

Adaptation problems in kittens

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The domestic cat (*Felis catus*) is an exceptional example of social behavior evolution by domestication (Wirth-Dzięciołowska, 1999). There are wide discrepancies in the estimated time and place where exactly this domestication started. A majority of older sources suggest that it began in Nubia at 4000–3700 BC (Clutton-Brock, 1981). However, the newest archeological studies estimate the date of domestication at 8000 years ago and point to the Middle East as its location. Most of the sources assume that the Nubian cat (*Felis silvestris lybica*) was an ancestor of the domestic cat (Vigne & Evin, 2016), most of all because the differences between them are so small that they are classified into one subspecies (Pockock, 1907). The domestic cat inherited from its ancestor not only characteristic appearance but also typical territorial behaviors, so specific to felids (Bessant, 2001).

Several thousand years have passed from cat domestication, and it has become one of the most popular pet animals, however, because of its wild nature, it still causes many problems to breeders and owners. The territorial behavior inherited from the Nubian cats is connected not only with burdensome marking of their territory with urine and pheromones but also with problems with cat's adaptation to changes in housing environment (move, change of the owner). Pedigree cat breeders and shelter personnel often encounter problems with cats' adaptation to new housing conditions.

This problem most often has to be confronted when kittens are transitioned to new owners. Similar troubles arise during mating when a female "lives" with a male for some time (Bradshaw, 2014).

Adaptation of a 3-month kitten to a new environment should last about a week (Bower & Bower, 2003). It is commonly accepted that this period increases with animal's age (Morris, 2005), however, it is not a hard-and-fast rule. Often cat adaptation is much longer and more difficult, in extreme situations, a cat is not able to adapt at all. In some cases, it can be caused by errors committed unintentionally by its purchaser. They can be easily corrected by being in a direct contact with the breeder. However, sometimes, in spite of no visible errors made by new keepers, acclimation is very difficult. Every breeder met in his work with extremely difficult cases of cat adaptation to a new environment (Bruce, 2002). However, in spite of many such cases, guidebooks and popular science books are still based on stereotypes and false reasoning that have been repeated for years.

The aim of the present studies was to determine the factors influencing the time necessary for kittens to adapt to new husbandry conditions and to compare them with the present recommendations related to the care for these animals. The reference point was defined as the time required for complete adaptation of the kitten to a new environment. Full adaptation was recorded when the kitten on its own initiative, without an incentive or compulsion, sought physical and emotional contact with the human (Rochlitz et al., 1998).

Material and methods

The study is based on questionnaires sent to purchasers of kittens from one chosen breeder of the Siberian cats. Such methodology minimized the influence of different socialization procedures till the 3rd month of kittens' life and breed differences.

The Siberian cat is the only „open” breed accepted by Fédération Internationale Féline. It means that it is allowed to include wild cats living in the area of Russia in its pedigree book. This fact is a chance for the Siberian cat to maintain its natural traits, unchanged by breeding selection. Owing to this, these cats are clever, intelligent and easily adapt to new conditions, including human dwellings.

The questionnaire contained 22 questions, which were divided into thematic groups. The first group contained questions related to characteristics of the cat, like age and sex. The next group of questions regarded the kitten’s new home and family. Respondents answered questions about the size and plan of their home, the number and species of resident animals, family members and lifestyle. The obtained answers on the home size were categorized into three groups: below 50 m², from 50 to 100 m² and above 100 m².

The aim of such design of the questionnaire was to verify the popular opinions related to the effect of home and family size on adaptation process and determination of the impact of other resident animals on the course of adaptation. In the third part of the questionnaire the owners were asked to describe behavior and work of the owner with the cat. Respondents related their experience in management of animals and changes they made in their life and home for arrival of the cat. These questions served mostly to analyze the role of the so-called “sanctuary” room in the adaptation process and significance of pre-adoption visits for kitten’s adaptation to a new husbandry conditions.

The „sanctuary” room is a room with food/water bowls, litter box, appropriate sleeping area, in which the cat is confined for the first days of staying at new home. The “sanctuary” room is thought to help the kitten understand its situation without the need to immediately face the whole territory of its new home. It is often believed that the richer environment of the “sanctuary” room, the lower the adaptation stress to the cat (Ellis et al., 2017; Rochlitz, 1999).

All questions in the questionnaire were open. Such form of the survey was assumed to facilitate sincere and reliable answers of respondents. It was intended to encourage respondents to give thorough answers and to be comfortable describing their reflections, emotions

and observations, especially regarding so delicate matters as human-cat relationship or own thoughts and feelings.

The obtained results were expressed as mean, maximum and minimum values and were subjected to statistical analysis. Incomplete questionnaires were rejected. Finally, questionnaires related to 50 kittens (28 males and 22 females) were included in the analysis.

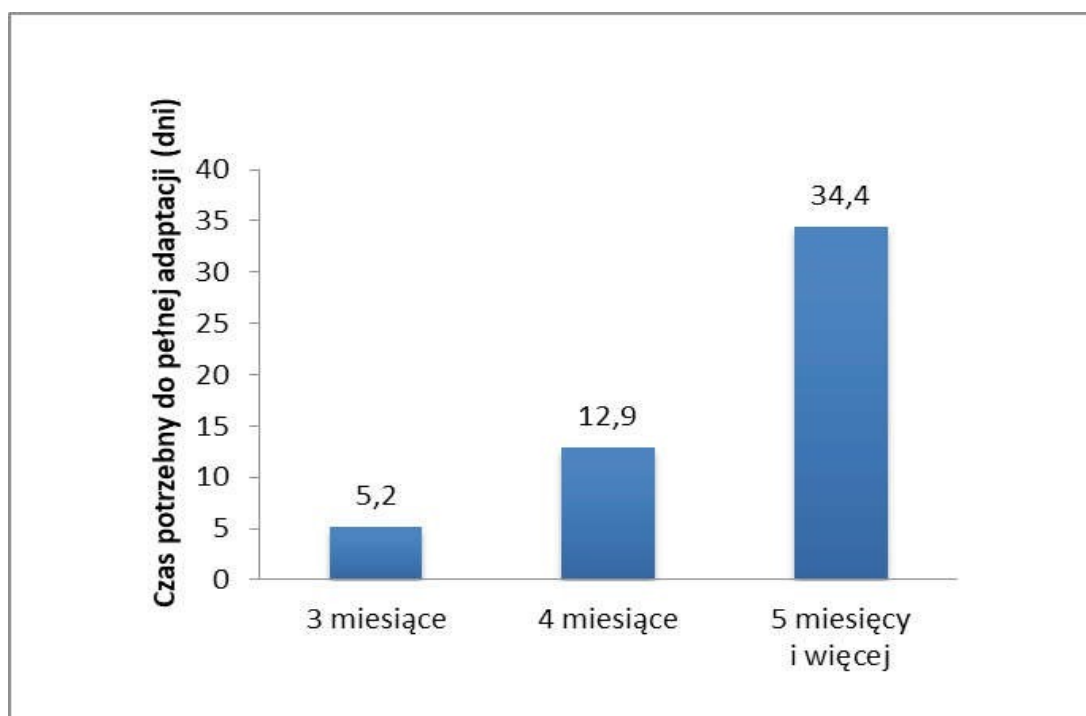
Results and discussion

The mean time of adaptation in the studied kittens was 6.45 days. It happened that kittens adapted to the new environment already on the day of arrival but in the most extreme case adaptation lasted even 180 days. The time of adaptation and its course were influenced by many factors, including character, temperament, age and sex of the kitten and degree of socialization which was the effect of training provided by the breeder. Other factors were dependent directly on new owners.

The present survey demonstrated that female kittens adapted faster than males. Females needed on average 5.9 days for complete adaptation while males 7 days. The longest time of adaptation in a female kitten was 30 days and in a male even 180 days. It was probably caused by the fact that these are females that take care of offspring and have to be more versatile and faster adept to new environmental conditions. Respondents confirmed that kitten’s age was another factor impacting on adaptation process.

The obtained responses on kittens’ age were divided into three age groups: 3 months, 4 months and 5 months or more. The first group contained 20 kittens, while the next groups comprised 13 and 16 kittens, respectively. As expected, 3 months old kittens were the fastest-adapting group, needing on average 5 days to adapt to new environment. The shortest time of adaptation in this group was one day and the longest 30 days

This time significantly increased with kittens’ age. In 4 months old kittens, the time of adaptation was 12.9 days while in those older than 5 months it was an average as long as 34.4 days (Fig. 1). In 5-month kittens transitioned to new environment the time needed for complete adaptation ranged from a minimum of 3 days to a maximum of even 180 days.

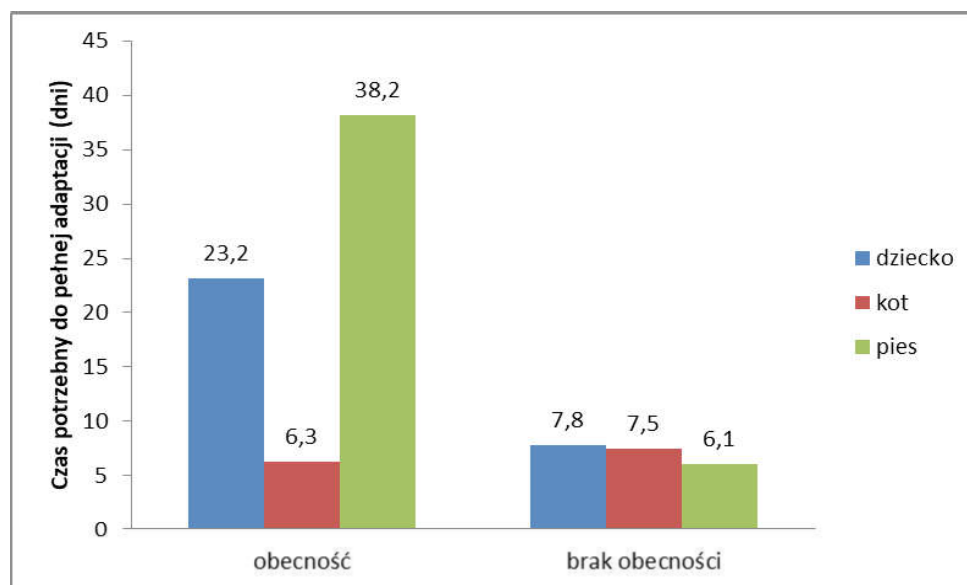


Czas potrzebny do pełnej adaptacji (dni) – *Time of adaptation (days)*
miesiące – *months*, i więcej – *and over*

Diagram 1. The impact of cat's age on the time of adaptation

The next group of questions aimed to verify popular theories about home size, number of rooms and family size on the time of adaptation of kittens to new housing conditions. The obtained results were surprising and undermined the common opinion that cats feel lost in big apartments or houses. Kittens first got acclimated in houses bigger than 100 m². At the largest residential space, the longest time of adaptation amounted to 60 days. The mean time of adaptation was 6.6 days. In kittens housed in 50–100 m² homes this time was prolonged to 12.4 days. In the smallest apartments, kittens needed as many as 16 days for full adaptation.

The shortest time of adaptation was 3 days and the longest even 180 days. Similar responses were obtained with regard to the number of rooms at home. Adaptation was the easier the larger the new home was. The obtained results can be most probably explained by more potential hiding places for a kitten in a larger house. The more hiding places the smaller kitten's stress (Vinke, 2014). From different hiding places, it can calmly and safely observe and get acquainted to the new owner, increasing confidence without entering into direct interactions caused by a small home size.



Czas potrzebny do pełnej adaptacji (dni) – *Time of adaptation (days)*
 obecność – *presence*, brak obecności – *without presence*, dziecko – *child*, kot – *cat*, pies – *dog*

Diagram 2. The impact of presence of children and animals on the time of adaptation

Although these results strikingly depart from the popular opinions about the relationship between the home size and time of adaptation, they fully confirm recommendations of breeders who advice to prepare as many as possible hiding places at new home for the kitten's adaptation period.

The survey showed that the presence of children at homes of kitten's owners was an important factor for the time of adaptation. As many as 28 respondents reported having children. In a majority of cases, children were younger than 10 years of age. Kittens not accompanied by children during adaptation period needed about a week for full adaptation whereas this time increased thrice in the presence of children (23.2) (Fig. 2). The longest time of adaptation in the company of children was 180 days, the shortest 7 days while the respective values without children were 64 days and 1 day.

The answers of respondents confirmed opinions circulating among felinologists that the presence of children has a very adverse effect on the time of adaptation. Probably it is caused by the fact that loudness and uncoordinated and abrupt movements of especially young children

are an additional, unknown and stressing factor for kittens. It would be an optimal solution to adapt the kitten to new home at a time when children are out for a longer period.

The time of adaptation depended also on the presence of resident animals, especially dogs and cats (Fig. 2). In the analyzed population, 7 persons had resident cat, 5 persons had a dog and 7 persons had both resident cat and dog. In total, 19 respondents had a pet animal which participated in adaptation of the new kitten. Analysis of the obtained responses confirmed that the time of adaptation depended on the resident animal species. The time of acclimation of the kitten at home with a resident dog was over 35 days, i.e. it was five times longer than at home with a resident cat (7.5 days). In the presence of a cat, the longest time of adaptation was 24 days and the shortest 1 day while in the presence of a resident dog, some cats needed as long as half a year for full adaptation to new home.

It can be expected that the dog presents some foreign, unknown to the kitten behaviors and reactions, thus more than a month is needed for both animals to read each other's signals. On the other hand, the presence of another cat

increases kitten's self confidence. It does not perceive the other cat as a threat but rather as a substitute of the left colony.

Respondents also described their experiences in caring for animals and training of the new kitten, including changes in family lifestyle that they introduced for the kitten's adaptation period. The aim of this part of the questionnaire was to determine the role of proper preparation of the owner and his home for kitten's arrival to make the adaptation process easier, and to verify commonly accepted theory about the necessity of the "sanctuary" room and the beneficial effect of pre-adoption visits.

The first question in this part was related to pre-adoption visits. It was shown that cats not visited by future purchasers needed 9.1 days for full adaptation while those whose owners visited the breeder needed 8.7 days. It indicates that this factor does not significantly influence the kitten's time of adaptation. The effect of the "sanctuary" room was another factor under study. The "sanctuary" room is a separate closed room with food/water bowls, litter box, several scratching pads in which the kitten will spend several first days at its new home until gets used to new housing conditions. In the opinion of a majority of behaviorists, preparation of the so-called „sanctuary” room is an exceptionally beneficial factor for adaptation process. Only 11 respondents followed the suggestion to prepare the „sanctuary room” while the remaining 39 owners let the kitten to move freely all over new home right from the time of its arrival. The cats which had access to the whole home got adapted within 11.8 days on average while those utilizing the "sanctuary" room needed 14.3 days.

Therefore, it seems safe to say that preparation of the "sanctuary" room does not greatly influence the time of adaptation or even slightly delays it. It can probably be caused by

inability of the kitten to freely observe the house-hold members during its first days at new home.

Recapitulation and conclusions

The main aim of the present studies was to answer the question how the common guidelines recommended by breeders and behaviorists, regarding optimization of kittens' adaptation conditions, work in practice.

The obtained results indicate that female kittens adept decidedly faster than males and ability to adapt declines with kitten's age. It is a very important guidance for breeders and potential cat owners who should be aware of an increased effort in adaptation process of a kitten older than 6 months of age. On the other hand, the results regarding the home size and the number of rooms were surprising. Contrary to the common opinion, cats adapted much faster at a larger home with many rooms. Unexpected results were also obtained with regard to the use of the „sanctuary” room. Kittens whose owners did not prepare such room, needed similar time of adaptation as those which spent the first days at new home closed in a separate room. Results of these studies completely undermine the guidelines of breeders and behaviorists on these topics related to kitten's adoption.

The results of the present survey demonstrate that adaptation process is very complex and depends on many factors that may cause its acceleration or delay. Adaptation problems can affect each kitten, independently of the degree of its socialization. Therefore, in order to help the kitten harmoniously and quickly adapt to new environment, it is essential to take into account all components of this process.

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ADAPTATION PROBLEMS IN KITTENS

Summary

The problem of cats’ adaptation to a new breeding environment is a major challenge for behaviorists and breeders. It is believed that adaptation of a 3-month-old kitten to a new environment should last no longer than one week. Very often cat’s adaptation takes much longer and is more difficult. The main purpose of this study was to define the optimal adaptation conditions in a new environment, based on the example of kittens. The research was based on the survey conducted among the new owners of Siberian kittens bred in a selected cattery.

The studies have shown that the problem of adaptation to the new environment is underestimated. It affects different cats, often sufficiently socialized. The time of adaptation is influenced by a huge number of factors and external stimuli.

Key words: Siberian cats, kittens, adaptation, problems



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