

# The Nose, Throat and Ear Exam with the New Disposable Set



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## Introduction

The aim of the present study was to develop a new basic set Setorl ®to explore Nose, Throat and Ear. Setorl ®comprise of all instruments required for an ORL study. It offers many advantages over the usual instruments such as biosafety, short examination times and low price. Currently, in the outpatient offices of the otorhinolaryngology services, of public or private medical institutions, a large population of patients who are being examined for the Nose, Throat and Ear are attending the consultation. This allows us to determine their anatomic status more and / or pathological [1,2]. In these cavities we can observe how diseases are manifested, resulting from local and systemic processes through different pathogens such as: bacteria, viruses, parasites; [3,4], *Trypanosoma cruzi*, Chagas Mazza disease, *Mycobacterium tuberculosis*, TBC, *Leishmania Donovan* and *Leishmania Infantum*, Leishmaniasis, Leprosy, *Mycobacterium Leprae* [1,2], etc.

It is noteworthy that these diseases can produce different types of secretions in the Nose, Throat, Ear where microorganisms can be found [5]. Patients, who are carriers of HIV, AIDS, which present bloody secretions, should be examined with maximum safety to avoid contagion. [6-33]. Therefore, the otorhinolaryngological exploration of patients with acute and chronic processes, permanently exposes us to being in contact with different types of body fluids, which are eliminated by the Nose, Throat and Ear. These vary from the quantitative or qualitative point of view, depending on the type of pathology that affects the patient, and their evolutionary state [1-34]. Likewise, we can find secretions of different type; Mucoid, mucopurulent, bloody. These secretions always make contact with the instruments used in the consultation. Consequently, after their use, they are classified as «contaminated instruments». Therefore, these must be disinfected or better sterilized, to be reused and avoid indirect interpersonal and / or institutional contagion.

The basic instruments for conducting a otorhinolaryngological exam, consisting of ear, nasal and bajenchnula speculums, are mostly metallic and must be reconditioned for reuse. The recycling process consists of carrying out; Washing, rinsing, drying, disinfection proper, again rinsing of each instrument, containing the infecting agent, drying and / or sterilization, according to the Ministry of Public Health Resolution 387/2004 Bs. As [28]. It is noteworthy that these «reconditioning cycles», lead to a manipulation of contaminated instruments in a continuous way, by the auxiliary personnel and the doctor [35]. The need for disinfection of the instruments used in the diagnosis and care of patients, depends on the risk of infection, Spaulding describes three categories; Critical, semi-critical and non-critical. The metallic instruments, which we use in Otorhinolaryngology, according to this classification, should be classified as «semi-critical» instruments, because they are frequently in direct or indirect contact with intact mucous membranes of the patient or not, so they must receive a Disinfection, or sterilization [29,36].

The disinfection and / or sterilization [14] of contaminated instruments can be performed by different procedures and we can highlight; the physical; Heat, radiations and chemicals, such as 2% Glutaraldehyde, which is the most used in outpatient clinics to perform a high level disinfection in O.R.L. This procedure requires «cycles», which means a significant loss of time, if considered from instrumental removal, washing, cleaning, draining and immersion for twenty [20] minutes or more, rinsing again with sterile solutions and drying with material sterile. During the follow-up of the «reconditioning cycles of the metallic instruments of Otolaryngology», it has been observed that these after being reconditioned, also have the possibility of being contaminated by being exposed to the environment with vectors, microorganisms, etc., to be exposed, for It is recommended that they be covered.

The reconditioning of Otolaryngological instruments, which we use in external clinics, classified as semi-critical, can

accept high level disinfection (Glutaraldehyde at 2%), but if possible sterilization is recommended, which is safer and saves time. National and Provincial Laws of the Argentine Republic on biosafety Law 23.798) (5.32). The same, also states that «It is important to emphasize that the amount of instruments must allow adequate attention in terms of sufficiency, quality, biosafety and Professional is responsible and must determine the number of instruments that will require their consultation volume «.

The problem facing our specialty is the deficient amount of instruments in relation to the patients treated in the outpatient clinics. This requires several cycles of cleaning and sterilization, causing loss of time and lack of adequate instruments at the time of consultation [35]. If we perform an ENT exam and take as an example the Nasal Troughs we can observe, in the hemorrhages or epistaxis, that are produced by different causes: environmental conditions, dry mucous membranes, external injuries with foreign bodies, finger nails, pressure changes [34], etc., which produce in one form or another, capillary fragility, congestion, lesions, ulcerations, scabs and even perforations of the septum Nasal lesions that damage the Keisselbach or Little's area, as a bloody, bloody fluid is removed.

For example, in the examination of a case of anterior nasal nostril epistaxis, it is remarkable to observe how the metallic Nasal instrument is contaminated with bloody fluid. Instrumental contamination is repeated in the ear speculum, in the otorrhea produced by: Acute and chronic otitis media and in the lower tongue when exploring the oral cavity. According to the above, it is advisable to perform a careful control of the instruments, which is used in the examination of the nose, throat and ear. This should be strictly disinfected or sterilized by trained personnel. Therefore, we must observe how the metallic exploratory instruments of ENT are listed, and also how they are consciously fulfilled with the «continuous reconditioning cycles», in order to respect biosecurity and to serve the large population, which is presented in the outpatient clinics. The observation of the «reconditioning cycles», the «number of instruments involved», to perform a safe examination, and the «large population of attention» motivated the development of a «disposable Set» to improve the quality of medical care of our patients.

### Materials and Methods

It has been developed for the otorhinolaryngological examination, scanners of nose, throat and ear of plastic of high medical quality, with the concept of obtaining a «basic disposable set»: Setorl ®, which presents aseptic and bagged, containing the following instruments:

I. Two universal-sized ear hooks, compatible with all Otoscope models, the scanning ends of which can be of two sizes, to cover the anatomical variations of External Hearing Conductors whose observation ends are of the same diameter.

II. One-piece Nasal Scanner with a flexible V-shaped arch that provides a good functioning of the opening and closing of the exploration valves, which are adapted to the different sizes of nostrils (Figure 1).



Figure 1: Setorl ® Instrumental included.

III. Oral cavity explorer of exclusive design, of double use for children and adults with spoilers and ailerons, that allow the exploration and extraction of residues and detritus.

### Results

The Setorl ® is currently used in the examination of Throat and Ear Nose in a standardized way in different institutions and medical offices, demonstrating an excellent adaptation in patients of different ages and offering the following advantages:

I. Setorl ® provides faster patient care by having all the necessary screening instruments.

II. Setorl ® presents all the elements to perform a Nose and Throat and Ear exam, minimizing the possibility that it is deficient.

III. Setorl ® contains a dual-purpose Oral Scrub for children and adults with rake, which allows removing detritus, debris, foreign bodies and identifying different types of injuries.

IV. Setorl ®, contains two ear scanners with two size variants at their utility end (small and large), to cover the different diameters of C.A.E. The observation ends are of similar diameter, and have wings for better digital support.

V. Setorl ® contains a Nasal scanner, which was developed to be introduced in different types of Narinas according to the age group. It has a flexible bow of original «V» design.

VI. Setorl ® saves time for the doctor, since it does not need to wait for the recyclable metal instruments, to perform the care, nor to depend on the auxiliary personnel in charge of reconditioning the instruments. For example, applying Glutaraldehyde to 2% requires: washing, draining, 20 minutes immersion, rinsing, drying and reconditioning and disinfection process, which requires an approximate time of 45-60 minutes and sterilization 10 hours.

- VII. Setorl ® reduces the risk of contagion and / or injury to personnel handling the contaminated instruments.
- VIII. Setorl ® eliminates the expense of liquid disinfectants.
- IX. Setorl ® eliminates irritation of skin, mucous membranes, vomiting and possible irreversible eye damage by using disinfectant chemicals or by sterilization, etc.
- X. Setorl ® cancels the continuous reconditioning cycles of basic Otolaryngological metal instruments.
- XI. Setorl ® eliminates electrical processes, radiations, or heat for sterilization.
- XII. Setorl ® has excellent biosafety for being of a personal character, of a single use, bagged and aseptic.
- XIII. Setorl ® makes it possible to use in other specialties; Pediatrics, Allergy, Infectology, Medical Clinic and other medical areas: Operating Rooms, Intensive Care, Guards, etc.
- XIV. Setorl ®, constitutes a new biological barrier to avoid contamination of institutional infections in Hospitals, Health centers, Consultorio, etc.
- XV. Setorl ® is a guarantee of safety and protection for normal, diabetic, transplanted and immunosuppressed patients.
- XVI. Setorl ® is low cost.
- XVII. Setorl ® creates a direct relationship between the units and the volume of consultations of each professional and institution.
- XVIII. Setorl ® complies with the Digest of national and provincial laws of the Argentine Republic on Biosafety, Law 23,798 and resolution 387/2004 of the Ministry of Health of Buenos Aires.
- XIX. Setorl ®, being disposable, must be disposed of according to the norms of National Law 24.051 of Pathological Waste, published in the Official Gazette on January 17, 1992 (35) (Figure 2).



Figure 2: Spectacles of ear in two sizes (boy and big).

### Discussion

It is important to emphasize that in the chain of infection of the different transmissible diseases, where the infectious

agent, the transmission mechanism and the host, the Setorl®, interact with the indirect transmission process, to eliminate the possibility of using instrumental contaminated. The examination of Nose, Throat and Ear is performed with instruments mostly metallic, and its reuse requires a cycle of reconditioning, which depends on standardized standards and established law, which must be respected by each institution. The recycling of diagnostic instruments is a problem, which until today is in force because it is difficult to carry out, so the incorporation of this «Disposable Set», which has been developed, should be considered as a benefit for the biosafety offered to the Patients [37].

### Conclusion

- A. Awareness of the use of disposable materials in the nose, throat and ear examination is beneficial for patients, professionals and medical institutions, as it improves the quality of medical care and helps to ensure biosafety.
- B. The use in a standardized form of the Setorl ® shows day by day a good adaptation in different age groups.
- C. The Setorl® can be used by: Pediatrics, Allergy, Medical Clinic, Infectology, Surgery, Guards, Intensive Therapy, etc.
- D. The risks of implantation of germs by indirect transmission, due to the use of contaminated metallic instruments, which are not satisfactory with their reconditioning, are totally eliminated by the use of Setorl ®.
- E. Setorl ®, guarantees efficiency, quality and biosafety, by the amount of disposable instruments it possesses, packaged under strict asepsis standards.
- F. The Setorl ® establishes a direct relationship between patients and the number of consultations that professionals or institutions make [37].

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