

## Advances in pediatric research

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### Abstract

Pediatric research is a very important field to improve the therapy of children, not only to accept old strategies. Pediatric research is based on different subgroups, molecular-based research up to clinical research, which became also very important in the last years. Other fields of interest became more prominent like complementary therapies in childhood. Good medical care in children includes not only concentrating on school medicine but include additional innovative complementary therapies like homeopathic or anthroposophical therapies. All these therapies should bare in mind in modern pediatric treatment.

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### Editorial

From delivery to adolescence newborn and older children develop diseases that greatly affect their development of life. In all these facts, pediatric treatment is not based alone on typical school medicine but should include complementary baselines. Pediatricians should be aware of taking all these possible therapies in mind to treat the child the best.

Not only treat children with infections only by antibiotics, many other additional therapies could be ruled out and placed. Therefore, the education for pediatricians should be widening by these therapies and by opening their minds for these additional fields. Education at university is based on school medicine and also many pediatric departments concentrate on the classical form of pediatric education. Moreover clinical research in pediatrics is poor. In Germany research is based more on molecular basis. It is very important to improve the „clinical“ management of children and therefore the parent satisfaction in treating children in daily life at pediatric day centers.

Concerning this aspect, improving pediatric daily care management, studies to develop vaccine patches in children were more often found in

literature. Reviews in this new pediatric field show very cost-intensive research interventions to install vaccine patches in the daily management of children. Pediatric doctors follow the development of alternative vaccination methods with great interest. It will be postulated that these patches have many advantages in storage and application. They should spare the conventional and painful vaccination with a needle. Vaccine patches raise many questions concerning the clinical efficacy and if they are really new, safer and less painful than the conventional needle and syringe. On each vaccine patch are about 100 micro needles, which consist of polymers. They are normally 650 micrometers long with pointed tips and arranged in many rows. After the patch has been applied to the skin, the micro needles are inserted to the skin and they dissolve after a few minutes together with the vaccine. The needles reach the stratum corneum, where a high number of antigen-presenting cells, especially the Langerhans epidermal cells and dendritic cells are located. Because of the high number of immunoreactive cells in the skin a stronger immune response can be generated from the intradermal injection than from the conventional intramuscular injection. A sufficient immune response can be the result. Potential infection risk induced by vaccine

patches compared to conventional needle vaccination seems to be very low.

Other additional and new pediatric fields of research are clinical studies with anthroposophical therapies like management of lymphangitis with pipeline bandage of marigold essence or treating pediatric wounds with medical honey. All these therapies are impressive in daily pediatric work and should be presented in younger pediatricians to learn, that not only antibiotic therapy leads to full recovery of illness in a child. But they must be

known to treat the child the best in different ways, including innovative therapy aspects. Normally, in Germany, the medical student learns to treat lymphangitis primarily by antibiotics. Compared to a treatment with a pipeline bandage of marigold essence, a highly concentrated marigold solution, results are nearly the same and sometimes recovery is quicker than with conventional therapies. Pediatricians should bare in mind a widening spectrum of new innovative pediatric therapies.