

Frequently Asked Questions about the use of essential oils

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Rain, wind and freezing temperatures – the chilly, wet months are the typical season for colds involving runny noses, coughing and sore throats. Many consumers hope that the expectorant action of essential oils containing eucalyptus, peppermint and camphor will offer some relief. They are amongst the ingredients of soothing bath salts, inhalation solutions and chest rubs. However, caution should be exercised when administering cold or soothing products to children. The same applies to perfumed oils or essential oils to be diffused into indoor air from oil lamps. Infants and toddlers in particular may react sensitively to even the minutest amounts of essential oils. There have been reports of numerous cases of intoxications. BfR has compiled the Frequently Asked Questions on “essential oils” below.

What are essential oils?

Essential oils may be various compositions of substance mixtures of liquid, volatile and fat soluble plant ingredients or of synthetic aroma substances with a characteristic fragrance. In contrast to fatty oils, essential oils completely evaporate. The mixtures consist of a number of chemical compounds whereby most of them are terpenes.

How do they work?

Essential oils are taken up into the body by means of inhalation via the mucous membranes, rubbing into the skin or ingestion via the gastrointestinal tract. They reach the blood stream and various organs. In addition, essential oils reach the olfactory nerves via the nose. There, electrochemical signals are created which are passed on as information to the brain. As the brain controls the production of various hormones and influences the immune system, essential oils can have an impact on mood. The substances are excreted in unchanged form through the kidneys, sometimes through the lungs in respiratory air.

For what purposes are essential oils used?

There are many different uses. Internally, essential oils can for instance stimulate appetite and digestion. They are used in cold preparations like bath oils or soothing bath salts but also to promote circulation in sport ointments. Because of their fragrance properties, they are added as aromatic agents to cosmetics and may be used as perfumed oils to improve indoor air. In the wellness sector, too, essential oils have taken on increasing importance.

Wellness and healing properties are associated with essential oils. In the case of colds and flu the use of preparations with essential oils is often found to be soothing and to alleviate symptoms. Highly diluted essential oils are normally used in medicinal products and cosmetics although undiluted oils are also commercially available.

What should be borne in mind when using essential oils in the case of babies and toddlers?

Undiluted essential oils are not suitable for babies or toddlers!

Even the minutest amounts (e.g. a few drops) which reach the mouth or nose can lead to life-threatening contractions of the larynx and respiratory arrest in babies and toddlers. Other adverse reactions are skin and mucosa irritations, vomiting, movement disorders or even convulsions.

Therefore, only use preparations which are specifically indicated as being suitable for babies and toddlers. If in any doubt consult a doctor or pharmacist. These products should not contain any highly efficacious essential oils like camphor. Always follow the dilution instructions. Do not use the products on the face. Do not apply directly to children's skin because of their skin-irritating properties. Always keep essential oils out of the reach of children.

Are there essential oils to which children are particularly sensitive?

In the case of children under the age of three, special caution should be exercised when using camphor, eucalyptus, thyme and peppermint oil (menthol). These essential oils are deemed to be particularly problematic.

Have there been reports of intoxication cases?

Intoxications involving essential oils are known to BfR. The poison information and treatment centres also receive many inquiries about them. In the case of children the reason is frequently the accidental intake of inhalates or perfumed oils. Frequently, inhalates are administered for swallowing because parents mistake these products for medication to be taken in drop form. Because of their general popularity in the wellness area and the related widespread distribution of essential oils, there are numerous opportunities for intoxication.

What should one do in the case of the erroneous use or intoxication symptoms?

If a child manifests symptoms like respiratory distress, convulsions or changes in consciousness, an emergency doctor or emergency service should be contacted immediately. The first things to do after skin contact could be rinsing with water and after accidental swallowing, the administration of liquids (tea, water or juice) for the purposes of dilution. Then advice should be sought from a poison information and treatment centre. Depending on the type and amount of essential oil ingested, home monitoring may be necessary and a visit to a doctor essential. Only after ingesting camphor and once tea, water or juice has been administered for the purposes of dilution, should the child be taken immediately to a paediatric clinic which will then monitor the child in this specific case for a short period of time.

Are any risk assessments available on the various essential oils?

BfR has compiled an expert opinion on tea tree oil which it has posted on its website. Tea tree oil has not received marketing authorisation as a medicinal product. Hence, neither its efficacy nor its health risks have been assessed. Undiluted, highly concentrated tea tree oil is sold on the market as a cosmetic. In the press, there are claims that it can help to treat acne, eczema, skin infections, wounds or warts and even some infectious diseases. Tea tree oil can, however, trigger allergies and should not be offered for sale in undiluted form according to BfR. BfR also recommends restricting the concentration of tea tree oil in cosmetics to maximum 1 %. Furthermore, products containing tea tree oil should be protected by light-proof packaging and contain antioxidants.

The BfR Cosmetics Committee has recommended guidance concentrations for the use of individual essential oils in cosmetics. According to these concentrations, products which remain on the skin should contain maximum 1 % eucalyptus oil, camphor, menthol or methyl salicylate. For products which are washed off, the recommended levels are 5 % for camphor, 4 % for menthol and 2.5 % for methyl salicylate.

The Committee of Experts on Cosmetic Products of the Council of Europe has published monographs on various plant ingredients together with recommendations for use (Plants in Cosmetics, Vol III, Potentially harmful components, which is available from the Council of Europe Publishing:

http://book.coe.int/EN/ficheouvrage.php?PAGEID=36&lang=EN&produit_aliasid=1982).