

Socio-ecological Medicine—An Anthroposophical Approach

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Abstract

Socio-ecological medicine, exemplified by anthroposophic practices, integrates physical, emotional, and spiritual health with sustainability and social justice. This approach, rooted in Rudolf Steiner's vision, emphasises self-regulation, autonomy, and meaningful care, aligning with e.g. Positive Health models. Anthroposophic medicine promotes therapies like eurythmy, external applications, and biodynamic nutrition, reducing reliance on pharmaceuticals and fostering ecological harmony. Its emphasis on patient empowerment, ethical responsibility, and collaboration addresses modern challenges like overmedicalisation, antimicrobial resistance, and environmental degradation. This holistic model fits seamlessly with socio-ecological agriculture, economics, and education as it aims to enhance resilience and dignity, offering a sustainable path forward for individuals, communities, and the planet.

Keywords

Socio-ecological medicine • Anthroposophic medicine • Integrative health • Positive health • Self-regulation • Holistic healthcare • Eurythmy therapy • Biodynamic nutrition • External applications • Ethical medicine • Sustainable healthcare • Patient empowerment • Environmental health • Antimicrobial resistance

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1 Introduction

Health, and therefore medicine, cannot be fully understood without a holistic, socio-ecological approach. This is the reason why definitions of health, such as it being “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1946, para. 1), have been developed into more encompassing and dynamic ones. For example, Machteld Huber, redefined health as “the ability to adapt and self-manage in the face of social, physical, and emotional challenges” (Huber as cited in Thomas, 2023, para. 2). Her concept, known as “Positive Health,” shifts the focus from a state to the capacity for resilience and autonomy. Huber’s model includes six dimensions: Body functions, mental functions, spiritual dimension, quality of life, social participation, and daily functioning (Valentijn, 2021). Indeed, reducing health to the absence of pain or malaise would not only ignore many conditions that do not cause discomfort, but would also incur the risk of interpreting strenuous, uncomfortable challenges, development processes, and transitions of body, soul, and spirit as diseases.

Similarly, all definitions of health that rely purely on norms, be it of weight or blood pressure, run the risk of generalisation and of missing what health is really about. These are reasons why there can be no final, globally accepted definition of health, and therefore also of medicine. Defining health, and therefore medicine, will always remain a contextualised, socio-ecological act by those involved in a given situation. Therefore, health, including medicine, are socio-ecological realities to their very core. Anthroposophic endeavours in health and medicine were pioneering socio-ecological perspectives and activities from the very start contributing to a socio-ecological just future of humankind and Earth.

In 1924, Rudolf Steiner (1924/2004) saw human health as inseparable from sustainable agriculture that is designed for biodiversity, sustainability and soil development¹ and thus serving healthy nutrition of all life. Steiner had already pointed out malnutrition (e.g. too much protein for infants) and anthroposophic paediatricians were and are leading in promoting breastfeeding for everyone. Anthroposophic hospitals were among the first breastfeeding-friendly hospitals in Germany—promoting what is available to every woman, regardless of social status, and reducing the rate of avoidable deaths and serious infections. In this context, the principles of anthroposophic agriculture and medicine align closely with the contemporary One Health approach (Matthes et al., 2024).

¹ See <https://www.fibl.org/en/themes/projectdatabase/projectitem/project/404> for a large number of publications comparing biodynamic and conventional farming, including a Science publication on the DOK Experiment: Long-term study on bio-dynamic, bio-organic and conventional farming systems – the world’s longest running trial.

2 Anthroposophic Medicine

In anthroposophic medicine, the leading health question is the question of self-regulation, on a vital, emotional and spiritual level (meaningful, conscious lifestyle, low use of animal food, critical relationship to alcohol, etc.) (Girke, 2016). The anthroposophic lifestyle, which also includes spiritual aspects, was explicitly tested against other forms of lifestyle regarding its effects on the development of early childhood stress and allergies (Alm et al., 1999; Stenius et al., 2010; Swartz et al., 2015). The latter seminal Lancet study by Alm et al. (1999) led to many other trials including the trials on milk consumption and allergy (Waser et al., 2007), which have also been reflected in studies on the microbiome in recent years, continuing to show that the anthroposophic lifestyle promotes biodiversity in nature *and* high level of microbial life in humans (Muhie, 2023; Santoni et al., 2022).

Pharmaceutically, studies such as the Parsifal study (Alfvén et al., 2006), but also the anthroposophic medicine outcomes study (Hamre et al., 2014), and the IIPCOS study (Hamre et al., 2017) demonstrate that anthroposophic doctors use fewer pharmaceutical drugs, including antibiotics. Modern pharmaceutical practices are associated with high environmental pollution, often in poorer countries, but also worldwide—evident in the widespread contamination of water with metformin (Zheng et al., 2024), linked to the exponential rise in type 2 diabetes. It has been proven that more and more people are losing the ability to self-regulate their blood sugar, blood pressure, body weight, etc. Polypharmacy has been proven to endanger old people with an increased risk of falls (Zia et al., 2015), and it pollutes wastewater and groundwater to a high degree, for example through diclofenac (Sathishkumar et al., 2020), in complete contrast to the phytotherapeutic use of *Arnica montana*—whereby helenalin in arnica has a stronger anti-inflammatory effect than diclophenac (Greco et al., 2022).

An excellent paradigm for dealing with the self-regulation of the human organism is that of dealing with fever. The development of FeverApp² and FeverFriend³ supports reducing unfounded fears in a socially barrier-free manner. They also support the reduction in the use of unnecessary medicines such as paracetamol, ibuprofen and antibiotics in early childhood and strengthen confidence in the ability to self-regulate. The background here is the conviction that the warmth regulation of humans, which differs significantly from animals (naked skin, high need for thermoregulation, especially of the brain) (Jablonski, 2010), is not a purely physical matter, but has to do with the fact that the soul and spiritual aspect, and thus ultimately the question of self-efficacy, is directly related to the “embodiment” of healthy self-regulation. This pertains especially to the release of energy in the self-aware, self-organising (I-organisation) human organism with its “physiology of freedom” (Steiner & Wegman, 1924).

² <https://www.feverapp.de/>.

³ <https://feverfriend.eu/>.

Artistic therapies and eurythmy therapy are also suitable for strengthening self-efficacy and ameliorating many chronic conditions (Hamre et al., 2007, 2009), including patients with cancer (children and adults) and anorexia nervosa (Bar-Sela et al., 2007; Simmance, 2015).

Anthroposophic clinics and hospitals are available to all patients in Germany and regularly receive a very high satisfaction score in patient evaluations: Many patients feel more comprehensively seen and empowered by anthroposophic medical professionals (Baars et al., 2017, 2018). Biographical work is important in anthroposophic medicine and in all areas of anthroposophic One Health concepts (Baars, 2005).

A core enquiry is about how human consciousness is categorically different from all physical-molecular processes. Brains may assimilate, associate, and correlate, but brains do not think, people do. Anthroposophic medicine aims to not confuse functions with their physical prerequisites. Thinking and consciousness are enabled by the brain but not caused by the brain (Fuchs, 2018, 2021). They are the result of the activity of whole, embodied, living entities. Anthroposophic medicine addresses patients and their relatives at their various levels of consciousness and in their values. This is central, for example, in end-of-life care (spiritual care) (Heusser et al., 2006), but also e.g. in obstetrics. In terms of its frequency and its chronic consequences, the caesarean section is without a doubt a much too frequently performed procedure today (Angolile et al., 2023). Anthroposophic Hospitals such as the Filderlinik and the Gemeinschaftskrankenhaus Herdecke prove that anthroposophic medicine can contribute to a reduction in the caesarean section rate in the direction of 15%, while in many developed countries the rate is significantly higher (Betrán et al., 2016). Data from 2010 to 2018, spanning 154 countries and accounting for 94.5% of global live births, reveal that 21.1% of women gave birth via caesarean section, exceeding the World Health Organization's (WHO) recommended range of 10–15% as an acceptable standard (Betrán et al., 2021).

Anthroposophic medicine promotes, as with caesarean section, fever, balanced nutrition, the active skills of patients in a comprehensive way (Berger et al., 2024; Mascher et al., 2023; Michalsen et al., 2021), in terms of what characterises the “blue zones” (describe as the regions of the world where people live longer and healthier lives than average) (Buettner & Skemp, 2016), as well as the Positive Health model.

Anthroposophic medicine assumes that a person's actions in relation to their environment do not remain without consequences for their future fate, and thus, promotes reverence for life. Human freedom, human responsibility—which encompasses the responsibility for preserving our own and each other's human dignity, including the human dignity of the disabled—are core values of anthroposophy and anthroposophic medicine. The human being is respected as an “embodied self” with its individual biography and values. In contrast, trends in neurobiology today threaten to declare humans themselves as an illusion of a “body machine” whose self is in principle a brain projection (Fuchs, 2020). This neurobiological paradigm has profound consequences e.g. for the professional relationships

to patients in medicine. As a consequence, such positions amount to *ethical nihilism*, which ultimately denounces all ethical norms as arbitrary statements of a consciousness “invented” and dominated by matter.

In contrast, anthroposophy is based on the evidence of the human self and the fact that human thinking in no way represents the mere projections of physical structures and processes (Fuchs, 2018, 2021), but follows its own laws, for example in mathematics. Likewise, the question of *what is good* for people—as well as for all living beings and the Earth as a whole—has a very independent and central meaning in anthroposophy beyond any materialistic reductionism (Steiner, 1894a, 1894b).

Anthroposophy, without fundamentally rejecting animal experiments, emphasises that humans and especially higher animals have an emotional and spiritual experience of their own bodies and environment. However, medicine and cosmetics that are based on millions of often painful, torturous and fatal animal experiments are fundamentally problematic from an anthroposophic point of view. Mainstream science has long denied animals what they undoubtedly have: The ability to suffer is in a way made all the more profound in that the animal lacks the conscious perspective of meaning that can make some temporary suffering seem bearable for humans. Therefore, people bear a moral responsibility when they cause suffering to animals in factory farming and animal testing.

3 **Socio-ecological Aspects of Anthroposophic Medicine**

Like health, the terms “social” and “ecological” cannot be confined to any abstract or finite definition. Recognising this carries significant implications: ultimately, what is deemed social or ecological can only be determined by those directly involved in a specific context—whether at a local or global scale. This challenge is compounded by the fact that what may seem to represent a lack of health, sociability, or ecology at one level might, from a broader perspective, be viewed as a healthy, sociable, and ecological solution.

This raises an important question: If the determination of what is social and ecological is best made by those directly involved in a particular context, can artificial intelligence serve as an assessor of what is healthy, social, and ecological? With its rapidly advancing capabilities, including modes of data collection that increasingly resemble human senses, artificial intelligence is becoming more adept at identifying correlations between various factors and markers of health, sociability, and ecology. Such markers might include longevity, peace, and stability. However, there may be circumstances where longevity, peace, and stability are not the ultimate indicators of health, sociability, or ecology. Indeed, there may even be instances where health, sociability, and ecology themselves are not the ultimate objectives.

This train of thought brings us directly to what Rudolf Steiner (1894a, 1894b) called “ethical individualism” in his work “Philosophy of Freedom”. Steiner proposed “Philosophy of Spiritual Activity” as title for this book, which is very fitting given that the choice of goal(s) to be striven for in a particular situation is ultimately a matter beyond any definition, norm or habit. It can be a free, highly contextualised act that—though it may defy all hitherto known parameters—may in hindsight be judged as healthy, sociable and ecological. Human history is full of such more or less free and contextualised acts. Taking examples from the field of medicine one could say that it is neither healthy, nor ecological nor social to be using chemotherapy in a highly isolated cell being prepared for autologous stem cell transplantation. Yet many people, especially children, have been enabled long-term survival by such means. Oncologists and their patients constantly face the question as to what is the next best step to take. Different patients will choose different paths, and we have time-and-again witnessed how decisions which seemed irrational, asocial, unecological and doomed to fail have in some way advanced humanity, if only in terms of gaining helpful knowledge for the next generation of patients.

Hence, health and medicine include a very individual dimension of meaning. Even on their deathbeds, people want their lives to have been—and still be—meaningful for others (Büssing, 2024). Interestingly, dimensions of spirituality play an important role in all the blue zone areas of the world. People who live a long time tend to live socially, ecologically and spiritually.

The capacity for autonomy, i.e. for individuals and communities to take care of their own health is a very important aspect of a socio-ecological medicine. Today, 70% of death globally are related to noncommunicable chronic diseases (NCDs) and Western lifestyle (World Health Organization, 2024). Lifestyle changes are the most effective prevention of the predominating NCDS (cardiovascular diseases, diabetes, chronic obstructive lung diseases, cancer), of dependency on medicines and procedures that are a burden on the environment and that lead to dependency and social isolation or strain. The spiritual activity kindled by anthroposophy or other paths of spiritual awakening can be strong contributors to self-development and health maintenance by engendering life-long learning and ensouled mental and physical exercise, such as eurythmy and other arts. It is also a strong antidote against damaging consumerism and induces a shift from profit-oriented to socio-ecologically oriented lifestyles and businesses.

This book presents examples of how anthroposophy is contributing to social and ecological health on Earth. The field of health and medicine also offers many examples worldwide, ranging from highly concentrated⁴ to highly potentised remedies,⁵ from individual biography work and art therapies to group eurythmy therapy sessions, from neurosurgery⁶ to external applications⁷ to ecotherapy in therapeutic gardens, from small therapy centres to 600 + bed hospitals (Martin, 2020), and from health applications⁸ to nationwide trials.⁹

A social, ecological medicine is one that helps the patient develop treatments themselves in an autonomous, ecological manner that promotes self-efficacy. Anthroposophic medicine attempts to do this in many ways. The *Vademecum: External Applications in Anthroposophic Nursing (Pflege Vademecum)*¹⁰ offers patient empowering and highly ecological external applications that can help promote well-being, vitality and function. Given that these external applications are often applied by another person, this side of anthroposophic medicine has an inherently social aspect to it. All these external applications involve substances that are readily taken directly from nature and seemingly seamlessly brought back into the cycle of nature. The social aspect of medicine is enhanced throughout in the way therapists, nurses and doctors all work together to produce as holistic a picture and treatment of the human being as possible.

It would have been very advantageous to anthroposophic medicine if it had engaged in rigorous research earlier and more intensively. But at least now research intensity is picking up (Kienle & Kiene, 2010).

Anthroposophic doctors were notoriously early in recognising non-ecological and ultimately non-social and unhealthy aspects (Soldner & Stellmann, 2014), such as the detrimental effect of television (Glöckler et al., 2024), and screen-time on children (Schwarz et al., 2024a, 2024b; Zink, 2024), of an over-intellectualised education, of an overuse of painkillers, antidepressants, and sleeping pills and of an overuse of antibiotics and the danger of antimicrobial resistance.

4 Conclusion

In summary, anthroposophic medicine is in its very core intended to be a socio-ecological medicine and contributes in many ways to infuse such qualities into mainstream medicine. Anthroposophic medicine provides a holistic, socio-ecological approach that integrates physical, emotional, and spiritual health. Rooted in Rudolf Steiner's vision, it emphasises self-regulation, autonomy, and

⁴ Vademecum anthroposophische Arzneimittel, www.anthromedics.org www.misteltherapie.org.

⁵ <https://www.wisscom.ch>.

⁶ <https://www.uni-wh.de/ansprechpartner/wolfram-scharbrodt>.

⁷ www.pflege-vademecum.de.

⁸ www.warmuptofever.org, www.feverapp.de, www.feverfriend.com.

⁹ www.entaier.de, www.bildschirmfrei-bis-3.de, www.feverapp.de, and many others.

¹⁰ <https://www.pflege-vademecum.de/?locale=en>.

meaningful interactions, promoting therapies that empower individuals while respecting the interconnectedness of humans, nature, and society. By addressing modern challenges like overmedicalisation, environmental sustainability, and ethical care, anthroposophic medicine aligns with global movements like the Positive Health model and One Health. Its inclusive therapies—such as external applications, eurythmy, and integrative treatment plans—foster long-term well-being while respecting ecological and social principles. This text highlights how anthroposophic medicine bridges conventional and alternative paradigms, advocating for patient empowerment, ethical responsibility, and sustainable health practices. It offers a pathway to a more just and sustainable future for humanity and the planet.

References

- Alfvén, T., Braun-Fahrlander, C., Brunekreef, B., Von Mutius, E., Riedler, J., Scheynius, A., Van Hage, M., Wickman, M., Benz, M. R., Budde, J., & PARSIFAL Study Group. (2006). Allergic diseases and atopic sensitization in children related to farming and anthroposophic lifestyle—the PARSIFAL study. *Allergy*, 61(4), 414–421. <https://doi.org/10.1111/j.1398-9995.2005.01024.x>
- Alm, J. S., Swartz, J., Lilja, G., Scheynius, A., & Pershagen, G. (1999). Atopy in children of families with an anthroposophic lifestyle. *The Lancet*, 353(9163), 1485–1488. [https://doi.org/10.1016/S0140-6736\(98\)09344-1](https://doi.org/10.1016/S0140-6736(98)09344-1)
- Angolile, C. M., Max, B. L., Mushemba, J., & Mashauri, H. L. (2023). Global increased cesarean section rates and public health implications: A call to action. *Health Science Reports*, 6(5), e1274. <https://doi.org/10.1002/hsr2.1274>
- Baars, T. (2005). How biographical experiences affect a research and training programme in bio-dynamic agriculture at Kassel University. In B. Haverkort, K. van 't Hooft, & W. Hiemstra (Eds.), *Moving worldviews: Reshaping sciences, policies and practices for endogenous sustainable development* (pp. 364–380). ETC/Compas.
- Baars, E. W., Koster, E. B., & Verhoef, J. (2017). The contribution of anthroposophic medicine to self-management: An exploration of concepts, evidence, and patient perspectives. *Complementary Medicine Research*, 24(4), 225–231. <https://doi.org/10.1159/000478981>
- Baars, E. W., Kiene, H., Kienle, G. S., Heusser, P., & Hamre, H. J. (2018). An assessment of the scientific status of anthroposophic medicine, applying criteria from the philosophy of science. *Complementary Therapies in Medicine*, 40, 145–150. <https://doi.org/10.1016/j.ctim.2017.10.006>
- Bar-Sela, G., Atid, L., Danos, S., Gabay, N., & Epelbaum, R. (2007). Art therapy improved depression and influenced fatigue levels in cancer patients on chemotherapy. *Psycho-Oncology*, 16(11), 980–984. <https://doi.org/10.1002/pon.1175>
- Berger, B., Scheffer, C., Jenetzky, E., & Martin, D. D. (2024). Emotional regulation competencies for people with type 1 diabetes mellitus (T1D)—A multimodal training program (current state). *The Mind*, 3. <https://doi.org/10.61936/themind/2024121227>
- Betrán, A. P., Ye, J., Moller, A. B., Zhang, J., Gülmezoglu, A. M., & Torloni, M. R. (2016). The increasing trend in caesarean section rates: Global, regional and national estimates: 1990–2014. *PLoS ONE*, 11(2), e0148343. <https://doi.org/10.1371/journal.pone.0148343>
- Betrán, A. P., Ye, J., Moller, A.-B., Souza, J. P., & Zhang, J. (2021). Trends and projections of caesarean section rates: Global and regional estimates. *BMJ Global Health*, 6(6), e005671. <https://doi.org/10.1136/bmjgh-2021-005671>
- Buettner, D., & Skemp, S. (2016). Blue Zones: Lessons from the world's longest lived. *American Journal of Lifestyle Medicine*, 10(5), 318–321. <https://doi.org/10.1177/1559827616637066>
- Büssing, A. (2024). Spiritual Care—Standardisierte Erfassung von existenziellen und spirituellen Bedürfnissen und ihre Implementierung in Versorgungseinrichtungen. In A. Büssing, A.

- Giebel, & T. Roser (Eds.), *Spiritual Care & Existential Care interprofessionell: Handbuch spiritueller und existentieller Begleitung in der Gesundheitsversorgung* (pp. 359–369). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-67742-1_35
- Fuchs, T. (2018). *The ecology of the brain: The phenomenology and biology of the embodied mind*. Oxford University Press.
- Fuchs, T. (2020). Embodiment and personal identity in dementia. *Medicine, Health Care and Philosophy*, 23(4), 665–676. <https://doi.org/10.1007/s11019-020-09973-0>
- Fuchs, T. (2021). *Das Gehirn – ein Beziehungsorgan: Eine phänomenologisch-ökologische Konzeption* (6. Aufl.). Kohlhammer Verlag.
- Girke, M. (2016). *Internal medicine: Foundations and therapeutic concepts of anthroposophic medicine*. Salumed-Verlag.
- Glöckler, M., Goebel, W., & Michael, K. (2024). *Kindersprechstunde: Ein medizinisch-pädagogischer Ratgeber*. Urachhaus.
- Greco, A., Mennet-von Eiff, M., Christoph, M., Keusgen, M., Edelhäuser, F., & Peifer, C. (2022). Wie kann die Pharmazie zur Nachhaltigkeit beitragen? *Pharmazeutische Zeitung*, 47, 48–52.
- Hamre, H. J., Witt, C. M., Glockmann, A., Ziegler, R., Willich, S. N., & Kiene, H. (2007). Anthroposophic art therapy in chronic disease: A four-year prospective cohort study. *Explore*, 3(4), 365–371. <https://doi.org/10.1016/j.explore.2007.04.008>
- Hamre, H. J., Witt, C. M., Kienle, G. S., Meinecke, C., Glockmann, A., Willich, S. N., & Kiene, H. (2009). Anthroposophic therapy for children with chronic diseases: A two-year prospective cohort study in everyday practice. *BMC Pediatrics*, 9, Article 39. <https://doi.org/10.1186/1471-2431-9-39>
- Hamre, H. J., Kiene, H., Ziegler, R., Tröger, W., Meinecke, C., Schnürer, C., Vögler, H., Glockmann, A., & Kienle, G. S. (2014). Overview of the publications from the anthroposophic medicine outcomes study (AMOS): A whole system evaluation study. *Global Advances in Health and Medicine*, 3(1), 54–70. <https://doi.org/10.7453/gahmj.2013.097>
- Hamre, H. J., Glockmann, A., Heckenbach, K., & Matthes, H. (2017). Use and safety of anthroposophic medicinal products: An analysis of 44,662 patients from the EvaMed pharmacovigilance network. *Drugs - Real World Outcomes*, 4(4), 199–213. <https://doi.org/10.1007/s40801-017-0118-5>
- Heusser, P., Braun, S. B., Bertschy, M., Burkhard, R., Ziegler, R., Helwig, S., Wegberg, B. V., & Cerny, T. (2006). Palliative in-patient cancer treatment in an anthroposophic hospital: II. Quality of life during and after stationary treatment, and subjective treatment benefits. *Forschende Komplementärmedizin/Research in Complementary Medicine*, 13(3), 156–166. <https://doi.org/10.1159/000093489>
- Jablonski, N. G. (2010). The naked truth: Why humans have no fur. *Scientific American*, 302(2). <https://www.scientificamerican.com/article/the-naked-truth-why-humans-have-no-fur/>
- Kienle, G. S., & Kiene, H. (2010). Review article: Influence of *Viscum album* L. (European mistletoe) extracts on quality of life in cancer patients: A systematic review of controlled clinical studies. *Integrative Cancer Therapies*, 9(2), 142–157. <https://doi.org/10.1177/1534735410369673>
- Martin, D. (2020). 100-Year Anniversary of Anthroposophic Medicine as an Integrative Medical System. *Complementary Medicine Research*, 27(6), 375–378.
- Mascher, A., Pelzer, F., Duncan, L. J., Martin, D. D., Baumgartner, S., & Berger, B. (2023). The introspective patient experience of mistletoe therapy in cancer: A qualitative study. *Integrative Cancer Therapies*, 22. <https://doi.org/10.1177/15347354231198474>
- Matthes, H., Baars, E. W., Brinkhaus, B., Christoph, M., Edelhäuser, F., Grah, C., Gründemann, C., Keßler, C., Martin, D., Michalsen, A., & Willich, S. N. (2024). The Earth as a living organism: Contribution of integrative medicine to the healing of our planet (One Health). *Complementary Medicine Research*, 31(5), 477–483. <https://doi.org/10.1159/000540226>
- Michalsen, A., Jeitler, M., Kessler, C. S., Steckhan, N., Robens, S., Ostermann, T., Kandil, F. I., Stankewitz, J., Berger, B., Jung, S., Kröz, M., & Büssing, A. (2021). Yoga, eurythmy therapy and standard physiotherapy (YES-Trial) for patients with chronic non-specific low back pain:

- A three-armed randomized controlled trial. *The Journal of Pain*, 22(10), 1233–1245. <https://doi.org/10.1016/j.jpain.2021.03.154>
- Muhie, S. H. (2023). Concepts, principles, and application of biodynamic farming: A review. *Circular Economy and Sustainability*, 3(2), 291–304. <https://doi.org/10.1007/s43615-022-00184-8>
- Santoni, M., Ferretti, L., Migliorini, P., Vazzana, C., & Pacini, G. C. (2022). A review of scientific research on biodynamic agriculture. *Organic Agriculture*, 12(2), 373–396. <https://doi.org/10.1007/s13165-022-00394-2>
- Sathishkumar, P., Meena, R. A. A., Palanisami, T., Ashokkumar, V., Palvannan, T., & Gu, F. L. (2020). Occurrence, interactive effects and ecological risk of diclofenac in environmental compartments and biota. *Science of The Total Environment*, 698, Article 134057. <https://doi.org/10.1016/j.scitotenv.2019.134057>
- Simmance, C. M. (2015). *Psychophysiologischer Wirksamkeitsnachweis eines multimodalen Therapiekonzepts bei Jugendlichen mit Anorexia nervosa* (Doctoral dissertation, Universität Tübingen). https://publikationen.uni-tuebingen.de/xmlui/bitstream/handle/10900/69278/Dissertation_Cara_Simmance.pdf
- Steiner, R., & Wegman, I. (1924). *Fundamentals of therapy: An extension of the art of healing through spiritual knowledge*. https://ivaa.info/wp-content/uploads/2021/09/Fundamentals_of_Therapy.pdf
- Soldner, G., & Stellmann, H. M. (2014). *Individual paediatrics: Physical, emotional and spiritual aspects of diagnosis and counselling*. MedPharm Scientific Publishers.
- Steiner, R. (1894). *Die Philosophie der Freiheit: Grundzüge einer modernen Weltanschauung. Seelische Beobachtungsergebnisse nach naturwissenschaftlicher Methode*. Rudolf Steiner Online Archiv. Retrieved January 22, 2025, from <http://anthroposophie.byu.edu/schriften/004.pdf>
- Steiner, R. (1894). *The philosophy of freedom: Basics of a modern worldview. Psychological observation results according to the scientific method*. Rudolf Steiner Online Archive. Retrieved January 22, 2025, from <http://anthroposophie.byu.edu/schriften/004.pdf>
- Steiner, R. (1924/2004). *Agriculture course: The birth of the biodynamic method* (Revised ed.). Rudolf Steiner Press.
- Stenius, F., Swartz, J., Lindblad, F., Pershagen, G., Scheynius, A., Alm, J., & Theorell, T. (2010). Low salivary cortisol levels in infants of families with an anthroposophic lifestyle. *Psychoneuroendocrinology*, 35(10), 1431–1437. <https://doi.org/10.1016/j.psyneuen.2010.05.010>
- Swartz, J., Lindblad, F., Arinell, H., Theorell, T., & Alm, J. (2015). Anthroposophic lifestyle and salivary cortisol are associated with a lower risk of sensitization during childhood. *Pediatric Allergy and Immunology*, 26(2), 153–160.
- Schwarz, S., Büssing, A., Krafft, H., Streit, B., & Boehm, K. (2024a). Parents and siblings as role models in dealing with digital screen media: Findings from a media fasting intervention. *Journal of Woman's Reproductive Health*, 3(2), 14–25. <https://doi.org/10.14302/issn.2381-862X.jwrh-24-5099>
- Schwarz, S., Krafft, H., Maurer, T., Lange, S., Schemmer, J., Fischbach, T., Emgenbroich, A., Monks, S., Hubmann, M., Martin, D., & Martin, D. (2024b). Screen time, nature, and development: Baseline of the randomized controlled study ‘Screen-free till 3’. *Developmental Science*, e13578. <https://doi.org/10.1111/desc.13578>
- Thomas, R. (2023, June). A positive approach to health. WALA Heilmittel GmbH. <https://www.wala.world/en/health/a-positive-approach-to-health.html>
- Valentijn, P. (2021, April 20). From a new definition of health towards person-centred care. *Essenburgh*. <https://www.essenburgh.com/en/from-a-new-definition-of-health-towards-person-centred-care/>
- Waser, M., Michels, K. B., Bieli, C., Flöistrup, H., Pershagen, G., von Mutius, E., Mutius, E., Ege, M., Riedler, J., Schram-Bijkerk, D., & Braun-Fahrlander, C., PARSIFAL Study Team. (2007). Inverse association of farm milk consumption with asthma and allergy in rural and suburban populations across Europe. *Clinical & Experimental Allergy*, 37(5), 661–670. <https://doi.org/10.1111/j.1365-2222.2006.02640.x>

- World Health Organization. (1946). *Constitution of the World Health Organization*. <https://www.who.int/about/governance/constitution>
- World Health Organization. (2024, December 23). *Noncommunicable diseases*. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- Zheng, Y., Shao, Y., Zhang, Y., Liu, Z., Zhao, Z., Xu, R., Ding, J., Li, W., & Zhang, H. (2024). Metformin as an emerging pollutant in the aquatic environment: Occurrence, analysis, and toxicity. *Toxics*, 12(7), Article 483. <https://doi.org/10.3390/toxics12070483>
- Zia, A., Kamaruzzaman, S. B., & Tan, M. P. (2015). Polypharmacy and falls in older people: Balancing evidence-based medicine against falls risk. *Postgraduate Medicine*, 127(3), 330–337. <https://doi.org/10.1080/00325481.2014.996112>
- Zink, N. (2024). „Je weniger Bildschirmzeit, desto besser“: Das Wichtigste zur neuen Leitlinie zum Bildschirmmediengebrauch. *Pädiatrie*, 36(1), 55–57. <https://doi.org/10.1007/s15014-024-5369-5>

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