

# Person-Centeredness in Integrative Health Care and Integrative Medical Education

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## Integrative Neonatology: A Perfect Example for Integrative Medicine

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Neonatology is a subdiscipline of pediatrics on the treatment of premature infants and ill neonates. Beyond that, it is also a discipline that involves the unique balancing of softly supporting the infant as much as possible relying on its individual resources, while at the same time acting very quickly and sometimes even aggressively if required. At first sight, neonatology might seem unsuitable for integrative methods. Looking closer, it becomes obvious that it is very applicable. In fact, in this patient group, needs, opportunities, and maybe also limits of integrative care and a person-centered approach can be shown very well.

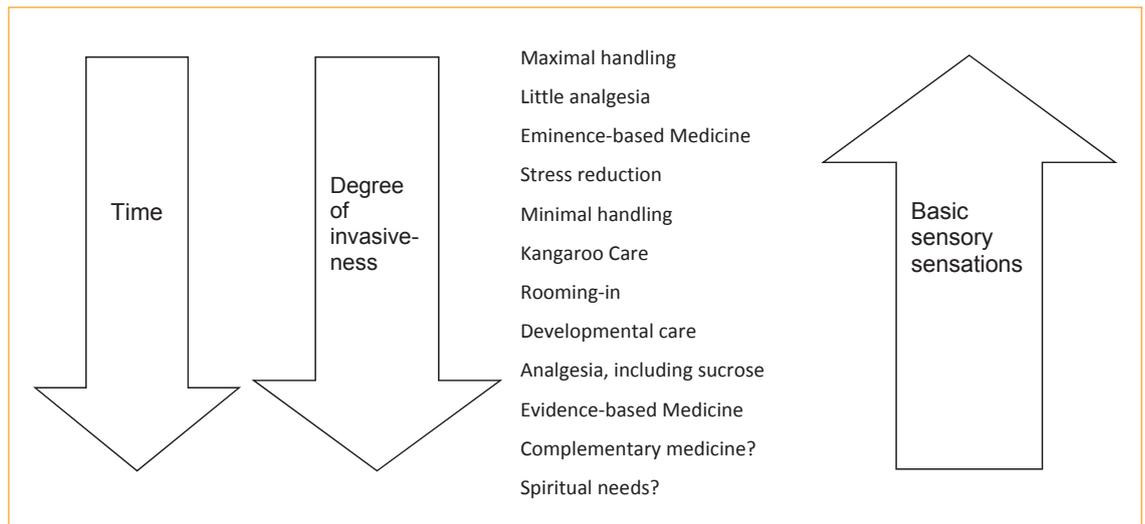
It is well known and commonly accepted that children are not just little adults. We should keep in mind, however, that newborns are often not even just little children.

Any neonatologist acting conscientiously has an integrative and holistic view in a wider sense anyway. This is based on the awareness that the first days or weeks of life are critical for the further development of the infants – and thus for their whole lives. All this is part of the training for pediatricians and especially for neonatologists.

Hence, an interdisciplinary cooperation of doctors, nursing staff, physiotherapists, and hospital chaplains is part of pediatricians' and neonatologists' daily business. But even if it is only a small and almost natural step for the neonatologist to involve therapists and staff from various disciplines, this kind of multidisciplinary teamwork is in fact of great significance for premature infants and their parents. These activities are completed by the support offered to parents, not only by listening and responding to their emotions and fears, but also by providing psychological, psychotherapeutic, or pastoral aid when required.

Particularly, the different standard values, such as the pH value or the blood oxygen level, have increasingly triggered the use of

**Fig. 1.** Development of methods and attitudes in neonatology: decreasing invasiveness and increasing significance of basic sensory sensations.



**Table 1.** Historical changes of mechanical ventilation in neonatology

Preferred medical pathway	Time
Endotracheal intubation and mechanical ventilation (MV)	late 1970s
Endotracheal intubation and MV as well as endotracheal application of surfactant	late 1980s
Endotracheal intubation and MV, endotracheal application of surfactant, as well as MV as short as possible and non-invasive ventilation as primary goal	late 1990s
Application of surfactant without endotracheal intubation, no mechanical ventilation, and non-invasive ventilation as primary goal	2000s

less invasive methods in Neonatology. This has proven to be more beneficial for the child’s development than using the standard values for adults as a yardstick and helps to avoid unnecessary strain.

Infants are particularly sensitive not only due to their immaturity. They are additionally burdened by the side effects of all the reasonable and necessary methods we have to apply from a medical point of view. But these effects can be reduced by a patient-centered view.

*Historical changes of neonatology:* Neonates have to be looked upon individually. At the same time, there has been a general change of paradigm in neonatology (table 1).

A good example of a neonatology that has become increasingly ‘gentle’ over time is the paradigm shift in the predominant techniques of ventilation of premature infants and neonates. During the 1980s, virtually every premature infant was intubated and mechanically ventilated, often causing a significant pulmonary impairment and consecutive impairment of other organs, specifically permanent cerebral damage.

Since the introduction and establishment of surfactant during the 1990s, mortality and morbidity rates have constantly improved. During the last years, the indication of mechanical ventilation has become increasingly strict and its duration and intensity have been reduced. Moreover, the fact that endotracheal intubation is no longer a mandatory prerequisite for surfactant instillation has led to a further reduction of invasiveness [1–3]. And finally, the usage of steroids has been restricted significantly [4].

Looking at neonatology and its relation to methods of complementary medicine, it is remarkable that in both fields the focus of

**Table 2.** Complementary medicine in neonatology: data on primary sensory sensations and the acceptance of its usage

Primary sensory sensation	Accepted therapeutical usage
Smell	Aroma therapy [5, 6]
Hearing	Music therapy [7–9]
Touch	Kanguru Care [10]
Taste	Glucose as analgesia [11]
Vision	No data (so far?)

research keeps shifting towards elementary phenomena of sensory perception, their processing, and their physiological consequences (table 2).

In general, neonatology has become less invasive and more centered on the individual situation of the child in both conventional and complementary points of view. Complementary methods are of increasing interest, and recently, also spiritual aspects have come into the picture [11–13] (fig. 1).

*Perspective:* A new approach of gaining acceptance of methods and evaluating them is to be mindful towards parents and their needs; during the period in which their infant is under intensive care, they are part of the therapy. Neonatology is a very special example for adding complementary methods to existing concepts in order to improve medical efforts for the patient. This is possible without too many controversial discussions. The reason may be the pre-existing neonatologists’ point of view that has always allowed creative solutions to medical problems (table 1).

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## References

- 1 Sweet DG, Carnielli V, Greisen G, et al: European Consensus Guidelines on the Management of Respiratory Distress Syndrome – 2016 Update. *Neonatology* 2016;111:107–125.
- 2 Isayama T, Iwami H, McDonald S, Beyene J: Association of Noninvasive Ventilation Strategies With Mortality and Bronchopulmonary Dysplasia Among Preterm Infants: A Systematic Review and Meta-analysis. *JAMA* 2016;316:611–624.
- 3 Blennow M, Bohlin K: Surfactant and noninvasive ventilation. *Neonatology* 2015;107:330–336.
- 4 Linsell L, Malouf R, Morris J, et al: Prognostic factors for cerebral palsy and motor impairment in children born very preterm or very low birthweight: a systematic review. *Dev Med Child Neurol* 2016;58:554–569.
- 5 Thiel M: Clinical Options for Aroma Therapy in Neonatology; in Buettner A (ed): *Handbook of Odor*. Springer, Heidelberg, 2017 (in press).
- 6 Thiel MT, Längler A, Ostermann T: Systematic review on phytotherapy in neonatology. *Forsch Komplementmed* 2011;18:335–344.
- 7 Bieleninik Ł, Ghetti C, Gold C: Music Therapy for Preterm Infants and Their Parents: A Meta-analysis. *Pediatrics* 2016;138:e20160971.
- 8 Standley J: Music therapy research in the NICU: an updated meta-analysis. *Neonatal Netw* 2012;31:311–316.
- 9 Thiel M, Findeisen B, Längler A: Music therapy as part of integrative neonatology: 20 years of experience – 3 case reports and a review. *Forsch Komplementmed* 2011;18:31–35.
- 10 Thiel M, Längler A, Rose M, Ostermann T: Perception of kangaroo care in German neonatology – a nationwide survey. *Eur J Integrat Med* 2015;8:128–136.
- 11 Stevens B, Yamada J, Ohlsson A, et al: Sucrose for analgesia in newborn infants undergoing painful procedures. *Cochrane Database Syst Rev* 2016;7:CD001069.
- 12 Büssing A, Wassermann U, Thiel M, Längler A: Psychosocial and spiritual needs of mothers of sick new born or preterms. *European Conference on Religion, Spirituality and Health*. University of Gdansk, Poland, May 12–14, 2016.
- 13 Thiel M: Topics of spirituality in neonatology – Results from a systematic literature review. *Spiritual Care* 2016;5:303–310.

## What Parents Are Seeking for: Integrative Pediatrics

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While evidence-based and guideline-oriented diagnostics as well as therapies have been well established in broader areas of medicine for adults for several decades, many areas of child and adolescent medicine became evidence-based with a certain time lag. Consensus guidelines developed by national and international specialists are used for typical diagnoses. However, for many and especially for critical therapies, scientific data on applied therapies are still insufficient (e.g., cardiology, neonatology, and oncology).

Despite all justified criticism [1], the implementation of existing evidence-based treatments and diagnosis strategies can only be meaningfully realized in a constructively critical dialogue with parents and, if the children are older, with the patients themselves. In this dialogue, clinical practice shows that parents' as well as pediatric patients' individual ideas, needs, and wishes often widely differ from provided guidelines. Emotional aspects as well as the desire for 'gentle' or 'natural' treatment alternatives or complementation often play an important role in the development of a trustworthy relationship between the physician/therapist and the patient/parents.

Thus, the goal of our scientific workgroup is to provide a constructive solution-oriented contribution in this decision-making dilemma between physicians, parents, and patients. According to our definition of integrative medicine [2] and to our focus on an integrative and person-centered health care policy, we stand for establishing a good physician-patient relationship, for considering the whole person, for referring to available scientific evidence, and ultimately for including all reasonable and available therapeutic as well as lifestyle factors to ensure optimal health and healing. In particular, our research activities aim to investigate and appreciatively assess the patient's needs for validated available scientific evidence or – if not available – to provide evidence of the most used and promising therapeutic options.

In recent years, our focus has been on the evaluation of parental needs regarding the use of complementary and alternative medicine [3]. In addition to sociodemographic aspects, the expected and experienced effects of complementary therapies as well as the quality of consultations and treatments were investigated. For this purpose, a self-developed and -evaluated questionnaire was conducted among patients and parents in cooperation with other research groups (including the German Childhood Cancer Registry, the Working Group on Integrative Pediatrics at the Charité in Berlin) [4]. The results of this survey considering parental needs and experienced counseling and treatment quality formed the basis for the evaluation of professionals' attitudes and opinions (in particular pediatric oncologists) [5–7]. In a further step, results of both surveys were related to each other and existing deficits (e.g., in the training of pediatric oncologists) were described.

At the same time, we elaborated on the question of possible toxicity and side effects of complementary and alternative therapies, which is of particular relevance in children [8, 9]. To provide an overview of the relevance and availability of complementary medicine for children in Europe, we established an expert network through which both the care situation and the availability of data on the application practice in Europe were described and published [10, 11].

Current research projects investigate anthroposophic treatment concepts for the 10 most frequent inpatient treatment diagnoses in the 2 integrative-medical children's departments in Germany. First, a systematic literature search is conducted to review complementary-medicine approaches for these frequent diseases in childhood. The next step is the performance of a Delphi survey, a multiphase questionnaire process done by experts, in order to collect

and analyze data of indicated therapy approaches in defined diseases as well as corresponding experiences of physicians with expertise in anthroposophic child and adolescent medicine. Based on the results of the first 2 project steps, a standardized treatment concept for each disease will be developed and investigated by prospective documentations with regard to various clinical and economic outcome parameters.

In addition, a training concept for experts dealing with complementary medicine and counseling of complementary medicine in pediatric oncology, implemented by a blended learning project, is currently being developed by the German Cancer Aid within the framework of the KOKON network [12].

The existing network structures among national and international groups working on the establishment of evidence-based complementary medicine in children will be further elaborated.

Since, as mentioned above, the quality of the physician-patient relationship plays a key role in person-centered integrative health care, we refine existing training concepts within the scope of student training in clinical clerkship as well as in the internship program of the final year [13].

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## Disclosure Statement

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## References

- 1 Greenhalgh T, Howick J, Maskrey N, Evidence Based Medicine Renaissance Group: Evidence based medicine: a movement in crisis? *BMJ* 2014;348:g3725.
- 2 [www.aihm.org/about/what-is-integrative-medicine](http://www.aihm.org/about/what-is-integrative-medicine) (last accessed January 2, 2017).
- 3 Laengler A, Spix C, Seifert G, et al: Complementary and alternative treatment methods in children with cancer: a population-based retrospective survey on the prevalence of use in Germany. *Eur J Cancer* 2008;44:2233–2240.
- 4 Gottschling S, Gronwald B, Schmitt S, et al: Use of complementary and alternative medicine in healthy children and children with chronic medical conditions in Germany. *Complement Ther Med* 2013;21(Suppl 1):S61–69.
- 5 Längler A, Boeker R, Kameda G, et al: Attitudes and beliefs of paediatric oncologists regarding complementary and alternative therapies. *Complement Ther Med* 2013;21(Suppl 1):S10–19.
- 6 Schütze T, Längler A, Zuzak TJ, et al: Use of complementary and alternative medicine by pediatric oncology patients during palliative care. *Support Care Cancer* 2016;24:2869–2875.
- 7 Zuzak TJ, Kameda G, Schütze T, et al: Contributing factors and outcomes of treatment refusal in pediatric oncology in Germany. *Pediatr Blood Cancer* 2016;63:1800–1805.

- 8 Zuzak TJ, Rauber-Lüthy C, Simões-Wüst AP: Accidental intakes of remedies from complementary and alternative medicine in children – analysis of data from the Swiss Toxicological Information Centre. *Eur J Pediatr* 2010;169:681–688.
- 9 Zuzak TJ, Zuzak-Siegrist I, Simões-Wüst AP, et al: Use of complementary and alternative medicine by patients presenting to a Paediatric Emergency Department. *Eur J Pediatr* 2009;168:431–437.
- 10 Längler A, Zuzak TJ: Complementary and alternative medicine in paediatrics in daily practice – a European perspective. *Complement Ther Med* 2013;21(Suppl 1):S26–33.
- 11 Zuzak TJ, Boňková J, Careddu D, et al: Use of complementary and alternative medicine by children in Europe: published data and expert perspectives. *Complement Ther Med* 2013;21(Suppl 1):S34–47.
- 12 [www.kokoninfo.de](http://www.kokoninfo.de) (last accessed January 2, 2017).
- 13 Tauschel D, Edelhäuser F, Längler A, Scheffer C: Educating pediatrics in integrative and anthroposophic medicine in undergraduate medical education – a mixed method comparative study on pediatric clerkships. *J Altern Complement Med* 2016;22:A101–102.

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## Self-Realization – Individual Medicine from the Patient’s Perspective

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This research field focuses on the relevance of the appreciation of individuality within health care. Patients, especially when suffering from chronic diseases, need recognition of their mental, developmental, and relationship-based needs as well as their physiological, cognitive and biographical requirements for health promotion [1]. Our group of researchers contributes to the patient-oriented concept of individualized health care by accounting for the following aspects in research and practice: 1) the patient’s biography as an expression of individuality; 2) attachment as an important social condition of personal development; 3) supporting of life-long learning and inner growth to develop the self; 4) freedom as a basic aspect of human individuality; 5) the first-person perspective as a basic method to gain insight into the patient’s perspective.

1) *Biography*: When a patient meets members of the health care system, he/she is a person with a rich underlying biography. Making one’s biography conscious implies an active performance of re-collecting and re-constructing live events and their meaning and represents a creative act of individualization. Biography may be understood as a link between the individual and society as it recounts the life story, showing how a person experiences and reacts to challenges in life. An illness may possibly be perceived as a temporary response to a biographical challenge and a creative ‘solution’ if it is recognized within the biographical context. Whilst data regarding social structures are usually recorded during medical-history taking, appropriate spaces for the often more time-consuming biography and its narration need to be created. Biographical narration is the designing of a tellable life story. This can be

useful for therapy or the individual's self-management and can produce hermeneutically interpretable data enabling a pattern recognition and re-conception. We use biography-based concepts of self-reflection and seizure self-control for patients with epilepsy [2, 3]; furthermore, we are planning to transfer this concept to other chronic diseases.

2) *Attachment as an important factor for the development of individuality*: Middle childhood (age 6 to 12 years) is a highly relevant age for the development of individuality and is regarded as a switching point of human development [4]. The putative significance of this life phase for the development of individuality has so far been underestimated. In anthroposophic medicine and pedagogy, this phase with a focus on the age of 9–10 years has been discerned as an especially important developmental stage for which Rudolf Steiner has used the term 'Rubicon' – also inviting us to reflect our ability to relate with children at this age [5]. The aim of our research project described below is to empirically assess the psycho-physiological changes around the 'Rubicon'. We investigated the extent to which parents perceive their children's developmental challenges [6]. We validated a questionnaire for parents to assess indicators of this phase. Many of the challenges that children face at this age may be best understood as expressions of an important individualization process. The task might be to carefully support these processes, discerning them from pathologies. Parents, teachers, and doctors can thereby enable children to regard themselves as individuals and members of society [7].

3) *Supporting life-long learning and inner development*: Considering life-long learning and inner development in person-oriented health care is therapeutic and might yield preventative effects. Thus, in self-management programs, we include physiological, psychological, social, biographic, and developmental features not only as therapeutic but also as preventive interventions to train inner perception and self-efficacy, especially in case of chronic diseases. Self-management programs are realized and evaluated also in multicenter cooperation projects [8, 9].

4) *Freedom*: The awareness of 'freedom' in a wider sense is a basic aspect of integrative individualized health care, and it has to be kept in mind in the daily routine of doctor-patient interactions. Each therapeutic, diagnostic, or screening intervention embodies the opportunity to foster the concept of freedom by offering different options – including the option to 'wait and see'. Shared decision-making includes a well-developed structured reflection of the subjective preferences of the persons concerned [10, 11]. To be able to use this process, the health care system has to offer evidence-based information about existing treatment options and facilitate informed decision-making. To develop the ability to make informed decisions, patients have to become aware of their own preferences to be part of the decision process. We have provided evidence for individual patient needs and existing therapeutic options, for example in relation to labor induction in post-term pregnancies [12–14].

5) *First-person perspective*: Usually, the first-person perspective is gained by applying qualitative research methodology. We use it often also to understand the effects of our therapeutic interven-

tions on patients' self-efficacy [8, 15, 16]. However, we have added a further dimension of including the first-person perspective in research: patients as actively participating partners in the development of research designs [17]. In this sense, we have developed a research design based on questions and research needs of affected patients, taking into account their first-person perspective [18].

*In summary*, our research based on the 5 mentioned aspects of individualization appears to be a preventatively and therapeutically relevant contribution to the development of an integrative and individualized concept of health care. It concurs with patients' demands and can be further developed with their active participation.

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## References

- 1 Franzel B, Schwiegershausen M, Heusser P, Berger B: Individualised medicine from the perspectives of patients using complementary therapies: a meta-ethnography approach. *BMC Complement Altern Med* 2013;13:124.
- 2 Michaelis R, Schonfeld W, Elsas SM: Trigger self-control and seizure arrest in the Andrews/Reiter behavioral approach to epilepsy: a retrospective analysis of seizure frequency. *Epilepsy Behav* 2012;23:266–271.
- 3 Michaelis R, Niedermann C, Berger B: How can we enhance the sense of self-efficacy in epilepsy? Individual answers from two qualitative case reports. *Complement Med Res* 2017; accepted for publication.
- 4 Del Giudice M: Attachment in Middle Childhood: An Evolutionary-Developmental Perspective. *New Dir Child Adolesc Dev* 2015;2015:15–30.
- 5 Selg P: 'Ich bin anders als Du'. *Vom Selbst- und Welterleben des Kindes in der Mitte der Kindheit*. Arlesheim, Verlag des Ita Wegman Instituts, 2011.
- 6 Föller-Mancini A, Berger B: Der Rubikon als Entwicklungsphänomen in der mittleren Kindheit; in Schieren J (ed): *Handbuch Waldorfpädagogik und Erziehungswissenschaft*. Weinheim, Beltz Juventa, 2016, pp 270–300.
- 7 Berger B, Föller-Mancini A, Heusser P, Martin D: Der Rubikon in der mittleren Kindheit. *Merkurstab* 2014;2:157–158.
- 8 Berger B, Bertram M, Kanitz J, et al: 'Like walking into an empty room': effects of eurythmy therapy on stress perception in comparison with a sports intervention from the subjects' perspective – a qualitative study. *Evid Based Complement Alternat Med* 2015;2015:856107.
- 9 Berger B, Sethe D, Hilgard D, Heusser P: Design of a self-management program for children aged 6–12 with type-1 diabetes mellitus at the Community Hospital Herdecke, Germany. *Complement Med Res* 2017; accepted for publication.
- 10 Muller EV, Schmacke N, Kolip P, Berger B: Desirable, unfamiliar and in need of communication – the evidence-based decision aid of the Institute for Quality and Efficiency in Health Care (IQWiG) (in German). *Z Evid Fortbild Qual Gesundheitswes* 2012;106:290–294.
- 11 Makoul G, Clayman ML: An integrative model of shared decision making in medical encounters. *Patient Educ Couns* 2006;60:301–312.

- 12 Berger B, Schwarz C, Heusser P: Watchful waiting or induction of labour – a matter of informed choice: identification, analysis and critical appraisal of decision aids and patient information regarding care options for women with uncomplicated singleton late and post term pregnancies: a review. *BMC Complement Altern Med* 2015;15:143.
- 13 Schwarz C, Gross MM, Heusser P, Berger B: Women's perceptions of induction of labour outcomes: results of an online-survey in Germany. *Midwifery* 2016;35:3–10.
- 14 Schwarz C, Schafers R, Loytved C, et al: Temporal trends in fetal mortality at and beyond term and induction of labor in Germany 2005–2012: data from German routine perinatal monitoring. *Arch Gynecol Obstet* 2016;293:335–343.
- 15 Lauche R, Cramer H, Haller H, et al: My back has shrunk: the influence of traditional cupping on body image in patients with chronic non-specific neck pain. *Forsch Komplementmed* 2012;19:68–74.
- 16 Cramer H, Lauche R, Haller H, et al: 'I'm more in balance': a qualitative study of yoga for patients with chronic neck pain. *J Altern Complement Med* 2013;19:536–542.
- 17 Musial F: Patients as Active Partners in Research – a Fashionable Phrase or a Fundamental Paradigm Shift? *Forsch Komplementmed* 2015;22:224–225.
- 18 Berger B, Stange R, Michalsen A, Martin DD: Prolonged fasting in T1DM – case study from patient perspective in the European Congress of Integrative Medicine. Accepted poster abstract. European Congress for Integrative Medicine, Berlin, 2017.

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## What Is Individualized Integrative Medicine in Anthroposophic Cancer Care?

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Patient-centered, individualized cancer care is a widely recognized central goal in medicine, particularly in integrative medicine. However, what is a patient-centered, individualized approach? What are the concepts, therapeutic goals, procedures, and working conditions? – These questions were investigated in a qualitative study in the field of integrative cancer care in Anthroposophic Medicine (AM) [1]. In-depth interviews were conducted with 35 highly experienced AM doctors in different specialties (oncology, hematology, internal medicine, primary care, pediatrics, and else), working in hospitals and office-based practices in Germany and other countries. A structured qualitative content analysis was applied to examine the data.

The interviewed doctors rationalized, diagnosed, and treated cancer through two complementary concepts: the conventional concept in terms of tumor biology and cancer as a cellular and genetic disease; and the complementary holistic concept of a hierarchic and interrelated organism and cancer as an organismic disease, meaning that the whole organism is affected by cancer and, vice versa, influences cancer growth and control. The doctors' primary goals were to control tumor growth and symptoms and to strengthen the patients on different levels: living with the disease, overcoming the disease, strengthening vitality, acceptance, autonomy, competences, enabling emotional and cognitive development and finding the own path, and addressing spiritual or transcendent issues according to

the patients' wishes and initiatives. To reach these goals, the doctors assessed their patients at all systemic levels and developed a holistic treatment concept for each of them, addressing his or her relevant conditions and symptoms in the organismic perspective. Such a treatment concept could result in a single remedy or a multimodal treatment, depending on the condition of the specific patient and being adapted over time. The therapeutic repertoire included conventional anticancer and symptom-relieving interventions as well as herbal and mineral remedies, mistletoe therapy, artistic therapies, massages and other external applications, hyperthermia, nutrition and lifestyle advice, psychological support, and multiple forms of empowerment. Also, a good patient-doctor relationship and sufficient time for patient encounters, informing, and decision-making were important. The application of these treatments partly followed standards and mindlines (internalized and collectively reinforced tacit guidelines), and it was partly individualized to the specific patient. Predomination of standards, mindlines, or individualization varied in regard to the following four dimensions:

*Regarding disease, condition, treatment focus:* Specific diseases and symptoms were primarily treated according to the standards, particularly when uncomplicated or when curable; these could be standards of the medical society (e.g., oncologists), the specific medical society (e.g., AM doctors), specific groups (e.g., AM doctors in hospitals), or individual doctors (mindlines). When, however, the disease became incurable or resistant, when complexity increased, and when the patient presented relevant concomitant diseases, the treatment was increasingly individualized. The same was true when the disease was simultaneously interpreted with different pathophysiological concepts (e.g., cancer biology, immunology, and AM) and when the patient's overall situation was addressed with a consistent holistic treatment approach. Particularly in incurable cancer, the treatments were individualized and depended on the specific condition and symptoms, their evolution over time, and the patient's goals. This referred to AM interventions as well as to chemo- and radiotherapy. Furthermore, positive therapeutic goals – strengthening healthy capacities, inner resilience, a positive emotional, cognitive, or spiritual focus – were addressed in an individualized approach.

*Regarding the patients:* The extent of individualization depended on the patient's goals and specific situation. AM doctors emphasized a patient-centered approach. An in-depth and comprehensive knowledge of the patient, his condition, situation, and biography was strived for. For this purpose, doctors made use of an often extensive assessment, including detailed tumor diagnosis, symptoms, functional capacities, general anamnesis, vegetative and constitutional aspects, concomitant diseases, physical examination, psychological situation, biographical situation, goals, and ego-related factors. This was prioritized and formed into a coherent impression of the patient, serving as the basis for the patient-centered approach. The individualization of care referred to developing a holistic treatment concept tailored to the specific patient, to all relevant aspects presumed to be interrelated, to his or her current situation ('where the patient really stands'), to informing and shared decision-making, and to addressing the mental and spiritual levels.

This treatment concept usually included standard anticancer treatments. Beyond adapting and complementing the standards to the individual situation and goals of the patients, some of the patients explicitly sought their 'own way' beyond conventional standards. In these occasions, an extensive counselling, a trusting, face-level relationship, and an engagement on a personal level were pursued in order to prevent patients from making decisions they may later regret, to find their inner goals, and to find an individual solution.

*Regarding the doctors:* The individualization of treatments depended also on the doctors themselves, their attitudes, expertise, and clinical reasoning. Individualization touches the core of the professional self-understanding. Knowing standards and scientific data was considered to be indispensable and was usually the basis for decisions. The doctors had also developed own 'standards', particularly in areas where official standards did not exist, were insufficient or incommensurate, or where the doctors had observed good effectiveness or good practicability. At the beginning of their career, the doctors' focus on official standards was stronger. As the doctors' experience and expertise grew, they developed their own standards, increased their individual decision-making capacity, and adapted more to the individual patient. Acting according to the specific situation was regarded as a supreme discipline, necessitating more expertise than just following diagnose-centered guidelines. Good decision making was described as an interplay of theoretical concepts, empirical data, personal experience, and a 'subjective medical competence'.

*Regarding therapy:* Individualization depended on the applied therapy: The decisions for conventional anticancer treatments and the modes of their application usually followed established guidelines, with individual adaptations in cases of increased risks of side effects, decreased expectations of benefits, or if applied for strictly symptom-relieving purposes. Applying mistletoe extracts was also a 'standard' in the sample of interviewed AM doctors, as well as the general mode of application. Still, some substandards were apparent (preference for certain preparations or dosing schedules, mistletoe extracts applied as intravenous infusions or intratumoral injections). Treatment response, course of disease, and evolving therapeutic goals introduced an increasing individualization. When the organismic response or responsiveness was a therapeutic intent, the mode and dose of the mistletoe application was adapted accordingly in order to achieve the intended response. Further treatments, such as other medicines, creative therapies, eurythmy therapy, external medical applications, massages, teas, psychosocial support, counseling, and empowerment of patients for self-competence, self-responsibility, and self-management, were considered the core of individualized medicine.

The doctors often worked in interdisciplinary teams and cooperated with other cancer care-related specialists. Sources for their knowledge building and medical decision-making were the direct professional working environment, congresses and meetings, discussions with colleagues on their experiences and their best and worst cases, medical books, articles, guidelines, clinical studies, and, most important, own experiences with patients and patient feedback. Besides external sources and mindlines, also intuitive deci-

sion-making was appreciated for clinical reasoning. The doctors attributed importance to self-care and self-development: fostering a connection with nature, going for a walk in nature, being mindful of plants, and embracing the atmosphere of nature. Many worked on their own attitudes toward the patient: having respect and seeing the side of the patient's personality that impressed them, being dedicated to the care of very advanced and severely ill patients, and always looking for possibilities of providing support and relieving suffering. Throughout the interviews, the doctors described experiencing a great sense of satisfaction with their profession.

This qualitative study provides an example of patient-centered integrative cancer care that integrates conventional and multimodal complementary interventions in order to address physical, functional, emotional, and spiritual needs of the patients, and to center and tailor the treatment to the specific patient and situation. This personalized and integrative approach may be important for meeting the varying needs, values, and goals, for managing the multifaceted suffering of cancer patients, and for tumor and symptom control. It addresses important goals of modern cancer care.

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## Reference

- 1 Kienle GS, Mussler M, Fuchs D, Kiene H: Individualized integrative cancer care in Anthroposophic Medicine: a qualitative study of the concepts and procedures of expert doctors. *Integr Cancer Ther* 2016;15:478–494.

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## Individualized Health Care and Homeopathy – an Inseparable Entity?

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Personalized and individualized medicine is becoming increasingly important in current discussions on the future of health care. While the term 'personalized medicine' (PM) is mainly used for the

orientation of medicine toward individual genetic and molecular characteristics of a person [1, 2], others have located and embedded the concept of PM in the framework of integrative medicine taking into account that patient-centered health care not only focuses on biological but also on mental, sociocultural, and spiritual aspects of the patient [3]. This article shortly characterizes the contribution of homeopathy to integrative and individualized health care from a historical, practical, methodological, and educational perspective.

One of the manifest fundamentals of homeopathy is the treatment of the patient in his or her completeness rather than as a conglomeration of separate parts.

In §82 of his *Organon of Medicine* [4], Hahnemann wrote: ‘... is as indispensable for the homeopathic physician as it was before that discovery, as no real cure of this or of other diseases can take place without a strict particular treatment (individualization) of each case of disease.’

In addition to the description of individualized diseases, Hahnemann also described ‘diseases of constant character’. In his conception, these comprise infectious or epidemic diseases. Hahnemann suggested the prescription of a ‘typical remedy’ to cure such diseases: ‘From the circumstance that constant remedies have already been discovered for those diseases, few though they be, which have a constant character, one might infer that for all diseases of a constant character, constant (specific) remedies might be found’ [5].

According to Bleul [6], most of the acute diseases which can be denoted by clinical diagnoses are examples of such diseases.

This idea is also underlying in the concept of ‘proven indications’ in which typical complaints and injuries are treated with typical remedies that have shown to be effective according to clinical experience, irrespective of the individuality of a given patient. This approach became popular in the second half of the 20th century by the Austrian homeopath Mathias Dorcsi [7]. The concept is reflected for example in the homeopathic treatment of pain caused by tooth extraction. In this condition, the nerve irritation can be considered as an exciting factor, independent of the individual constitution [8]. As *Hypericum perforatum* is known as a remedy for stabbing pain, especially when nerve root irritation or nerve damage is involved, it is considered relevant for this condition [9].

Thus, homeopathy covers 2 approaches: an individual approach mainly in chronic conditions and a more general one mainly for acute situations. This dichotomy of homeopathy is also reflected in clinical and preclinical research. Clinical homeopathy is easier to fit in the scheme of common randomized controlled trials since a certain complex of symptoms (‘clinical diagnoses’ according to [6]) is attributed to a certain remedy, which then can be tested against placebo. An example is the investigation of potassium dichromate in tracheal secretions in critically ill patients [10]. Another example for this approach is a study that is currently being performed by members of our research group: the use of potentized *Hypericum perforatum* to improve postoperative pain after monosegmental spinal microdiscectomy [11].

Apart from such straightforward study approaches, we also develop study designs that respect the individualized procedure of classical homeopathy. The big challenge in any randomized trial is

the remedy selection since the ‘right’ remedy is not always found at the first attempt [12]. This problem could be overcome by an open run-in phase to determine the homeopathically adequate remedy before proceeding to a blinded randomized trial [13]. In randomized trials without the possibility to adjust the remedy chosen, false-negative results may occur [14]. Also, in homeopathic remedy proving with human volunteers, adapted clinical research designs have been developed and successfully applied [15].

In preclinical research, individualized test designs are intrinsically difficult. In whole-system bioassays (e.g., with animals or plants), only generalized homeopathy is being used. This also applies to the past and current preclinical projects of our working group [16, 17]. An individualized treatment of all organisms involved would imply an enormous workload to determine the adequate remedy for each individual organism. Furthermore, the treatment would be largely hypothetical due to a missing homeopathic *Materia medica* for animals and plants. At present, preclinical test systems for individualized homeopathy are only feasible for human *ex vivo* / *in vitro* systems [18].

Homeopathy as a medical method that involves individualization as well as generalization is very well-suited to serve as an example for testing different methodological approaches to study individualized medicine. Apart from research aspects, the teaching of homeopathy may also be included in future perspectives. With respect to the approach of problem-based learning, ‘homeopathic practice is intrinsically problem-based in nature’ asking for the basic problem: ‘What remedy can I find for this person?’ [19]. A first expert discussion on this topic revealed that a problem-based approach might be well-suited to transport homeopathic content in the given curriculum of further education [20]. In particular, problem-based approaches may be connected with the use of modern electronic or mobile health (E- and M-health) technology [21].

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## References

- Schleiden S, Klingler C, Bertram T, et al: What is personalized medicine: sharpening a vague term based on a systematic literature review. *BMC Med Ethics* 2013;14:55.
- Rogowski W, Payne K, Schnell-Inderst P, et al: Concepts of ‘personalization’ in personalized medicine: implications for economic evaluation. *Pharmacoeconomics* 2015;33:49–59.
- Neugebauer E, Heusser P: Personalized or person-centered medicine? Their synthesis in an integrative and personalized healthcare supply (in German). *Gesundheitswesen* 2014;76:694–695.

- 4 Hahnemann S, Dudgeon RE: Organon of Medicine, ed 6. New Delhi, B. Jain Publishers, 1980.
- 5 Hahnemann S: Materia Medica Pura, vol 2. New Dehli, B. Jain Publishers, 1996.
- 6 Bleul G: Mononukleose – Aufarbeitung der klinischen Erfahrung mit Homöopathie. ICE 14, Köthen (Anhalt) 2014. [www.wisshom.de](http://www.wisshom.de), 2015.
- 7 Jütte R, Riley D: A review of the use and role of low potencies in homeopathy. *Complement Ther Med* 2005;13:291–296.
- 8 Raak C, Büssing A, Gassmann G, Ostermann T: Homöopathie in der Zahnheilkunde. Eine systematische Übersicht von Arzneimitteln und Indikationen. *Erfahrungsheilkunde* 2010;59:23–33.
- 9 Raak C, Büssing A, Gassmann G, et al: A systematic review and meta-analysis on the use of *Hypericum perforatum* (St. John's Wort) for pain conditions in dental practice. *Homeopathy* 2012;101:204–210.
- 10 Frass M, Dielacher C, Linkesch M, et al: Influence of potassium dichromate on tracheal secretions in critically ill patients. *Chest* 2005;127:936–941.
- 11 Raak C, Scharbrodt W, Berger B, et al: *Hypericum perforatum* to improve post-operative Pain Outcome after monosegmental Spinal microdiscectomy – a study protocol. *Homeopathy* 2016;105:37–38.
- 12 Frei H, Everts R, von Ammon K, et al: Randomised controlled trials of homeopathy in hyperactive children: treatment procedure leads to an unconventional study design. *Homeopathy* 2007;96:35–41.
- 13 Frei H, Everts R, von Ammon K, et al: Homeopathic treatment of children with attention deficit hyperactivity disorder: a randomised, double blind, placebo controlled crossover trial. *Eur J Pediatr* 2005;164:758–767.
- 14 Jacobs J, Williams AL, Girard C, et al: Homeopathy for attention-deficit/hyperactivity disorder: a pilot randomized-controlled trial. *J Altern Complement Med* 2005;11:799–806.
- 15 Möllinger H, Schneider R, Walach H: Homeopathic pathogenetic trials produce specific symptoms different from placebo. *Forsch Komplementmed* 2009;16:105–110.
- 16 Gassmann G, Raak C, Buechel K, et al: Lymphocyte migration under exposure of homeopathic remedies for periodontal inflammation – a controlled pilot study (in German). *Forsch Komplementmed* 2015;22:10–17.
- 17 Baumgartner S, Doesburg P, Scherr C, Andersen JO: Development of a biocrystallisation assay for examining effects of homeopathic preparations using cress seedlings. *Evid Based Complement Alternat Med* 2012;2012:125945.
- 18 Guggisberg AG, Baumgartner S, Tschopp CM, Heusser P: Replication study concerning the effects of homeopathic dilutions of histamine on human basophil degranulation in vitro. *Complement Ther Med* 2005;13:91–100.
- 19 Kreisberg J: The attitude of homeopathic education. *Homeopathy Today* 1999;19(10).
- 20 Raak C, Dieter P: Problem based learning. Fallbeispiel aus Sicht der Biochemie und der Homöopathie. ICE 14, Köthen (Anhalt) 2014. [www.wisshom.de](http://www.wisshom.de), 2015.
- 21 Ostermann T, Malik M, Raak C: Application of information technology for homeopathic repertorisation – a systematic review; in: Proceedings of the International Conference on Health Informatics 2017, in press.

## Learning as the Active Principle in Non-Pharmacological Therapies

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Non-pharmacological therapies comprise a wide range of different therapies which have 1 thing in common: they do not use drugs. They are used to complement standard treatments of a disease and they aim, among other things, to reduce symptoms or to

enhance the effects of primary (conventional) treatments. Here, we focus on non-pharmacological therapies such as Anthroposophic Therapeutic Speech (ATS) [1] and Eurythmy Therapy (EYT) [2] from Anthroposophic Medicine. They both comprise physical activity in conjunction with aspects of inner activity (e.g., imagery). In both therapies, physical activity is relatively low because they mainly make use of slow movements. ATS focusses on speech, yet imagery may appear as a consequence of the content and meter of the text. In EYT, the body movements are combined with an appropriate formation of imagery. Such therapies are often deemed to act mainly on emotional functioning [3]. However, it has been shown that these therapies also act on physiological functioning such as the autonomic nervous system as analyzed by means of e.g. heart rate variability (HRV).

How do these therapies take effect on physiological functioning? In ATS, each speech exercise forms breathing patterns in a specific way through the recitation of a text with a specific meter. The breathing pattern leads to a particular heart rate pattern (heart rate variability) mediated by respiratory sinus arrhythmia, i.e. respiration-induced changes of heart rate. Hence, ATS is clearly affecting cardiovascular physiology, and each speech exercise gives rise to a unique heart rate pattern [4]. In healthy subjects, hexameter recitation led to cardiorespiratory synchronization during the recitation of poetry, i.e. oscillations of respiration and heart rate were synchronized [5]. It has to be emphasized that these simultaneous effects can be observed instantly if the exercise is carried out correctly. For instance, hexameter recitation instantly gave rise to approximately 6 oscillations per minute in the cardiovascular regulation which is known to improve blood pressure regulation [6]. Hence, this exercise may help to reduce blood pressure, e.g. in blood pressure patients. Long-term effects of ATS, i.e. effects taking place after applying the therapy several times on different days, have also been shown. After repeating hexameter recitation once per week for 6 weeks, cardiorespiratory coordination was also increased [7].

EYT also shows clear effects on HRV. HRV increased during the performance of different EYT exercises [8]. During the performance of the EYT exercise, each sequence of movements led to particular changes of the heart rate induced by e.g. posture changes (standing vs. squatting) or movement of the arms (which, in turn, altered breathing patterns). The repetition of the sequence of movements then gave rise to a repetitive heart rate pattern [9]. The studies to date clearly show that each EYT exercise has a unique impact on cardiovascular functioning during its application. This suggests that EYT exercises may be used as a therapeutic add-on for specific purposes in the treatment of corresponding diseases [10].

The physiological studies on EYT and ATS have primarily focused on simultaneous effects occurring during the therapy. Long-term effects of EYT have been shown clinically, e.g. for chronic diseases. In e.g. mental disorders and musculoskeletal illnesses the disease and symptom scores increased considerably [11]. However, the clinical studies were not able to clarify the mode of action of these therapies. To tackle this problem, we use the findings on the

physiological simultaneous effects to develop a rationale for the optimal choice of an EYT (or ATS) exercise as a complementary therapy in the treatment of a specific disease. Our approach is based on the fact that in a clinical context these non-pharmacological therapies are applied serially a number of times (e.g., 2 times per week in a period of 6 to 8 weeks). In the following, we provide a conceptual framework that helps to understand long-term effects of EYT and ATS. The framework can also be extended to non-pharmacological therapies in general.

The multiple application of ATS or EYT (or, more generally, non-pharmacological therapies) and the fact that the patient sleeps in between each application (the applications take place on consecutive days) share similarities with studies on memory formation and consolidation. It has been shown that the consolidation of memory clearly benefits from sleep. For example, finger movement skills become faster and more fluent after sleeping in comparison to subjects without sleep [12]. Cognitive tasks were also improved after sleeping in comparison to subjects without sleep [13]. A closer look at these studies reveals some basic features of memory formation. Before memories can be formed, the respective skill has to be practiced several times during daytime. Next, nighttime sleep consolidates the newly formed memories and skills. The consolidated memories lead to an improvement of the respective skill if it is practiced again the next day [14]. Continuation of this process leads to further improvements.

This process of memory formation and consolidation during nighttime sleep relies on brain structures and the associated peripheral nerves. The concept of memory formation and consolidation as described above can also be applied to the immune system, although the immune system does not rely on brain structures or nerves [15]. Instead, it uses blood as a system to transport immunological information. Consequently, memory and learning is not bound to brain structures but may also be built upon other structures. A basic concept of memory developed by Tulving [16] claims that 3 memory systems can be discriminated: procedural, semantic, and episodic memories. In the present context, especially the procedural memories associated with an 'anoetic (non-knowing) consciousness' are relevant. These memories refer to the ability of subjects to sense and to react to external and internal stimulation. They are relevant in the context of non-pharmacological therapies because 'procedural memories enable the organism to retain learned connections between stimuli and responses, including those involving complex stimulus patterns and response chains, and to respond adaptively to the environment' [16]. The exercises of ATS and EYT – and also of many other non-pharmacological therapies – clearly present defined stimuli to the organism. The reaction to a stimulus can e.g. be seen in defined alterations of cardiovascular functioning. During the performance of each ATS or EYT exercise, the stimulus is repeated several times to stabilize the connection between stimulus and reaction. As suggested by the findings on memory consolidation, these very basic memories can also be consolidated during nighttime sleep. This way, the organism should be able to learn (or to learn again) proper working of involved physiological functions and networks.

A clear knowledge of the impact of ATS and EYT exercises on physiological functioning (e.g., cardiovascular regulation) is a prerequisite for the proper use of these therapies in a specific disease in an individual context. Hence, we suggest to focus on this relationship to clarify the organism's learning capacities by means of this kind of therapies.

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## Disclosure Statement

The authors declare that they have no competing interests.

## References

- 1 Denjean-von Stryk B, von Bonin D: Anthroposophical Therapeutic Speech. Edinburgh, Floris Books, 2003.
- 2 Steiner R: Eurythmy Therapy. Forest Row, Rudolf Steiner Press, 2009.
- 3 Stussman BJ, Black LI, Barnes PM, et al: Wellness-related use of common complementary health approaches among adults: United States, 2012. *Nat Health Stat Report* 2015;85:1–12.
- 4 von Bonin D, Frühwirth M, Heusser P, Moser M: Wirkungen der Therapeutischen Sprachgestaltung auf Herzfrequenz-Variabilität und Befinden. *Forsch Komplementarmed Klass Naturheilkd* 2001;8:144–160.
- 5 Cysarz D, von Bonin D, Lackner H, et al: Oscillations of heart rate and respiration synchronize during poetry recitation. *Am J Physiol Heart Circ Physiol* 2004;287:H579–H587.
- 6 Joseph CN, Porta C, Casucci G, et al: Slow breathing improves arterial baroreflex sensitivity and decreases blood pressure in essential hypertension. *Hypertension* 2005;46:714–718.
- 7 Bettermann H, von Bonin D, Frühwirth M, et al: Effects of speech therapy with poetry on heart rate rhythmicity and cardiorespiratory coordination. *Int J Cardiol* 2002;84:77–88.
- 8 Seifert G, Hernaiz Driever P, Pretzer K, et al: Effects of complementary eurythmy therapy on heart rate variability. *Complement Ther Med* 2009;17:161–167.
- 9 Edelhäuser F, Minnerop A, Trapp B, et al: Eurythmy therapy increases specific oscillations of heart rate variability. *BMC Complement Altern Med* 2015;15:167.
- 10 Lötze D, Heusser P, Büssing A: A systematic literature review on the effectiveness of eurythmy therapy. *J Integr Med* 2015;13:217–230.
- 11 Hamre HJ, Witt CM, Glockmann A, et al: Eurythmy therapy in chronic disease: a four-year prospective cohort study. *BMC Public Health* 2007;7:61.
- 12 Stickgold R: Sleep-dependent memory consolidation. *Nature* 2005;437:1272–1278.
- 13 Wagner U, Gais S, Haider H, et al: Sleep inspires insight. *Nature* 2004;427:352–355.
- 14 Walker MP: Sleep to remember. *American Scientist* 2006;94:326–333.
- 15 Westermann J, Lange T, Textor J, Born J: System consolidation during sleep – a common principle underlying psychological and immunological memory formation. *Trends Neurosci* 2015;38:585–597.
- 16 Tulving E: How many memory systems are there? *Am Psychol* 1985;40:385–398.

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## Integrative and Patient-Centered Medicine Needs Integrative and Student-Centered Education

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\*These authors share the first position.

\*\*These authors share the last position.

‘Integrative medicine and health reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic and lifestyle approaches, healthcare professionals and disciplines to achieve optimal health and healing [1].’ This definition from the Academic Consortium for Integrative Medicine & Health points out that Integrative Medicine is much more than adding complementary or alternative medicine (CAM) therapies to conventional medicine. In fact, as a patient-centered movement, Integrative Medicine considers the multidimensionality of a human being and uses this knowledge to tailor medical care and therapies to the individual patient. It aims to develop and realize a form of medicine that approaches the patient as a whole person with individual needs, inner aspirations, and opportunities for personal growth. One question central to the future development and realization of integrative and patient-centered medicine lies in the educational challenge of how to enable health care professionals to practice individualized and person-centered health care.

This challenge centers around the fundamental distinction between nomothetic and idiographic approaches to knowledge, conceptualized by Windelband [2, 3]. ‘Nomothetic’ is used to characterize the search for general laws, and ‘idiographic’ to indicate a concern for what is particular to the individual case. While the nomothetic approach is usually connected to quantitative research, and is thus well represented in medicine, the idiographic approach is often neglected. However, patients – as unique individuals in body and mind as well as in spiritual aspects – can best be treated by integrating both perspectives. In Sackett’s original definition of evidence-based medicine [4], both aspects were included: the nomothetic approach with its external evidence and the idiographic approach with patient preferences and individual clinical expertise. However, the algorithms currently used in clinical practice emphasize the external evidence and often do not consider re-individualization of external evidence data [5].

Adjusting to the patient needs and re-individualization can be complex; it is highly relevant not only for the patient-physician relationship but also for therapeutic effects. The therapeutic relationship and especially the notion of the patient, that she or he will receive help, is known to be one of the most important factors for success in therapy on a psychological level [6]. Physicians therefore have to combine both the nomothetic and the idiographic perspectives, and they have to develop competencies in both. To find the best possible individual treatment for the patient, health care professionals need idiographic competencies such as the ability to perceive the individual characteristics of the patient, critical thinking,

creativity, self-reflection, and good communication. This includes also the development of empathy, which often seems to decline during medical education [7].

As Integrative Medicine does not simply mean adding another treatment to conventional medication, Integrative Medical Education cannot be achieved by simply adding a CAM course to an already tightly-packed curriculum [8]. In fact, it is necessary to reform medical education and combine nomothetic and idiographic competencies, linking medical knowledge and scientific thinking with the development of an idiographic approach to the patient.

Developed in 2003, the Integrated Curriculum for Anthroposophic Medicine (ICURAM) aims to realize such an Integrative Medical Education. Trying to address and develop these competencies and provide students with the foundations of Integrative and Anthroposophic Medicine (IAM), ICURAM offers a 6-year curriculum. Anthroposophic Medicine is a holistic and scientific medical system with an underlying anthropology, considering the human being as consisting of body, life, soul, and spirit [9]. ICURAM is integrated as an optional program into the model curriculum of the Medical School of Witten/Herdecke University, Germany. Students encounter real patient contact from the beginning. A perception training [10] in a clinical setting helps them experience, reflect, and train their perceptive capabilities. Amongst other curricular activities, seminars in Anthropology and Integrative Physiology run through the first 2 years, focusing on questions about the human being, health, disease, and cure [11]. During years 3 to 5, students can select up to 9 integrated clerkships in IAM in different specialties [12] where they take on growing responsibility in clinical tasks. Integrated seminars on principles of biography and its impact on disease are offered to deepen the understanding of the interdependency of body, life, soul, and spirit. To foster professional and personal formation, mentoring groups and personal reviews are provided at the important transition points during medical education. In those reviews, students can reflect on their personal professional development and on future goals.

In the final year, internships take place in different Clinical Education Wards of Integrative Medicine (CEWIM) [13]. Under supervision, students adopt as much responsibility as possible when interacting with patients from admission to discharge. They are fully integrated members of the multiprofessional ward team, applying IAM. A clinical reflection training accompanies the 4-month rotations. It includes regular discussions among students with an experienced supervisor about their experiences and difficulties on the ward, enhancing their professional development [14] and facilitating creative responses to dilemmas within difficult clinical encounters [15]. Research shows benefits of the CEWIM concept, with patients reporting a greater patient centeredness and empathy [16].

The educational principles applied in ICURAM are described as the ESPRI<sup>2</sup>T approach [11]. They are summarized in the thesis that a medical practice wanting to accommodate the patient’s individuality in therapy needs a training that includes a didactic accounting for the student’s individuality. First research results on graduates’ outcomes reveal benefits for their regular training as well as for their professional and personal development through participating in ICURAM [17].

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## References

- 1 Academic Consortium for Integrative Medicine & Health: Introduction. [www.imconsortium.org/about/about-us.cfm](http://www.imconsortium.org/about/about-us.cfm) (last accessed November 10, 2016).
- 2 Windelband W: Geschichte und Naturwissenschaft: Rede zum Antritt des Rectorats der Kaiser-Wilhelms-Universität Strassburg, geh. am 1. Mai 1894. Strassburg, Heitz, 1894.
- 3 Matthiessen PF: Der diagnostisch-therapeutische Prozess als Problem der Einzelfallforschung; in Ostermann T, Matthiessen PF (eds): Einzelfallforschung in der Medizin. Bedeutung, Möglichkeiten, Grenzen; medizintheoretisches Symposium. Frankfurt/M., VAS, 2003, pp 31–59.
- 4 Sackett DL, Rosenberg WM, Gray JA, et al: Evidence based medicine: what it is and what it isn't. *BMJ* 1996;312:71–72.
- 5 Greenhalgh T, Howick J, Maskrey N, Evidence Based Medicine Renaissance Group: Evidence based medicine: a movement in crisis? *BMJ* 2014; 348:g3725.
- 6 Morgan R, Luborsky L, Crits-Christoph P, et al: Predicting the outcomes of psychotherapy by the Penn Helping Alliance Rating Method. *Arch Gen Psychiatry* 1982;39:397–402.
- 7 Neumann M, Edelhäuser F, Tauschel D, et al: Empathy decline and its reasons: a systematic review of studies with medical students and residents. *Acad Med J* 2011;86:996–1009.
- 8 Kligler B, Maizes V, Schachter S, et al: Core competencies in integrative medicine for medical school curricula: a proposal. *Acad Med* 2004;79: 521–531.
- 9 Heusser P: *Anthroposophy and Science: An Introduction*. Frankfurt/M., New York, Peter Lang, 2016.
- 10 Edelhäuser F, Scheffer C, Tauschel D, et al: Educating medical students in clinical perception: an evaluation study. *BMC Complement Altern Med* 2012;12:P374.
- 11 Scheffer C, Tauschel D, Neumann M, et al: Integrative medical education: educational strategies and preliminary evaluation of the Integrated Curriculum for Anthroposophic Medicine (ICURAM). *Patient Educ Couns* 2012; 89:447–454.
- 12 Tauschel D, Scheffer C, Edelhäuser F: *Educating Integrative Medicine over the whole curriculum – six years of experience with the Integrated Curriculum for Anthroposophic Medicine (ICURAM)*. Las Vegas, NV, USA, 2016. [www.icimh.org/local/uploads/content/files/Late Breaker Abstract Notices.pdf](http://www.icimh.org/local/uploads/content/files/Late%20Breaker%20Abstract%20Notices.pdf).
- 13 Scheffer C, Edelhäuser F, Tauschel D, et al: Can final year medical students significantly contribute to patient care? A pilot study about the perception of patients and clinical staff. *Med Teach* 2010;32:552–557.
- 14 Lutz G, Scheffer C, Edelhäuser F, et al: A reflective practice intervention for professional development, reduced stress and improved patient care – a qualitative developmental evaluation. *Patient Educ Couns* 2013;92: 337–345.
- 15 Lutz G, Roling G, Berger B, et al: Reflective practice and its role in facilitating creative responses to dilemmas within clinical communication – a qualitative analysis. *BMC Med Educ* 2016;16:301.
- 16 Scheffer C, Tauschel D, Neumann M, et al: Active student participation may enhance patient centeredness: patients' assessments of the Clinical Education Ward for Integrative Medicine. *Evid Based Complement Alternat Med* 2013;2013:e743832.
- 17 Brockhaus J, Edelhäuser F, Tauschel D, et al: 'Idealism became viable, something I can put into practice': the meaning of an Integrated Curriculum for Anthroposophic Medicine for its graduates. *J Altern Complement Med* 2014;20:A99–A100.