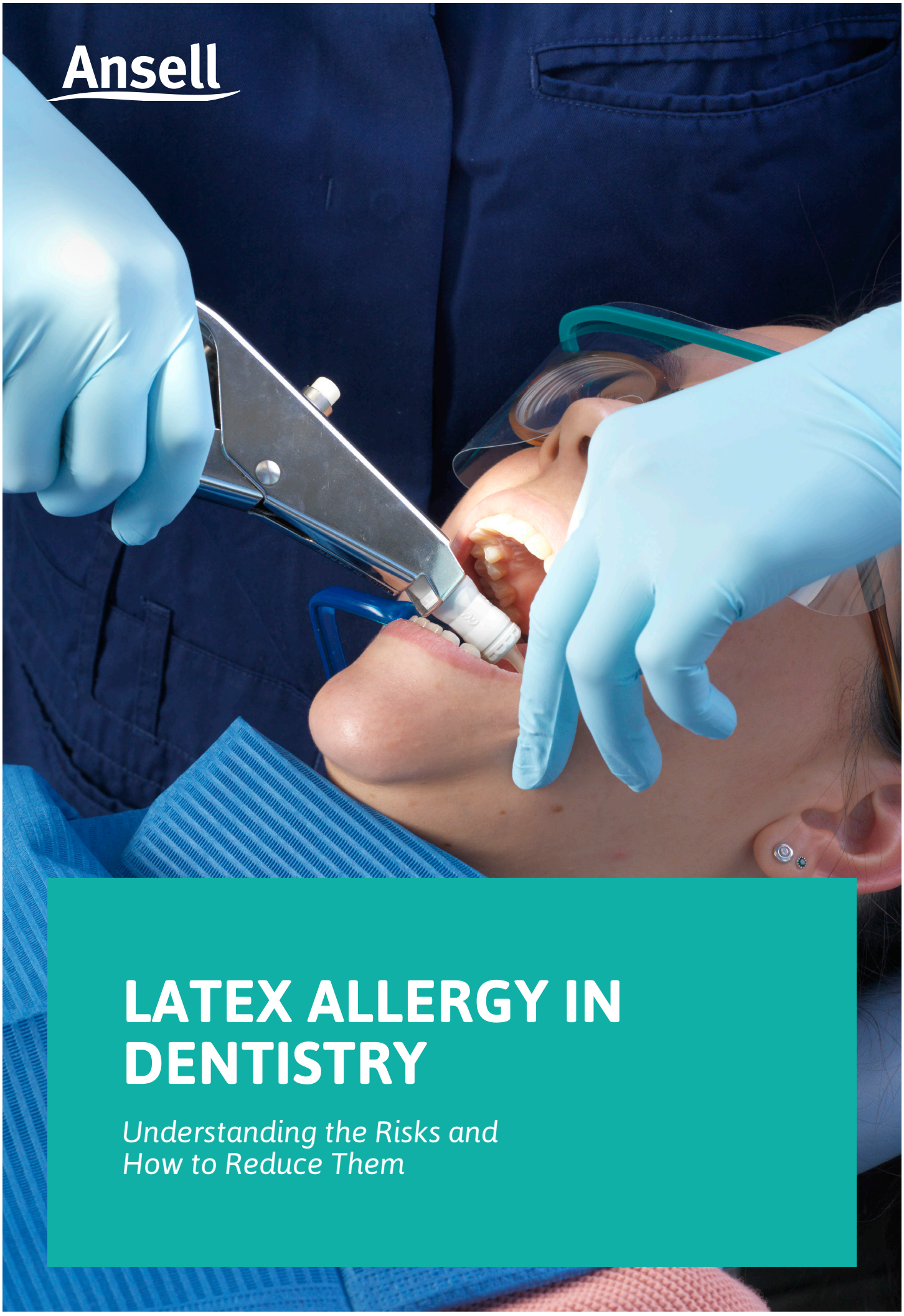


Ansell

LATEX ALLERGY IN DENTISTRY

Understanding the Risks and How to Reduce Them

NRL IN THE DENTAL PRACTICE AND BEYOND

Natural rubber latex (NRL / latex) is one of the world's most important raw material. Used to manufacture millions of consumer, industrial and medical products, it is found in items ranging from balloons and baby bottles to medical tubes, tires and mattresses. For decades, latex has also been widely employed among dental offices, most notably in the form of disposable exam gloves used to protect practitioners from infectious disease.

Latex is present throughout dental practices in various other forms too, from rubber dams and bite blocks to syringes and suction tips – and exposure can harm practitioners and patients alike. Repeat exposure to NRL is a leading cause of latex allergy. NRL contains 250 proteins of which 15 have been identified as allergenic proteins that can elicit a hypersensitive immune response.[1] **For dental practitioners, high-risk patients*, and even individuals with no prior symptoms, latex exposure can cause allergic reactions ranging from contact dermatitis to life-threatening anaphylaxis.[2]**

*Healthcare workers, Rubber industry workers, History of multiple medical/surgical procedures, History of congenital urinary anomalies and frequent catheterisation, History of allergic reactions or Atopy, History of sensitivity to certain food such as banana, avocado, chestnut and kiwifruit.

It is imperative to understand the hidden risks of latex allergy in order to better protect dental practitioners and patients. Here we take a closer look at latex use and routes of exposure in the dental practice, as well as the effects and prevalence of latex hypersensitivity among provider and patient populations. By opting for quality, high performance powder free latex gloves alternatives, dental practices can reduce costs associated with missed days of work, workers' compensation and patient complications that may arise due to latex allergy. Ultimately, reducing latex in the dental practice can improve practitioners' health and peace of mind while supporting patients' positive outcomes.

DEFINING LATEX ALLERGY

The clinical reactions to latex exposure include:

1. **Irritant contact dermatitis (ICD)** - is the most common reaction to latex products and is not a true allergic response. ICD is a red, itchy rash that can be the result of frequent hand washing, incomplete drying and friction irritation from donning and doffing gloves. Damage to the skin from ICD can increase absorption of NRL proteins and latex allergy.

2. **Allergic contact dermatitis (ACD)** or delayed hypersensitivity (Type IV) - is an immune response to the chemicals and additives used in the manufacturing of NRL gloves. Erythema, itching and even blisters can occur and may last for weeks.

3. **Type I hypersensitivity (Latex Allergy)** - is an IgE-mediated, immediate type reaction to one or more proteins in NRL. It is mediated by mast cell histamine release and typically involves a systemic reaction.[4] While rare, symptoms occur within two to three minutes of contact and can range from local allergy signs, dizziness, laryngeal swelling, palpitation, bronchospasm, low blood pressure, anaphylaxis and death in extreme cases.[5]

NRL at a Glance

12 MILLION TONS
produced annually [1]

FOUND IN > 40,000
consumer products [3]

Contains 15 PROVEN ALLERGENIC PROTEINS [1]

1,000,000 +
used in millions of goods [1]

Air beds, toothbrushes, chewing gum, swim caps, rubber boots, vial stoppers, catheters, rubber balls, erasers, rubber bands, duct tape, hair extensions, wheelchair cushions, crutches, adhesive bandages, food packaging

As an individual's latex exposure continues, sensitisation can deteriorate and become latex allergy. Therefore, the risk of developing latex hypersensitivity is greater among populations with frequent latex contact such as dental and healthcare workers, children requiring multiple surgical or medical procedures, hairdressers, gardeners, researchers in biology and chemistry laboratories and workers in the rubber industry.[6]

ROUTES OF EXPOSURE

The development of latex allergies generally happens from direct skin contact with latex-derived products.[1] Other routes of exposure include contact via mucous membranes, the vascular system and inhalation.[7] Inhalation occurs when the cornstarch inside powdered gloves binds to latex allergens and becomes aerosolised during donning. Airborne exposure can result in contact dermatitis as well as a Type I response.

THE LATEX ALLERGY OUTBREAK

Latex allergy skyrocketed among dental practitioners and other healthcare workers in the late 1980s and 1990s[1], after universal precautions or standard precautions where abbreviations have been used for infection control were first recommended by the Centers for Disease Control (CDC). Universal precautions or standard precautions where abbreviations have been used, called for providers to treat all patients as if they are known to be infected with HIV, Hepatitis B and other bloodborne pathogens.

Following universal precautions, standard precautions and similar precautions worldwide, healthcare workers widely adopted the use of personal protective equipment such as gloves, protective eye-wear and masks to control exposure to saliva and blood. Since then, millions of latex hypersensitive individuals have been identified.[1]

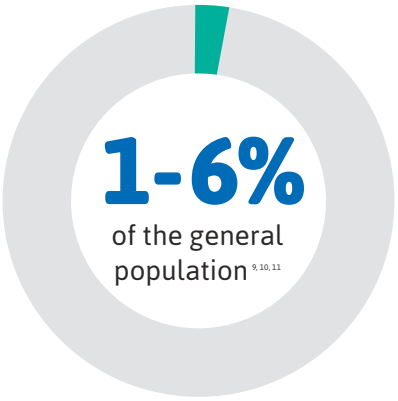
PREVALENCE OF LATEX ALLERGY AMONG DENTAL PRACTITIONERS AND PATIENTS

Healthcare workers including dentists and dental hygienists are the most affected occupational group for latex allergy due to their frequent donning and removal of latex gloves.[1] Data shows that up to 10% of healthcare workers are diagnosed with latex allergy, and it is believed this figure may underrepresent affected populations.[3] **Due to their frequent repeat exposure, all dental professionals who use latex gloves should be considered high risk for allergic reaction.[6]**

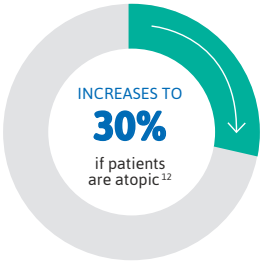
Even as many dental practices transition away from latex gloves, latex allergy remains a highly prevalent occupational health hazard among practitioners. That is, in part, because latex is present not only in gloves but also in common dental products such as dental dams, bite blocks, mixing bowls, syringes, suction tips, oxygen masks, adhesive bandages and more (see chart 1).[7] The frequency with which dental practitioners make contact with additional latex products may not be as high as the exposure to allergens from a latex glove.

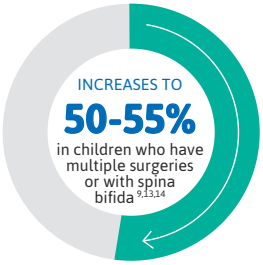
Only 100% non-latex healthcare facilities can eliminate the risk of latex allergy

Latex Sensitisation Rates



Patients





DECREASES TO
5%
when exposed only to non-latex materials [14]

Professionals

Latex specific IgE DECREASED IN
88%
of sensitized individuals when exposed only to non-latex materials [16]

In contrast, only 4% of the world's general population is believed to be latex allergic.[1] Among susceptible patients (i.e. individuals with a history of multiple surgeries, spina bifida, atopy and certain food allergies), that figure exceeds 7%.[1] Because repeat exposure to latex allergens in dental practice is known to elicit adverse immune responses, some susceptible patients' access to dental care is limited.

WHAT TO LOOK FOR IN NON-LATEX GLOVES

Given the hidden dangers and high risks of Type I hypersensitivity in the dental practice, transitioning to synthetic hand protection is vital. Gloves constructed of nitrile and neoprene eliminate the risk of causing Type I latex allergy. Synthetic glove offerings differ widely, though, and it is important to evaluate their unique attributes to ensure practitioners are afforded the strength, comfort and tactile sensitivity required in wet and dry applications alike.

1. **Seek gloves that are certified to enhance ergonomic performance**
2. **Ergonomics help support dental practitioners' comfort, health and productivity.**
3. **Combination of specialised formulations and innovative designs is key to:**
    - **Support natural muscle movement**
    - **Alleviate muscle strain and tension**
    - **Reduce risk of ergonomic stress and injury**

ANSELL SOLUTIONS

Ansell's MICRO-TOUCH® DENTA-GLOVE® nitrile and neoprene solutions feature an unsurpassed combination of attributes designed for the dental professional. The MICRO-TOUCH® DENTA-GLOVE® Blue Nitrile utilises innovative film technology that is proven to feel 2.5 times more comfortable than similar weight nitrile gloves. The robust strength of the DENTA-GLOVE® Blue Nitrile helps prevent rips and tears even among sharp instruments. Fully textured fingers ensure a secure, reliable grip.

The MICRO-TOUCH® DENTA-GLOVE® Green Neoprene is our strongest and most durable lightweight glove. Its thin, stretchy film delivers superior tactile sensitivity and comfort while textured fingers ensure excellent grip, even in wet conditions.

Both solutions feature an AQL level of 1.5, which virtually ensures freedom from pinholes for reliable protection from infectious substances. They also feature Ansell's ERGOFORM™ Ergonomic Design Technology to reduce hand fatigue and support musculoskeletal health for comfortable long-term wear. MICRO-TOUCH® DENTA-GLOVE® Blue Nitrile and MICRO-TOUCH® DENTA-GLOVE® Green Neoprene are powder-free and meet ASTM and EN standards for dental use.

Latex Allergy Reaction Vary

- ANAPHYLACTIC SHOCK AND DEATH (RARE)
- SEVERE SYSTEMIC REACTIONS (SWELLING OF THE FACE, LIPS & AIRWAYS)
- SHORTNESS OF BREATH
- WHEEZING
- COUGHING
- ASTHMATIC REACTIONS
- NOSE, SINUS, AND EYE SYMPTOMS
- LOCALISED REDNESS AND RASH

Latex Allergy Prevalence

13 MILLION
PEOPLE WORLDWIDE [8]

1.5 MILLION
PEOPLE IN THE U.S. [8]

>9%
OF HEALTHCARE WORKERS [1]

>7%
OF SUSCEPTIBLE PATIENTS [1]

4%
OF GENERAL POPULATION [1]

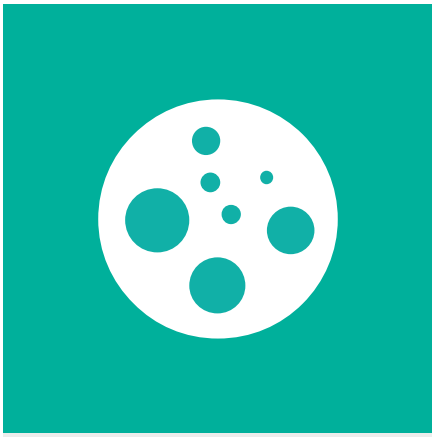
DENTAL AND SURGICAL HAND PROTECTION SOLUTIONS

SYNTHETIC NON-LATEX EXAM SOLUTIONS	MICRO-TOUCH® DENTA-GLOVE® Blue Nitrile	MICRO-TOUCH® DENTA-GLOVE® Green Neoprene
COLOR	Blue Nitrile	Green
		
COMFORT	√ √ √	√ √ √
FIT	√ √	√ √
TACTILITY	√ √ √	√ √ √
STRENGTH	√ √	√ √ √
WET GRIP	√ √	√ √ √
DAMP DONNING	√ √	√ √ √
IDEAL FOR INTERORAL PROCEDURES	√ √ √	√ √ √
TECHNOLOGIES	ERGOFORM™ Ergonomic Design Technology	ERGOFORM™ Ergonomic Design Technology
KEY FEATURES & BENEFITS	Strong, soft nitrile with good grip. ERGOFORM™ Design Technology reduces muscle strain.	Strong, lightweight design for amazing tactile sensitivity with a great wet grip. ERGOFORM™ Design Technology reduces muscle strain.

PRODUCTS THAT MAY CONTAIN LATEX IN A DENTAL PRACTICE

- Adhesive bandages and tape
- Air or water syringe tips
- Amalgam carriers
- Anesthetic masks
- Bite blocks
- Gloves
- Impression materials
- Irrigation tubing
- IV tubing and bags
- Mixing bowls
- Operative masks with rubber ties
- Orthodontic rubber bands
- Oxygen masks
- Polishing discs
- Prophy cups
- Rubber dams
- Suction tips, suction tubing
- Syringes

Healthcare workers including dentists, physicians and clinicians are the most affected occupational group for latex sensitisation and allergy due to their frequent use of latex gloves.



NRL contains 15 proven allergenic proteins which can elicit a hypersensitive immune response, and repeat exposure to NRL is a leading cause of latex sensitisation and allergy.

Even as many dental practices transition away from latex gloves, latex sensitisation and allergy remains a highly prevalent occupational health hazard among practitioners.

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