

ADVANTAGES OF PROFESSIONAL ULTRASONIC **TAJFUN** INHALER OVER OTHER METHODS OF AEROSOL THERAPY

TAJFUN ultrasonic inhaler is intended for the non-invasive therapy of respiratory diseases, i.e. for the administration of a medicinal substance to the human body in the form of aerosol, vibroaerosol or thermoaerosol, made from a solution or suspension of a drug approved for use in accordance with doctor's recommendations.

TAJFUN inhaler is used to meet medical needs consisting in effective administration of aerosol into the patient's respiratory tract, the needs which would remain unfulfilled in many cases of attempts at alternative aerosol therapy methods.

INDICATIONS FOR USE OF TAJFUN INHALER DUE TO THE SPECIAL NEEDS OF THE PATIENT NOT MET BY OTHER METHODS

- 1. Bronchial hyperreactivity**, which is accompanied by the need to **avoid distribution and supply of the so-called "cold aerosol"**.

The pMDI, pMDI + KI and flow nebulization methods (compressor nebulizers), due to the essence of physical phenomena, are characterized by a high risk of "cold aerosol" formation, while the TAJFUN inhaler generates **thermoaerosol** (heated aerosol). **This is extremely important also when inhaling infants.**

- 2. Bronchial hyperreactivity**, with the need to take special care to **avoid distribution and supply of potentially irritating substances.**

In the pMDI, pMDI + KI or DPI aerosol therapy methods, carrier substances and additives with potential irritating effects are used. The application of TAJFUN inhaler allows administration of medicinal substances without these drawbacks.



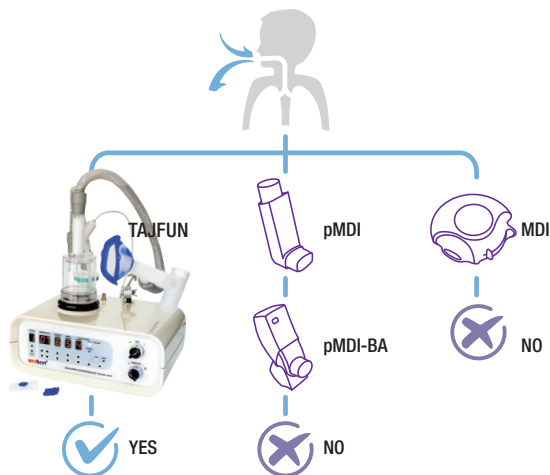
- 3. Phenomenon of obstruction** resulting in dynamic changes in bronchial geometry over time, for which single dose techniques (MDI, PMDI) are not effective.

In case of severe obstruction, single dose techniques result in deposition of the drug mainly at the "first obstacle" (eg. throat), which makes it very difficult for the drug to reach the deeper areas affected by the disease process ("beyond the first obstacle"). In inhalation treatment using TAJFUN inhaler, the distribution of the drug takes place over a certain period of time (programmable from 1 to 99 minutes). This creates unique conditions for the administration of subsequent doses of the drug to the area of the respiratory tract with improved bronchial geometry (thanks to the action of the first doses of the drug). This allows for a deeper distribution of the drug along with the duration of the procedure.

- 4. Individualization of dosage** related directly to a specific disease, its current stage and the degree of severity of changes as well as the characteristics of the patient benefiting from the therapy.

With DPI and pMDI drugs, it is very difficult to individualize the doses, because there is no way to divide the triggered dose. Only dosing based on the specific grammage of the triggered dose and its multiplicity is possible. In inhalation treatment with the use of the TAJFUN inhaler, it is possible to fully and freely dose the drug by individualising both the **concentration** of the drug solution as well as the regulated **aerosol flow** from the device and the **duration of the treatment**.

Options of changing the composition and characteristics of aerosol.



5. Administration of **specific drugs** or **specific doses of drugs**.

Many drugs are not available in the form of pMDI or DPI, while the TAJFUN inhaler meets these medical needs, giving the possibility of treatment with various substances intended for inhalation, taking into account patient's needs, in doses appropriate to the clinical situation. Special indications for nebulization occur when there is a need to administer high doses of local drugs in the respiratory tract (SABA, LAMA, GKSw, antibiotics).

6. **Poor patient compliance**. There is no relationship between the effectiveness of therapy and good patient compliance.

The treatment with TAJFUN inhaler does not require patient's cooperation to synchronize the release of the drug with the inhalation, as it is the case with alternative aerosol therapy methods. It is enough for the patient to breathe to achieve proper and effective administration of the drug to the respiratory tract. This is particularly important in people with intellectual dysfunction, unconscious patients, young children, intubated patients, patients after tracheotomy / tracheostomy.

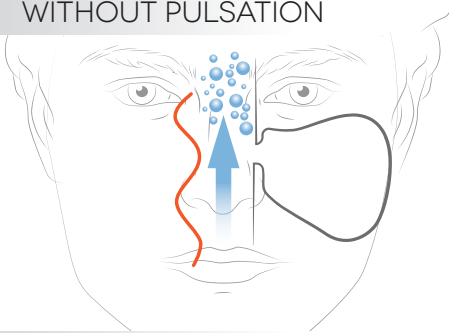
UNIQUE TAJFUN FUNCTIONS

1. VIBROAEROSOL IN OTOLARYNGOLOGY – effective in treatment of sinuses, throat and larynx – a unique function of the TAJFUN 1 inhaler.

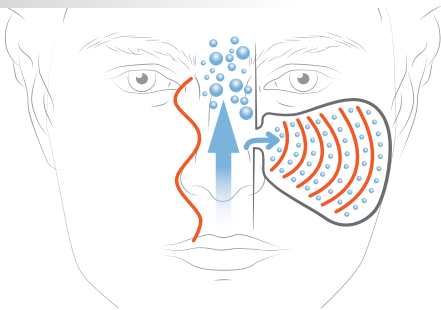
Classic aerosol therapy, commonly used in diseases of the upper respiratory tract and paranasal sinuses, has a major disadvantage, as the traditional aerosol penetrates the area of ears, nose and throat only after a long inhalation and in small doses, which significantly reduces the effectiveness of such therapy. Classic aerosol is characterized by laminar flow and is effectively deposited in the lowest parts of the respiratory tract.

In recent years, aerosol therapy of the respiratory tract has widened the area of its applications with the possibility of inhalation treatment in diseases of the upper respiratory tract thanks to the use of the so-called **vibroaerosol**. It is created as a result of applying an acoustic wave with a frequency of 100 Hz to the classic aerosol, which changes the dynamics of the aerosol particles. The acoustic

WITHOUT PULSATION



WITH PULSATION



pulsator used in the TAJFUN 1 inhaler causes these particles to become more mobile and move in different directions. As a result, the penetration capacity and sedimentation of particles increases by **50 to 500 times** without changing their size. Thanks to that phenomenon particles immediately reach hard-to-reach places like **lateral sinuses** and **frontal sinuses**, which are practically impossible to reach by classic aerosols.

Thanks to this unique feature, TAJFUN 1 inhaler is classified as a supportive therapy tool in the treatment of diseases such as:

- chronic rhinitis and pharyngitis
- chronic or acute sinusitis
- bacterial laryngitis, tracheitis and bronchitis

Moreover, inhalations used for **colds and runny nose** allow selected substances to quickly enter the bloodstream through the mucosa of the nose and throat.

These types of treatments:

- thin the mucus and mucus in the bronchi
- moisturize the upper respiratory tract
- facilitate the expectoration of secretions
- are bacteriostatic by eliminating colonized mucus
- can be bactericidal
- stimulate the body's immune system
- have a soothing effect on the mucosa
- help with sinusitis
- clear the nose

2. THERMOEROSOL – heated aerosol – an important function of both TAJFUN 1 and TAJFUN 2 inhaler.

Inflammations of the respiratory tract, especially those of viral etiology, very often lead to bronchial hyperreactivity, i.e. pathological reduction of the threshold of reaction to hyperventilation, low humidity, low temperature of inhaled air, etc. This creates problems when conducting rehabilitation by means of independent breathing exercises, autogenic training or active breathing cycle techniques. In these cases when cold aerosol is used, a contractile response of the airways can be expected. Thermoaerosols have a temperature of **28–37°C** and are even necessary for use in infants, children and adults with allergic diseases of the respiratory system and bronchial tree hyperreactivity.

TAJFUN INHALER – APPLICATION IN SPA AND SANATORIUM TREATMENTS

Ultrasonic inhalers are widely used in **SPA and sanatorium treatments**, where healing and rehabilitation treatments are used with the use of natural medicinal materials, such as **mineral waters, essential oils, vitamins, brines and pharmacological agents**. Inhalation treatments have a soothing effect on the mucosa of the respiratory organ, cleanse the respiratory tract, strengthen immunity, restore proper hydration of the mucosa, reduce

swelling, and regenerate damaged epithelium. The use of saline inhalations is indicated in particular in the treatment of **chronic rhinitis, pharyngitis and bronchitis, asthma, pneumoconiosis, emphysema, in conditions after surgical procedures in the respiratory tract.**

TAJFUN 1, due to the possibility of producing **vi-broaerosol**, is the first choice of sanatorium centers, as it offers the possibility of comprehensive treatment and rehabilitation of both upper and lower respiratory tract diseases.

Currently, ultrasonic inhalations are also used in patients with a history of **COVID-19 disease**. The Polish Ministry of Health recommends that **“post-covid” rehabilitation** should include individual inhalations with saline (halotherapy), mineral and drug inhalations with the use of mucolytic and bronchodilator drugs.

AREAS OF APPLICATION OF TAJFUN 1 INHALER IN SPA / SANATORIUM TREATMENT

TREATMENT AND REHABILITATION OF UPPER RESPIRATORY TRACT IN CASE OF:

- functional disorders of the voice organ of various etiologies
- voice emission defects
- recurrent infections of the upper respiratory tract
- vasomotor and allergic rhinitis
- chronic rhinopharyngitis
- chronic sinusitis
- subacute and chronic laryngitis

- comprehensive treatment of diseases of the upper respiratory tract, with particular emphasis on disorders of the voice organ of organic and functional origin
- rehabilitation in postoperative conditions of the larynx

TREATMENT AND REHABILITATION OF MIDDLE AND LOWER RESPIRATORY TRACT IN CASE OF:

- recurrent lower respiratory tract infections
- bronchial asthma
- pneumoconiosis
- pneumonia
- chronic bronchitis
- catarrh or atrophy of the mucosa
- chronic cough
- cystic fibrosis, where there is a need for strong hydration and thinning of the secretions in the lungs



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