

## The role of health-resort treatment of children and adolescents in health care

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### Abstract

More and more children suffer from birth defects and chronic diseases. A very effective form of the treatment is a stay in a health-resort. The aim of the study is to emphasize the importance of the children's health-resorts treatment in Poland. The aim of the study is to emphasize the importance of the functioning of children's health-resort treatment in Poland. This work is based on the study of literature and the contemporary state of knowledge about health-resort treatment of children and adolescents in Poland. The literature studied by the author covers topics such as: legislation related to health-resort treatment, forms of the patient's stay in the health resort, profiles and treatment methods, including extremely important climate therapy. The health-resorts carry out the treatment of the sick, rehabilitation, and prophylaxis. There are many possibilities for a child to stay in the health-resort. It depends on the sources of financing, the age of the patient, the presence of a caregiver or the object in which the patient will stay. A child's trip to a direct health-resort is also conditioned by the therapeutic profile, like treatment of the upper respiratory tract diseases, the nervous system diseases or obesity. In the health-resort treatment of children natural resources like climatotherapy are primarily used. The paper describes additionally the recommended children's health-resort treatment changes developed at the request of the Minister of Health by a specially appointed team in the field of balneoclimatology or paediatrics. It is important to adapt the health-resorts and the National Health Fund to the recommendations of the Team for the development of the concept of changes in the health-resort treatment system to be able to meet the individual needs of the young patient and his family. The mentioned recommendations will bring many significant changes in the children's health-resort treatment, leading to maintaining therapy conditions better and will make separation from home easier to cope with for a small patient. Repeating this kind of treatment at a young age allows to achieve a long-lasting improvement in the patient's health and reduces the cost of further treatment.

**Key words: health-resorts for children, natural resources, climate therapy, balneology, treatment of children and adolescent, chronic diseases.**

### Introduction

Nowadays, more and more children suffer from birth defects or chronic diseases, e.g. bronchial asthma or various types of allergies. However, the great role of health-resort in the treatment of these diseases is underestimated. Ages ago, man imitated sick animals and benefited from the healing properties of peat and mineral waters (especially warm ones). Evidence of this exists in the form of excavations almost all over the world. Health-resort treatment therefore has an extremely long tradition (Ponikowska et. al. 2009).

Currently health-resort treatment is an organized form of providing health services, carried out in health-resorts using natural healing natural sources and climate properties for the treatment and rehabilitation of chronic diseases (Dido et.al., 2021; Ponikowska et.al., 2009; Marczak et. al., 2013). It is run in three types of objects: 1) a health-resort hospital - designed for sick people requiring daily, systematic medical inspection in stationary conditions; 2) health-resort sanatorium - for patients with chronic diseases of a small degree, requiring medical care in stationary conditions; 3) health-resort clinic – intended for patients who do not require stationary conditions (Ponikowska et. al., 2009).

The methods used in the health-resort complement and consolidate the treatment initiated in hospital or outpatient conditions (Katan et. al., 2017; Shestopal et.al., 2021). Sometimes they prevail over pharmacological methods. Unlike many synthetic drugs, therapeutic procedures arouse defensive reactions of the organism. The positive effects of the treatment are noticeable long after the end of the treatment in the health-resort. Advised and performed properly, the treatment has no side effects on other organs or systems, which happens in case of the long-term pharmacotherapy, e.g. antibiotics or steroids (Straburzyński et. al., 2000; Łazarek et. al., 2007). Just staying in a place with a healing climate significantly supports the treatment of many diseases.

Health-resort treatment of children differs from adults especially due to the differences in the functioning of the nervous system, immune system, endocrine glands, gonads or bones. Due to the greater sensitivity to both physical and mental stimuli, it is recommended to dose differently and even withdraw from therapy some

physiotherapeutic treatments recommended for adults. In the case of children, a procedure performed on a small area can more often affect the whole body, and a small stimulus can cause an excessive reaction.

Therefore, it is necessary to individually and extremely precisely plan the child's therapy during the stay in the health-resort, taking into account the degree of morphological and functional development of the child, its general condition, nutritional status, type of disease and the degree of its progression. In a children's health resort, patients with diseases of the upper and lower respiratory tract, with diseases of the musculoskeletal system (of orthopedic, rheumatological and neurological origin), cardiac and metabolic diseases are most often treated. Properly selected therapy will promote the mobilization of the child's immune mechanisms, stimulate its development and general strengthening. If the child is overloaded with an excess of treatments, his condition will deteriorate, fatigue and even exhaustion (Ponikowska et. al., 2017).

The aim of the study is to emphasize the importance of the functioning of children's health-resort treatment in Poland.

### Material & methods

This work is based on the study of literature and the contemporary state of knowledge about health-resort treatment of children and adolescents in Poland. Both medical and legal scientific literature as well as in the field of health-resort tourism, marketing and management were analyzed.

The literature studied by the author covers topics such as: legislation related to health-resort treatment, forms of the patient's stay in the health resort, profiles and treatment methods, including extremely important climate therapy. In the literature on the subject, we meet the benefits for the patient of staying in the health-resort and the problems of modern health-resort treatment of children and adolescents. Recommendations for changes in the mode of functioning of polish health-resort objects are also included.

### Results

Goals and tasks of health-resort treatment of children.

Health-resort treatment of children is aimed at:

- 1) Restoring of functional efficiency of the child's body after suffering from certain diseases.
- 2) Strengthening the body before and after surgery.
- 3) Treatment of disease with natural resources.
- 4) "Hardening" – increasing the ability of the child's body to adapt to changing environmental conditions by increasing the general response and reaction.

In the health-resort, activities focus on treating the sick, rehabilitation and prophylaxis. Health-resort treatment of children and adolescents refers to patients with chronic or recurrent diseases such as bronchial asthma, chronic inflammation of the respiratory tract, rheumatic or allergic diseases. Under the applied conditions, the specific environment, an appropriate regime and the use of balneal and climate therapeutic treatments the patient's health state is expected to improve (Paszowska, 2018). Health-resort rehabilitation of children includes condition after hospital treatment, during the recovery period, e.g. after an acute recurrence of rheumatic disease or after surgery. The purpose of rehabilitation in the health-resort is to cure the disease or alleviate its consequences, improve patient's poor form or develop replacement skills. This also includes medical conditions before the scheduled surgery. Prophylactically, children are sent to the health-resorts to combat disease disposition, to treat the disease and to prevent recurrence. This applies to children, e.g. with weak immunity, inhibited physical development or nervous children (Rybicka, 1971).

Forms of stay in a health-resort.

In the past, stays in children's sanatoriums lasted 2 or 3 months (and even longer – in the Rabka-Zdrój health-resort even 2 years) (Rybicka, 1971). Currently, in accordance with the Regulation of the Minister of Health of 2013, the guaranteed benefits in the field of health-resort treatment for children include:

1. Health-resort hospital treatment of children aged 3 to 18 years (27 days)
2. Health-resort sanatorium treatment of children aged 3 to 6 under the care of adults (21 days)
3. Health-resort sanatorium treatment for children aged 7 to 18 years (21 days)
4. Health-resort outpatient treatment of children (6-18 days).

The duration of the health-resort treatment referred to in points 1-3 may be extended once for a period not exceeding one corresponding stay, with the consent of the relevant branch of the National Health Fund, which confirmed the referral for health-resort treatment (Regulation, 2013). A commercial form is also possible – in this option all costs are covered by the parents/guardians. A child's stay in a health-resort hospital differs from a stay in a health-resort sanatorium in the length of the stay which is 27 days in hospital and 21 days in sanatorium (Mirek, 2013). The number of treatments provided is also higher: 66 in hospital, 54 in sanatorium. In addition to nursing care, daylong medical care must also be provided in hospital. In contrast to the adult patients' stay in a health-resort, children and young people must be guaranteed implementation of one-year pre-school preparation and compulsory schooling. Educational care must also be provided (the exception are children with their own guardian) and a common room and a playroom with equipment must be offered (Paszowska, 2017).

Therapeutic profiles of children.

Profiles, also called therapeutic directions, define the type of health services provided by health-resort treatment objects in connection with their natural resources, devices, medical staff, and climate. The therapeutic profile is established for the entire health-resort. One health-resort may have more than one profile. All units within a certain resort must operate in accordance with the direction established for the whole health-resort (Paszowska, 2017; Ministry of Health, 2017).

**Table 1. Therapeutic profiles dedicated to children in Polish health-resorts.**  
(Source: Own elaboration based on National Health Fund data from 1.03.2018)

Profile	Health-resort													
	Basko-Zdrój	Ciechocinek	Dąbki	Horyniec-Zdrój	Kołobrzeg	Krasnobród	Krynica-Zdrój	Kudowa-Zdrój	Rabka-Zdrój	Rymanów-Zdrój	Szczawnica	Szczawno-Zdrój	Swinoujście	Swieradów-Zdrój
Upper respiratory tract diseases														
Lower respiratory tract diseases														
Orthopedic and traumatic diseases														
Rheumatological diseases														
Diseases of the nervous system														
Cardiac diseases and hypertension														
Diseases of the blood and hematopoietic system														
Peripheral vascular diseases														
Diseases of the digestive system														
Obesity														
Diabetes														
Endocrine diseases														
Diseases of kidneys and urinary tract														
Skin diseases														

In Poland, there are currently 45 localities with the statute of a health-resort granted by the Ministry of Health and 17 therapeutic profiles for adults (Ministry of Health, 2013). Only 14 out of 45 health-resorts in Poland deal with the treatment and rehabilitation of children under contracts with the National Health Fund. On the ground of data from Table 1, it can be observed that most therapeutic profiles dedicated to children are run by health resorts in Kołobrzeg, Kudowa-Zdrój, Rabka and Szczawno-Zdrój. Certain directions of treatment are carried out only in one health resort in the country, such as children's skin diseases, which are treated only in Kołobrzeg, while there are 13 health-resorts for adults with this profile. There is no treatment for children with diseases of the eye and its appendages or gynecological diseases.

Therapeutic methods used in health-resort treatment of children and adolescents.

In the health-resort treatment of children, local natural resources such as mineral waters, peat or natural gases are used in particular (Królak, 2021). They are used for baths, compresses, drinking treatment or inhalation. It is important to provide at least one stimulus treatment per day amid contractual stay with the use of the above-mentioned natural resources (Paszowska, 2017). In addition to balneological methods, other physiotherapeutic treatments such as massage, kinesiotherapy or physical therapy (light therapy, electrotherapy, magnetic field, etc.) are also used in health-resort treatment (Ponikowska et al, 2009; Lewandowska, 2007). However, they do not exclude pharmacotherapy. If the use of medication is necessary, it remains continued during the child's stay in the health-resort. Health education of young patients is also very important. The health-resort is an ideal place for this type of activity, because it allows to gather many patients with the same disease at the same time and place. From an early age, patients can learn how to deal with a disease such as type 1 diabetes or obesity. It is also a great opportunity to introduce dietary treatment or psychological support (Ponikowska et al., 1995; Kupcewicz et al., 2017).

Climate therapy in children's health-resort treatment.

One of the basic principles of health-resort treatment is to perform stimulus treatments using natural medicinal resources, such as gases and healing waters as well as peat. The healing climate prevailing in health resorts is also extremely important (Paszowska, 2018; Vyazova, 2021). In the old days, the sick people, especially children, were recommended to change the environment, go to the mountains or by the sea to "harden the body and increase immunity". The seaside climate is characterized by high insolation and humidity. Its biggest advantage, however, is the presence of a sea aerosol. It contains salt crystals as well as elements such as magnesium, iodine, potassium or calcium. The highest concentration of aerosol in the vicinity of the coastline is observed during strong winds in spring and early summer. If we want to avoid exposing small patients to strong winds from the sea, it is worth organizing walks on forested dunes to breath the air enriched with essential oils, especially coniferous trees. The marine climate is conducive to the treatment of chronic diseases of the upper and lower respiratory tract, hypothyroidism, allergic diseases, rickets or some skin diseases such as psoriasis or

juvenile acne. The mountain climate, on the other hand, shows the strongest stimulus impact compared to other regions of the country. It is characterized by high air purity and favorable sunlight conditions, especially in winter and early spring (Mika, 2015). The mountain climate is conducive to the treatment and prevention of chronic respiratory and allergic diseases. It also has a therapeutic effect in diseases of the hematopoietic system (e.g. anemia), cardiovascular diseases and in after surgery recovery (Kasprzak, 2020). The most used climate therapy treatments in children include air baths associated with various forms of kinesitherapy such as games, fitness trials, and bicycle trips. Baths in the sea and lakes or inhalations of sea aerosol are also used. Staying in the microclimate of salt caves or brine graduation towers occurs effective in the treatment of many diseases (Gawel, 2012; Kochański, 2002; Kochański et. al., 2017; Łozicki, 2017). However, medical supervision over this type of treatment is important. Its length and frequency should be determined by medical indications and the general efficiency of the patient (Mika, 2015). Climate therapy is also an excellent treatment for the youngest children who are still too young to undergo physiotherapeutic procedures. According to the opinion of the National Consultant in Balneology and Physical Medicine, "health-resort treatment of children under three years of age is not advisable because their immature nervous and immune systems are not able to properly receive and respond to the stimuli provided during therapy. With such a small child, you can go to a health resort to take advantage of the benefits of the climate and outdoor movement" (Wideński, 2013).

### Discussion

Facing the issues of health-resort treatment of children and adolescents in Poland, in 2017 the Final Report of the Team for the development of the concept of changes in the field of health-resort treatment system (further referred to as the Team) was created. The Team, appointed by the Minister of Health, under the leadership of the National Consultant in the field of Balneology and Physical Medicine, Dr Robert Szafkowski, developed proposals for system solutions.

The first of the recommendations is to focus children's health-resorts on health needs, including verification of therapeutic directions and determination of current indications and contraindications for treatment in health-resort hospital for children, a health-resort sanatorium for children and in a health-resort clinic. It is also recommended to change the mode of referring children for treatment directly to health-resort treatment objects. This will allow the patient to stay in the proper object treatment when it is most needed, e.g. in the phase of exacerbation of ailments or immediately after hospitalization.

The possibility of choosing a health resort and direct contact a healthcare provider would also reduce the problem of "no-show". It is also recommended to abolish the strict date of children's medical stays. The current strict determination of the day of arrival and departure for a specific group of patients means that random cases are not consider into account, e.g. a child's cold, which may cause the need to postpone the date of arrival for several days. In case of "no-show", the healthcare provider is not able to enroll another patient, which is a loss for all sides. The strictly imposed deadline is also the reason for patients' resignation from going to the health-resort. It is therefore important to enable cooperation between healthcare providers and recipients on the date of stay. It is also recommended to make the duration in health-resort objects such as a hospital or sanatorium more flexible. If there are no medical indications, children should not be separated from the family, e.g. for 27 days in the case of a hospital stay, 21 in a sanatorium. On the other hand, in case of children up to 6 years of age, the cost of staying – so far fully paid – of a guardian should be reduced.

Another problem raised by the Team is co-financing the costs of a caregiver's stay as part of the treatment of children from 3 to 6 years of age under the care of an adult A donation for the stay of a caregiver of a small child (or an elderly one, but with a significant degree of disability with, e.g. cerebral palsy) would significantly increase the chance of health-resort treatment of patients from less prosperity families. What is more, the Team recommends co-financing the costs of travel to health-resort, granting the parent (guardian) additional paid leave needed drive to and from the health-resort. It is important to introduce provisions guaranteeing the possibility of annual valorization of the rate for a person-day of health-resort treatment of a child. It is also recommended to implement regulations obligating teachers from home schools to consider the grades obtained during health-resort treatment so that after returning the child does not have to make up the material from e.g. the whole month. The number of hours of educational care in the free from school period should be increased. The benefits of treatment in health-resorts should be widely introduced to bring parents and doctors closer to the possibility of health-resort treatment for children (Szafkowski, 2018).

### Conclusions

According to the Central Statistical Office there is a significant increase in the number of visiting patients. Taking into account the stationary stays (health-resort sanatoriums and health-resort hospitals) of all patients in 2010, 527,882 people benefited from stationary health-resort treatment, while in 2018 – 759,843.

Therefore, there is a greater interest in health-resort treatment. However, the opposite situation take place when we separate patients under 18 years of age from this group. In 2010, 25,510 patients came to polish health-resorts for treatment, in 2018 – 23,150. Observing the data of the Central Statistical Office, we can notice a weakening of the tendency for children and adolescents to come for health-resort treatment.

In children's health-resorts it is very important to maintain a good cheerful mood and conditions similar to home so that the child tolerates the treatment well. "The change of environment is not indifferent to the child, but previous observations show that a mentally normal child assimilates into a well-organized children's institution quickly and without much difficulty".

A great role in this case is played by physiotherapists characterized by high composure in working with children, creating an atmosphere of calm and determination. However, this is not enough to make the child's stay in the health-resort more accessible.

Therefore, it is important to adapt the health-resorts and the National Health Fund to the recommendations of the Team for the development of the concept of changes in the health-resort treatment system to be able to meet the individual needs of the young patient and his family. Raising the standards of treatment by valorizing the fee for a person-day, supplementing the stay of the caregiver, the abolition of the turns of stay will increase interest in health-resort treatment.

Repeating such treatment in childhood will allow to achieve a lasting improvement in the patient's health and to reduce the cost of his further treatment.

### Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in the study. All subjects of the institutional survey gave consent for anonymized data to be used for publication purposes.

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