-chain omega-3 fatty acids (DHA, EPA because of low activity of delta-6-desaturase in cats), ratio of omega-6: omega-3 fatty acids, chondroitin sulphate and glucosamine, antioxidants.

3. Food Producing Animal Questionnaire (see above, PART 2)

- Example Question 1

On a farm with sows there is a high incidence of gastric ulcers (pars nonglandularis), including cases of death. Which of the following dietary adaptations will increase the incidence and severity of gastric ulcers?

1. Coarser grinding of diet ingredients
2. Feeding meal instead of a pelleted diet
- 3. Increasing the proportion of maize in the diet**
4. Increasing the proportion of barley in the diet
5. Use of straw as litter instead of housing without bedding material

- Example Question 2

Age, physiologic state and breed affect insulin sensitivity in horses - which of the following statements is true?

1. Insulin sensitivity is low in neonates with an increase to adult values after weaning
2. In lean horses, a 90 day adaptation to high glycemic diet alters peripheral glucose disposal and therefore skeletal muscle insulin sensitivity
- 3. Horses older than 20 years have lower insulin sensitivity compared to younger, mature horses**
4. Regular physical activity has no influence on insuline sensitivity of healthy horses

- Example Question 3 (Essay)

What is the negative effect of negative energy balance during lactation on fertility in cows and sows, and what is the mechanism behind?

Answer key: Period of high milk production coincides with the recruitment of new follicles for the next gestation, is associated with negative energy balance, body fat stores are mobilized, mobilization products (e.g. stearate) are toxic to oocytes and follicles (Leroy et al., 2005) - prolonged intercalf interval. Endocrinological signaling

during deep negative energy balance: low insulin, leptin, IGF-1 and glucose concentrations and high NEFA concentrations hamper follicular development, insufficient positive feedback of estrogen on the hypothalamus.

5. ECVCN Diplomates

5.1. Annual Fees for ECVCN Diplomates

The ECVCN Diplomat is obliged to pay the membership fee of the ESVCN and ECVCN. ~~This can be done year round~~ must be done by March as instructed by the treasurer. Information on ESVCN membership and the annual membership fee can be found on the ESVCN website (<http://www.esvcn.eu/society>).

Annual payment of the membership fee is mandatory for ECVCN Diplomates in order to obtain re-certification. The ECVCN Credentials Committee can ask the Diplomat to pay any remaining dues before granting re-certification.

5.2. Submission of Exam Questions

The deadline for submitting questions is the 1st of ~~March~~ June.

The ECVCN Diplomates are obliged to send at least five (5) multiple choice questions (up to 5 answers with one correct answer) and one (1) essay question each year. All questions must be referenced. The correct answer should be marked (bold text) for multiple choice questions. The expected answers of the essay question have to be specified by use of keywords that should be mentioned in the answer key, and by providing the allocated points per keyword. All questions must be referenced.

Further, ECVCN Diplomates must assign the questions to the respective examination (general, food producing animal or companion animal examination).

Annual submission of exam questions is mandatory for ECVCN Diplomates in order to obtain re-certification. The ECVCN Credentials Committee can ask the Diplomee to submit any remaining questions before granting re-certification. Yet, credit points will not be allocated if questions are not submitted on an annual basis, mentioned below in *Section 5.3. Re-certification of ECVCN Diplomates*.

The Chair of the ECVCN Examination Committee collects all questions sent by the ECVCN Diplomates; he/she prepares the questionnaires for the examination. If a Resident supervised by the Chair of the ECVCN Examination Committee is sitting the ECVCN Certifying Exam, the Chair of the ECVCN Examination Committee has to nominate a member of the committee to take over the preparation of the questionnaires. The questionnaires must be reviewed and corrected by all members of the ECVCN Examination Committee.

The preparation of the questions must be done in accordance to the *Guidelines for Preparing Exam Questions for the ECVCN Certifying Exam*. The guidelines and template are available on ECVCN website. Diplomats are advised to use this template for preparation of the questions.

5.3. Re-certification of ECVCN Diplomates

Each ECVCN Diplomee will be re-evaluated by the ECVCN Credentials Committee every 5 years, starting 5 years after they first became a Diplomee (starting date January 1st after passing the ECVCN Certifying Exam).

In order to obtain re-certification they have to:

- Fulfil the requirement of practicing the speciality for more than ~~60~~ 50% of their time (i.e. > 20 hours per week, based on a normal working week of 40 hours, including overlap to related specialities),

- Pay the membership fee of the ESVCN and ECVCN on an annual basis as described in *Section 5.1 Annual Fees for ECVCN Diplomates*
- Submit exam question on an annual basis as described in *Section 5.2 Submission of Exam Questions*
- Attend the Annual General Meeting of the ECVCN at least three (3) times every five (5) years
- Fulfill the requirements according of the ECVCN Re-certification Programme as described below.
- Provide two letters of reference (template on website)

The ECVCN Re-certification Programme is performed according to a credit point system. Each ECVCN Diplomat has to achieve a **minimum of 100 points** over 5 years.

The following items are included in the ECVCN Re-certification Programme:

Items	Points
A. Publications related to veterinary and comparative nutrition	16 pts MAX per year
Only in international peer-reviewed journals	
- Original scientific article related to nutrition	
o First or last author ¹	8 pts
o Co-author	4 pts
- Case report, scientific review, book contribution	
o First or last author ¹	4 pts
B. Presentations related to veterinary and comparative nutrition	12 pts MAX per year
- Short scientific communication at congress	

○ National	1 pt
○ International	2 pts
- (Invited) Scientific review at congress	
○ National	2
○ International	3
- (Invited) speaker during continuing education programmes	
○ National	1 pt
○ International	2 pts
C. Attendance of congresses related to veterinary and comparative nutrition	12 pts MAX per year
○ National	3 pts/half day
	6 pts MAX per meeting
○ International	3 pts/half day
e.g. ESVCN ² , AAVN, EZNRG	12 pts MAX per meeting
D. Attendance of congresses not related to veterinary and comparative nutrition	12 pts MAX per year
○ National	1 pt/half day
	2 pts MAX per meeting
○ International	2 pts/half day
e.g. ACVIM, ECVIM, EAAP, ASAS	10 pts MAX per meeting
E. Submission of exam questions	5 pts per year
- Five (5) multiple choice questions and one (1) essay question per year for general or specialty exam ³	
F. Training Residents	12 pts MAX per year
- Training an ECVCN Resident	6 pts/Resident
G. Membership of ECVCN Executive Committee or ECVCN Committees	6 pts/year
H. Membership of other veterinary related boards or committees	
- International Editorial Board	1 pt/year

- Advisory Board	1 pt/year
- Professional Society Board	1 pt/year
I. Other ⁴	

¹As first, last **or corresponding** author (initiator, coordinator, and responsible for work and publication)

²Diplomates have to attend the Annual ESVCN Congress at least 2 times within 5 years

³Examination Committee will evaluate the questions

⁴The Credentials Committee will decide if and how many points will be given to activities that are not mentioned in the above stated categories but are valid to the profession

ECVCN Diplomates must submit their re-evaluation package for re-certification to the ECVCN Credentials Committee **on or before June 1st of the year of recertification.**

The following materials must be submitted by the ECVCN Diplomates:

- Completed and signed *ECVCN Diplomat Re-evaluation Form*.
This form is available from on the ECVCN website.

- Curriculum Vitae

- 2 reference letters (see ECVCN website for template) from individuals who have worked professionally with the diplomate over the period of re-certification. It is not allowed that the referee is a relative or partner (business or social) of the applicant. One referee should be an EBVS - recognised Diplomat from the same country and of the same speciality. If there are no professionally qualified persons in the applicant's country or speciality, specialists in other disciplines or a senior colleague (e.g. Head of Department, Dean) may act as a referee. Only one academic colleague at the same institute may provide a reference.

- Documentation Forms:

The following completed and verified forms must accompany the application:

- First page of published papers;
- Evidence of attendance of congresses and meetings
- Proof of oral presentations; copy of scientific programme, copy of proceedings abstract including cover page of proceedings

The application package must be submitted electronically as one single pdf document **on or before June 1st of the year of re-certification**. Different documents should be arranged in the sequence listed above and different sections should be bookmarked (e.g. create a table of content within the pdf document, allowing to navigate easily within the document – Document, Add Bookmark) to facilitate review by the ECVCN Credentials Committee. The re-evaluation package should be send to the ECVCN Executive Secretary and the Chair of the ECVCN Credentials Committee as an email attachment. The ECVCN Diplomate should make sure to ask for a read receipt. The Chair of the ECVCN Credentials Committee will confirm that the application package has been received by email.

All submitted application materials become the sole property of the ECVCN and will not be returned to the ECVCN Diplomate.

The responsibility for accuracy and availability of all required documents rests with the ECVCN Diplomate.

The ECVCN Credentials Committee will decide on the ECVCN Diplomate's file and will notify the ECVCN Diplomate of the decision by email **within three (3) months** after receiving the complete re-evaluation package.

All correspondence regarding application procedure and notification should be addressed to the ECVCN Executive Secretary and the Chair of the ECVCN Credentials Committee.

If a Diplomate does not meet the required number of points, they can be given one year extra in which to achieve at least the number of missing points. If they succeed,

they will then be re-evaluated four years from the end of the extra year. If they do not succeed, or if for any other reason a Diplomate does not re-certify, they will be made non-certified Diplomates by their College, removed from the EBVS specialist register, and may use the title of 'Diplomate', but not the title of "Specialist". A non-certified Diplomate seeking to revert to certified Diplomate status needs to satisfy the Credentials Committee of the College.

If an ECVCN Diplomate's re-certification is not approved, the status of this ECVCN Diplomate will be "non-practising". This ECVCN Diplomate can resubmit his/her application for re-certification the next year. If the ECVCN Credentials Committee decides that "inactive" Diplomate has collected sufficient points during the past year, he/she can be granted the "practising" status.

6. Important Dates

6.1. For ECVCN Residents

Item	Deadline	Where to send	Committee
Acknowledgment of internship	Prior to programme initiation	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Annual Membership fee ECVCN	Prior to programme initiation	✓ ECVCN Website ✓ Treasurer	NA
Registration within existing Standard Residency Programme	90 days prior to programme initiation Within 6 weeks prior to programme initiation	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency

Application Alternative Residency Programme	Prior to programme initiation (recommended 6 months prior)	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Changes to the Standard or Alternative Residency Programme	Before changes are implemented	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Residency class – Confirmation of attendance + proposed title of presentation	June 1 st	✓ Vice-president	NA
Residency class - presentation	September 1 st (or as indicated by the vice president)	✓ Vice-president	NA
Assessment of performance and progress (including summary from 2 yearly meetings + activity log book + future plans)	June 1 st	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Application to sit ECVCN Certifying Exam	March 1 st of the year of anticipated exam	✓ Executive secretary ✓ Chair Credentials Committee	Credentials
Case report submission	March 1 st once a year	✓ Executive secretary ✓ Chair Credentials Committee	Credentials
Exam application fee	March 1 st of the year of	✓ Executive secretary ✓ Treasurer	

	anticipated exam	✓ CC: Chair Credentials Committee	
Justification Waiting Period	March 1 st of year where exam should be taken	✓ Executive secretary ✓ Chair Credentials Committee	Credentials
Final completion + Official journal acceptance of paper(s) publication	June 1 st of the year of anticipated exam	✓ Executive secretary ✓ Chair Credentials Committee	Credentials
ECVCN certifying exam	September before ESVCN Congress	NA	Examination
Notification of Results of ECVCN Certifying Exam	Official: week after ESVCN Congress Within 3 1 months after examination	NA	Examination

6.2. For ECVCN Diplomates

Item	Deadline	Where to send	Committee
First Payment Annual ESVCN/ECVCN Membership fee for New Diplomates	January 1 st	✓ ESVCN website ✓ CC: treasurer and Executive Secretary	
Submission Exam Questions by New Diplomates	January 1 st following year of examination	✓ Executive Secretary ✓ Chair Examination Committee	Examination

Annual ECVCN Membership fee for New Diplomates	January 1st January (reminder will be sent)	✓ ESVCN website ✓ CC: treasurer and Executive Secretary	
Submission Exam Questions	June 1st March 1st	✓ Chair Examination Committee ✓ CC: Executive secretary	Examination
Re-certification of Diplomates	June 1 st (every 5 years)	✓ Executive secretary ✓ Chair Credentials Committee	Credentials
Application Standard Residency Programme	Before start of any training	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Re-submission Standard Residency Programme	June 1 st (every 5 years)	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Assessment of Performance and Progress of Residents	June 1 st	✓ Executive secretary ✓ Chair Education & Residency Committee	Education & Residency
Statement of completed training	Within 90 days after programme completion	✓ Executive secretary ✓ Chair Education & Residency Committee ✓ Chair Credentials Committee	Education & Residency + Credentials
Reference Letters for Residents	March 1 st of the year of	✓ Executive secretary ✓ Chair Credentials Committee	Credentials

	anticipated exam		