

**MEDICINAL PLANTS USED IN PEDIATRIC PROPHYLACTIC METHOD OF
SEBASTIAN KNEIPP**

IZABELA SPIELVOGEL¹, KRZYSZTOF SPAŁEK²

¹Departament of Physiotherapy, Institute of Physiotherapy,
Opole University of Technology, Prószkowska 76, 45-758 Opole, Poland
e-mail: i.spielvogel@po.opole.pl

²Laboratory of Geobotany and Plant Conservation, Department of Biosystematics,
University of Opole, Oleska 22, PL-45-052 Opole, Poland
e-mail: kspalek@uni.opole.pl

ABSTRACT: A belief in the purposefulness of preventive treatment among children is not a recent invention. Its present shape is the result of a long-term process and the work of its many proponents. One of the pioneers of early preventive care was Sebastian Kneipp, the creator of preventive and curative methods currently used in medical spa and based on five pillars. Kneipp did not confine his method to adults – in 1893 he founded a spa for children in Bad Wörishofen, but after his death the concept of primary prevention was largely forgotten. The method was introduced into the academic curriculum in many medical universities in Europe e.g. in Berlin, Jena and Munich, with the most significant rehabilitation centers currently using the Kneipp method in medical practice located in Bavaria. In Poland, this method is used at the Sebastianum Rehabilitation Center near Opole and at the Institute of Physiotherapy at the Opole University of Technology. A preventive program based on the five pillars of the Kneipp method has also been introduced into the health promotion curriculum of some Polish kindergartens, e.g. Pre-School and School Unit no 7 and the “Skrzat” Social Integration Kindergarten in Zabrze and the Public Kindergarten in Polska Nowa Wieś. The most commonly used herbal supplements in phytobalneotherapy for children include mountain arnica *Arnica montana arnica*, bark of the oak *Cortex Quercus*, young shoots of *Turiones Pini*, hay and seeds of *Semina graminis* grasses, camomile *Chamomilla recutita*,

rosemary *Rosmarinus officinalis*, sage *Salvia officinalis*, horsetail *Equisetum arvense*, common thyme *Thymus vulgaris*, and lemon balm *Melissa officinalis*.

KEY WORDS: medicinal plants, pediatric prophylactic, phytotherapy, Sebastian Kneipp

Introduction

A belief in the purposefulness of preventive treatment among children is not a recent invention. Its present shape is the result of a long-term process and the work of its many proponents. One of the pioneers of early preventive care was Sebastian Kneipp, the creator of preventive and curative methods currently used in medical spa and based on five pillars: hydrotherapy, physiotherapy, herbal medicine, dietetics and health education. Kneipp did not confine his method to adults – in 1893 he founded a spa for children in Bad Wörishofen, but after his death the concept of primary prevention was largely forgotten (Trzewikowska 2010). In the late 20th century, in-depth archival studies extended with contemporary experience and research showed that the Kneipp method is ideally suited for use in pediatric prophylaxis as a supporting factor for the healthy development of children. The method was introduced into the academic curriculum in many medical universities in Europe e.g. in Berlin, Jena and Munich, with the most significant rehabilitation centers currently using the Kneipp method in medical practice located in Bavaria (Spalek and Trzewikowska 2010). Research on the impact of the Kneipp's method in pediatric, started in the 50. XX century in Germany. Authors who have addressed this issue in their academic work are: Stellmann (1989), Heggenmüller (1986, 1987, 1990, 1991, 1993, 1994, 1997), Novotny (1994), Beitlich (1996), Beitlich et al. (1997), Rapp (1996), Dorsch and Sitzmann (1998), Kochański and Trzewikowska (2006). Currently this issue is predominantly in German-speaking centers: Europäisches Gesundheitszentrum für Naturheilverfahren Sebastian Kneipp Institut GmbH, Kneipp Bund (Bad Wörishofen), Ludwig Maximilian Universität München, Österreichischer Kneippärztebund, Schweizer Kneipp Verband. The authors, through scientific scholarship in Europäisches Gesundheitszentrum für Naturheilverfahren Sebastian Kneipp Institut GmbH have participated in research on the impact of Kneipp's methods on the body of a small child.

In Poland, this method is used at the Sebastianum Rehabilitation Center near Opole and at the Institute of Physiotherapy at the Opole University of Technology. A preventive program based on the five pillars of the Kneipp method has also been introduced into the health promotion curriculum of some Polish kindergartens, e.g. Pre-School and School Unit

no 7 and the “Skrzat” Social Integration Kindergarten in Zabrze and the Public Kindergarten in Polska Nowa Wieś.

Medicinal plants applicable in Kneipp therapy for young children

Kneipp phytotherapy is used in modern spa therapy and has also become part of prevention methodology in modern European spas (Spałek et al. 2010). Some treatments can also be performed at home. Specifically for children the therapy may use medicinal plants as wraps, as additives in phytobalneotherapeutic treatments, for example in washing, wrappings, poultices, as additives to water baths, steam baths, inhalation, as well as herbal teas and dietary supplements (Spałek and Trzewikowska 2007).

The most commonly used herbal supplements in phytobalneotherapy for children include mountain arnica *Arnica montana arnica*, bark of the oak *Cortex Quercus*, young shoots of *Turiones Pini*, hay and seeds of *Semina graminis* grasses, camomile *Chamomilla recutita*, rosemary *Rosmarinus officinalis*, sage *Salvia officinalis*, horsetail *Equisetum arvense*, common thyme *Thymus vulgaris*, and lemon balm *Melissa officinalis* (Table 1, 2).

Physiotherapeutic stimulation applicable in Kneipp therapy for young children

Physiotherapeutic stimulation with water is particularly advantageous for pediatric treatment, since water can transmit in a balanced way thermal and mechanical stimulation to the child's skin. In addition, it exhibits high flexibility related to adjusting the intensity of thermal stimulus and its duration. In practice, several variants of treatment exist with varying degrees of stimulation, which in their various modifications reflect the Haggemüller (1986) division into weak, medium and strong stimuli. Generally, the effect of the stimulus increases with the difference in skin temperature and the covered body surface area. Accordingly, in the pediatric prevention the Kneipp method stimulation is divided into three groups: mild stimulation (1st degree), medium stimulation (2nd degree) and strong stimulation (3rd degree).

Methodology of selected hydrotherapeutic treatments

Mild stimulation treatments (1st degree)

- **Partial washing** is the mildest hydrotherapy to be used as an initial treatment, especially in young children. Washing is performed with a sponge or terry cloth or a soft glove liberally wetted in water at room temperature, 18-20°C. Washing is performed in a sitting position, which should be initiated at the distal parts of limbs, from the outside and then the inside of

the feet, legs and thighs, and arms, elbows and shoulders. The torso is washed with longitudinal or circular movements. Washing itself consists of a relatively fast wiping motion, using only light pressure so that the water does not flow over the body. Partial washing in one treatment covers only the upper or lower limbs, or only the torso. Partial treatment may involve of washing the same parts of the body 2-3 times (with short intervals), taking a total of 5 minutes.

- **Warm bathing of arms or legs** is performed using water at 37°C for 5-10 minutes on average. Bathing of arms is performed by dipping them halfway, and legs up to the tibial tuberosity.
- **Bathing of arms or legs with rising temperature** Bath starts at 20°C and every 1-2 treatments the temperature is raised by 1 degree until 37°C. Duration of the first bath at 20°C is ½-1 minute, and is gradually extended in the following baths up to five minutes.
- **Bathing of arms or legs with variable temperature** is carried out in two separate vessels, one fed with water at 37°C and the other with water at 18-20°C or lower. Upper limbs are immersed up to half of the arms and legs to ½-¾ of the lower leg. The procedure starts from immersion in warm water, which lasts 2-3 minutes, then in cold water for about 15 seconds. This procedure is repeated 2-3 times, but not more.
- **Warm sitting bath** is done in a special trough in which the child is sitting as in a chair, where the water reaches the level of the navel and covers the upper part of the thighs, while the lower legs and feet are outside the bath. During the bath, the back, shoulders and lower legs are covered by a leg terry towel. For this procedure, water temperature is 37°C and the bath itself takes 5-10 minutes.
- **Cool wrapping of arms or legs** is carried out using water at 20°C for a duration of 5-10 minutes, which covers both upper or lower limbs. Wrapping is performed using pieces of material with dimensions corresponding to the child's extremities. Two pieces of material are used for each limb, one of which is immersed in water and is superimposed on the limb while the other serves as an additional wrapping. Then the wrapped limbed is covered with a small blanket. Due to the fact that the wrapping is short-termed, it is not necessary to lie in bed after the completion of treatment.

Medium stimulation treatments (2nd degree stimulation)

- **Whole-body washing** starts with a single washing of the entire body, lasting 2-3 minutes, and then in the following treatments repeated 2-3 times for 5-8 minutes each (not longer than 10 minutes) with short intervals. Washing starts with the lower limbs, then moves to the torso and is completed with the upper limbs.
- **Variable temperature bath of upper or lower limbs** is performed with hot water at 35-39°C and cold water at 12-16°C. Limbs in a bath with warm water should be kept for up to 5 minutes, and in cold water for 5-15 seconds. Treatments should always start from immersion in hot water at 35-36°C, with the temperature increasing in the following immersions, and the cold water temperature starts from 16°C and is lowered in successive treatments with simultaneous shortening of the time of immersion in cold water to 3-5 seconds .
- **Warm ¾ bath** at 37°C lasts about 10 minutes and it is recommended to be followed by a short shower with maximum/minimum tolerable temperature.
- **Hot wrappings of lower limbs** are used with water at 39-44°C and last for 20-25 minutes. First treatments are performed at a lower temperature and shorter duration, which are gradually increased during the subsequent treatments, according with the child's ability. A child is placed on a sheet (on a blanket on a couch), and then two previously prepared pieces of cotton cloth with dimensions corresponding to the child's legs are immersed in water, well squeezed, and wrapped around each leg, then the child is covered with a sheet and a blanket.

Strong stimulation treatments (3rd degree)

- **Warm whole-body bath followed by cold shower** – after the completion of a 10-minute long bath at 37°C, the whole body, except the head, is sprayed with a shower at 18-20°C for up to 5 seconds.
- **Sitting bath with variable temperature** A 10-minute sitting bath at 37°C, followed by a sitting bath in cold water for 3-5 seconds. The temperature of the cold water in the subsequent treatments should be lowered by ½-1°C, from 16°C to 12°C, or to the minimum temperature tolerated by the child.

- **Finnish sauna with a programme for small children** is a one cycle sauna which includes a single entry into the sauna chamber at a maximum temperature of approximately 80°C for 8-10 minutes. This is followed by cooling in a room with low air temperature for 10 minutes, without the use of cooling water. This treatment is used to prevent infections, the common cold, as well as due to its stabilizing effect on the autonomic nervous system, decreasing hyperactivity, training blood vessels and the entire circulatory system.
- **Hay poultice** is performed with linen bags $\frac{3}{4}$ filled with inflorescence cut in May, a period when the majority of plants bloom. The bag with hay is heated with steam for about 20 minutes to about 40°C. Preliminary examination of temperature tolerance should be performed by applying the bag to areas most sensitive to heat, such as the cheek or the dorsal side of a child's hand. Two pieces of cotton or flannel material and foil backing are placed on a blanket on a couch, with sizes corresponding to the dimensions of a child's lumbar region. The child is placed in a lying position on either side. The bag with hay with adequate temperature is placed on the lumbar regions, and is quickly and carefully wrapped with foil and pieces of material, and finally the blanket. The child's upper limbs remain on the surface of the blanket, and the child then lies on the back. Duration of the treatment is 15 minutes. The treatment has a relaxing, calming, relaxing and analgesic effect.

Received:

Accepted:

Bibliography

- Beitlich I. 1996. Gesunde Kindergärten und Schulen. Kneipp-Verlag GmbH, Bad Wörishofen, 78 pp.
- Beitlich I., Rapp J., Stuber H. 1997. Kneippgesundheit im Kindergarten. Kneipp-Verlag GmbH, Bad Wörishofen, 132 pp.
- Dorsch W., Sitzmann F.C. 1998. Naturheilverfahren in der Kinderheilkunde. Hipokrates-Verlag, Stuttgart, 47 pp.

- Haggenmüller F. 1986. Das Kneipp'sche Gesundheitssystem in der Kinderheilkunde. Kneipp Blätter 4: 408-417.
- Haggenmüller F. 1986. Kreislaufprobleme im Kindesalter. Kneipp Blätter 5: 164-167.
- Haggenmüller F. 1987. Kneipp'sche Anwendungen in der Kinderheilkunde. Die Heilkunst 12: 1-4.
- Haggenmüller F. 1990. Die Kneippbehandlung von Kindern. Sebastian Kneipp Verlag GmbH, Bad Wörishofen, 47 pp.
- Haggenmüller F. 1991. So hilft Kneipp bei Erkrankungen der Atemwege. Orac Verlag, Wien, 76 pp.
- Haggenmüller F. 1993. 100 Jahre Kneipptherapie bei Kindern. Therapeutikon 4: 138-144.
- Haggenmüller F. 1994. Kneipp Behandlung von Kindern im Wandel der Zeit. Ärztezeitschrift für Naturheilverfahren 11: 776-784.
- Haggenmüller F. 1997. Abhärtung mit Kneipp'scher Therapie. Privataerztliche Praxis 2: 240-242.
- Kochański J.W., Trzewikowska I. 2006. Model profilaktyki wg Sebastiana Kneippa stosowany w przedszkolach niemieckich. Balneologia Polska 68(4): 245-252.
- Novotny U. 1994. Der Kneipp für Kinder. TRIAS-Verlag, Stuttgart, 125
- Rapp J. 1996. Kinder von heute - gesundheitsbewusste Erwachsene von morgen. Kneipp Verlag GmbH, Bad Wörishofen, 95 pp.
- Spalek K., Trzewikowska I. 2007. Kuracja ziołowa w ramach metody Sebastiana Kneippa stosowana w uzdrowiskach w Niemczech. Postępy Fitoterapii 4: 213-216.
- Spalek K., Trzewikowska I. 2010. Fitoterapia w metodzie księdza Kneippa. Panacea 32(3): 30-31.
- Spalek K., Trzewikowska I., Słonka K. 2010. Hay therapy (*fenum*) in phytobalneotherapy with allowance of diversity of grassland community in Poland. Nature Journal 43: 5-12.

Stellmann H.M. 1989. Kinderkrankheiten natürlich behandeln. Grafe und Unzer Verlag, München, 123 pp.

Trzewikowska I. 2010. Przedszkole kneippowskie. Remedium 203(1): 8-9.

Table. 1. The most common plant additives used in Kneipp hydrotherapy for children.

Herbal additive	Type of treatment	Indication and effects
<i>Arnica montana</i>	whole-body bath, partial bath, wrappings, rubbing, poultice	analgesic, anti-inflammatory, antiseptic, soothes pain in fatigued limbs, lowers blood pressure, increases the absorption of exudate and hematomas, alcohol based extracts used externally for bruises.
<i>Cortex Quercus</i>	whole-body bath, partial bath, limb bath, poultice, washing	Sores and festering wounds of the extremities and the anus, vulva inflammation, rashes, fungal infection of the skin, rinsing of the mouth and throat, frostbite.
<i>Turiones Pini</i>	whole-body bath, ½ bath, ¾ bath, inhalation, steam bath	Infections of the upper respiratory tract, regeneration of the tract, colds, trivial infections in children.
<i>Semina graminis</i>	poultice, whole-body bath, ½ bath, ¾ bath, inhalation, steam bath, wrappings, poultice (bag with hay)	Bronchitis, back pain, upper respiratory tract infections, neuralgia, neurosis, for relaxation.
<i>Chamomilla recutita</i>	whole-body bath, ½ bath, ¾ bath, sitting bath, inhalation, steam bath, wrappings, poultice, washing	Skin problems and skin diseases, body cavity lavage (intestinal mucosa), burns, pressure ulcers, haemorrhoids
<i>Rosmarinus officinalis</i>	whole-body bath, ½ bath, ¾ bath	Gentle stimulation of the cardiovascular system, cold hands and feet.
<i>Salvia officinalis</i>	whole-body bath, ½ bath, ¾ bath	Diseases of the throat, sore throat, lavage of body cavities and mucosa, excessive sweating
<i>Equisetum arvense</i>	whole-body bath, ½ bath, ¾ bath, poultice, wrappings	Ulcers and chronic wounds, eczema, bruises, burns
<i>Thymus vulgaris</i>	poultice, wrappings, inhalation, steam bath, washing.	Infections and diseases of the airways, chronic bronchitis.

Table. 2. Selected treatments and indications for using plant additives in pediatric prevention.

Type of treatment	Type of additive and indication
Warm baths: whole-body baths, ¾ and ½ baths	<i>Melissa officinalis</i> – soothing and relaxing effect
	<i>Semina graminis</i> – colds, trivial upper respiratory tract infections
	<i>Chamomilla recutita</i> - skin problems and skin diseases
	<i>Rosmarinus officinalis</i> – stimulation of the circulatory system
Inhalation and steam bath	<i>Thymus vulgaris</i> - diseases of the respiratory system, persistent coughs and residual mucus
Sitting bath	<i>Turiones Pini</i> - diseases of the upper respiratory tract, the need for regeneration of the respiratory system
	<i>Cortex Quercus</i> sitting bath with variable temperature - hemorrhoids, itching anus
Cold wrappings of lower limbs	solution with poultices of flax, powdered milk, juice, sauerkraut, quark, vinegar, additional salt in the case of bacterial infections, skin diseases, bites, circulatory disorders of the lower limbs.
Warm wrappings of torso and limbs, washing	colds with stabilized fever - a solution of <i>Semina graminis</i> , <i>Thymus vulgaris</i> and 40% alcohol.