

McCord Provincial Eye Hospital

Eye2eyE

An initiative for staff education from McCord Provincial Eye Hospital

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APRIL 2025

VERNAL KERATO CONJUNCTIVITIS (VKC)



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Special points of interest:

- DEFINING VKC
- SIGNS & SYMPTOMS
- SEVERITY / STAGES OF VKC
- TREATMENT
- REFERRAL PROCESS
- DIETARY INFORMATION
- PATIENT INFORMATION PAMPHLETS to print as needed

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Notes from Management

DR S.R. Naidoo (Acting CEO)

Vernal-kerato conjunctivitis (VKC) remains a significant challenge in ophthalmology, particularly in paediatric and adolescent patients. This recurrent and often debilitating allergic eye condition not only affects vision and quality of life but also poses a risk of long-term complications, including corneal damage and keratoconus.

This publication serves as a resource, providing insights into the pathophysiology, diagnosis and treatment of VKC as well as raising awareness among healthcare providers and caregivers.

It is our hope that this publication will serve as an invaluable reference for clinicians and students alike, fostering a deeper understanding of VKC.

Well done to Sr N. Kemp and the team who envisioned this publication. You truly inspire us!

Matron L. Ntonintshi (Deputy Nursing Manager)

The prevalence of VKC in children seen at Mccord Provincial Eye Hospital is high, especially in male individuals commonly over the age of 5 years and is usually resolved by puberty. Associated factors include exposure to dust, personal and family history, Vitamin D3 deficiency and HIV. The mixed form of VKC is the most frequent form seen and conjunctival pigmentation might be an early diagnostic sign.

Childhood screening programs for VKC should be established to reduce the morbidity caused by VKC and improve quality of life, thus decreasing school absenteeism that is seen in these cohort of patients. Education is crucial and this issue and subsequent issues will assist nurses especially in the clinics to manage their patients with eye conditions effectively.

Awareness plays a pivotal role in reducing the negative impact and decrease complications of this treatable condition. I urge all nurse to study this edition, teach other nurse, patients and the community at large.

VKC education should include online learning resources and tools for educators, service providers and families to support individuals with VKC. Keeping on top of treatment is the key to living optimally with this condition. The child and parents must understand why treatment is important for keeping their eyes healthy so they can do the things they love.

Project Co-ordinator: Sr N. Kemp (Ophthalmic Nurse OPD MPEH)

Eye2eyE is an initiative that is being implemented to encourage, enlighten and empower clinicians within the field of ophthalmology. Upgrading knowledge and skills within our ophthalmology department is our key aim, in order to provide holistic and competent eye care to our patients.

We envision this publication to be used as a learning tool for MPEH staff as well as a guideline to clinicians referring to MPEH from outlying clinics, government and private institutions.

A heartfelt thank you goes out to our multi-disciplinary team for their support and contribution towards this new publication.

MPEH VISION, MISSION & OUR OBJECTIVE

VISION:

Optimal Eye Health for all persons in Kwa Zulu Natal.

MISSION:

To provide a sustainable and comprehensive eye health care services at a Provincial level through Batho Pele principles with universal access to all persons living in KZN.

OBJECTIVE OF THE Eye2eyE PUBLICATION:

- To create awareness of eye conditions and treatment of these conditions at MPEH, amongst staff, referral clinicians and private clinicians.
- To upgrade ophthalmic skills and knowledge amongst clinicians.
- To encourage clinicians to use Eye2eyE as a learning tool and guideline to diagnose and treat eye conditions competently.













McCord Provincial Eye Hospital was opened in April 2025 to provide eye services to the province. The services we provide are:

NEW patients referred to MPEH

Screening:

Diabetic retinopathy

Glaucoma

Cataract

Minor procedures:

Foreign body removal Probing and syringing

I&D chalazion

Optometry services:

Paediatric cycloplegic refraction

Adult refraction

Treatment:

Allergic eye disease

Dry eye

Primary Eye Care Unit (PECU)

Anterior segment

Keratitis

Corneal Graft

Amnion graft

Keratoconus

Pterygium

Ocular surface tumors

Crosslinking

Cataract

High volume unit: simple

Academic theatres: complex

MSIC

Phaco-emulsification

Glaucoma

Adult

Paediatric

Laser

Cyclophocoagulation

Iridotomy

SLT

Angle surgery

Trabeculectomy

Tube-shunt surgery

Oculo-plastics

Eyelid surgery

Orbital surgery

Orbital implants

Evisceration

Enucleation

Exenteration

Ocular inflammation

Medical management of Ocular surface

inflammation and Uveitis

Lasers

Yag laser

Argon laser

Diode laser

SLT laser

Paediatrics

Strabismus & amblyopia

Cataract

ROP screening

Paediatric cataract

Screening for Retinoblastoma

Medical retina

Diabetic retinopathy management

Argon Laser

Avastin injection

Surgical retina

Specialist clinic for opinion

Optometry

Refraction for Adults & Paediatrics

Contact lens clinic

Low vision clinic





KZN Department of Health

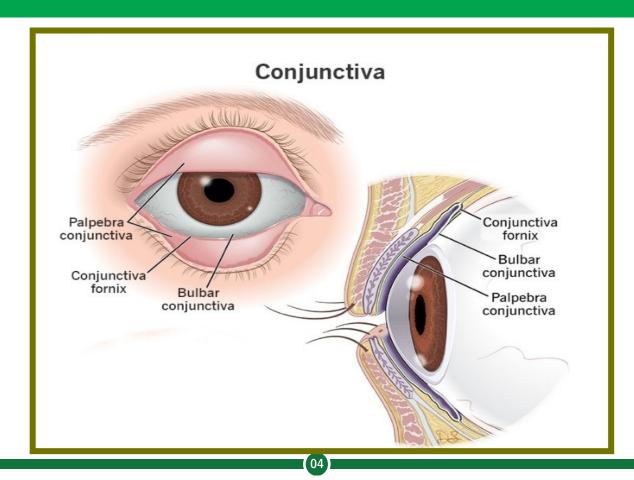




Definitions

- Allergy: is an immune system overreaction to a substance, called an allergen, eg. Pollen, dust, pollutants in the environment, familial.
- Conjunctiva: thin film membrane that covers inner eyelids (upper and lower).
- **Palpebral:** covers upper and lower inner eyelids.
- Bulbar: covers the sclera (white of the eye) up until the cornea.
- Conjunctiva does not cover the cornea, it stops at the cornea, called the *limbal area*.
- **Cornea**: clear, dome-shaped, front layer of the eye, that allows light to enter the eye and helps focus vision.
- Limbitis: inflammation of the limbal area.
- **Neovascularization:** process of new blood vessels forming in the body.
- **Keratoconus:** is when the dome shaped cornea, that allows light into the eye, becomes thinned out and changes its shape and bulges out like a cone. This then causes the light rays to bend differently causing blurry vision.

Anatomy of the Eye











KZN Department of Health

VKC Causes & Treatment

Also known as : Spring Catarrh / allergic conjunctivitis / Atopic conjunctivitis

These are types of allergic eye conditions.

What causes it:

- If you or your family have allergic diseases such as hay fever, asthma, eczema, wheezing or sinusitis
- Allergic diseases happen when the immune system reacts to harmless substances like dust, pollen or pollutants in the air.
- Occurs mostly during Spring and Summer seasons.
- Prevalent in hot and dry climates

Treatment of VKC:

- Majority occur between the ages of 3 to 25 years and treatment is required once VKC has been diagnosed.
- Treatment is prescribed to prevent the child from rubbing the eyes and causing further damage to the cornea and resulting in vision loss.
- VKC can resolve spontaneously at puberty.
- Allergic conjunctivitis (AKC) tends to continue from 25 years onwards and depends on environmental conditions.

A special note for children:

Obesity and Allergic Conditions in Children

- o Emerging evidence suggests a link between obesity and allergic diseases in children, including rhinitis and dermatitis.
- o <u>Maintaining a healthy weight</u> through a balanced diet with minimal processed foods and refined sugars may help manage allergic inflammation. Ensure growth monitoring and adjust diet to ensure all **growth and development needs** are met while incorporating allergy-friendly nutrient-rich foods.
- o **Avoiding highly processed, pro-inflammatory foods** and emphasizing whole, minimally processed foods to support immune health.

For families open to plant-based meals, **well-planned vegetarian options** can provide beneficial nutrients while reducing inflammatory triggers.





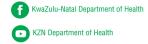






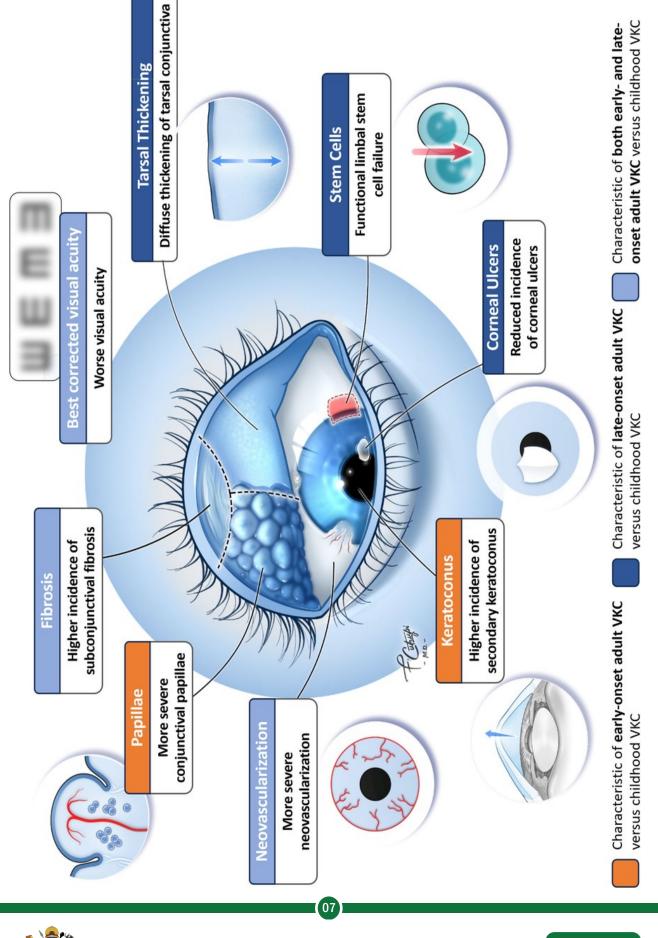
Moderate swollen eyelids swollen eyelids y, tearing, white gy narge wnish discolora- in colour r r fr f	Script by Opnthalmologist only
Moderate Red, swollen eyelids Itchy, tearing, white stringy discharge Brownish discoloration Red in colour Clear Present 2nd line treatment Script by PHC	Script by PHC Prof/nurse District level institutions Script by Ophthalmic Nurse
Clear eyes Itchy, tearing Clear Clear Clear Nil Nil Script by PHC Script by PHC	Script by PHC Prof/nurse Script by Ophthalmic Nurse
Clear eyes Itchy Clear Clear Clear Clear Nil Nil Script by PHC Script by PHC	Script by PHC Prof/nurse Script by Ophthal- mic Nurse
Classification Picture Signs Symptoms Conjunctiva Cornea Limbitis Treatment plan	



















Pharmacy Corner

	MEDICATION	EXAMPLES	IMAGE OF EYE DROPS
		(in use at DoH)	
1 st line treatment LOCAL CLINICS	Artificial tears (preservative-free) for lubrication and symptomatic relief (for older patients) Mast cell stabilizers: Sodium cromoglycate eye drops to prevent histamine release (results seen over long term use) Side effects: Stinging, burning sensation, in rare cases	1. ALLERGEX TAB 2. ALLERGEX EYE DROPS 3. OXYLIN EYE DROPS The above eye drops should be used as short term treatment, ie.one month or less	Allergex* EYE CHOPS We dis variging was rise, antiquests of 15 mil 15
and .			
2 nd line treatment PHC / Ophthalmic Nurse /DISTRICT LEVEL	Antihistamines: Olopatadine eye drops for itch relief Dual-action agents (mast cell stabilizer + antihistamine): Olopatadine for both acute and preventive effects. Cide officials:	PATANOL eye drops 2. SPEASATEAR EYE DROPS 3. FML (AFTER FUNDOSCOPY TO	PATAIOL Indicators of the second of the seco
	 Side effects: Burning, stinging sensation Dry eyes Blurry vision In rare cases 	RULE OUT DISC CHANGES)	ALLERCAN MARIENT FILL CODENSIDED CODENSIDED COSSUSPENSE STERREL 5 ml
3 rd line treatment OPHTHALMIC DOCTORS	 Topical corticosteroids: Fluorometholone for short-term use to control inflammation (under specialist supervision to avoid complications like cataracts and glaucoma) Calcineurin inhibitors: Cyclosporine eye drops for steroid-sparing, long-term control in refractory cases Side effects: Prolonged use may cause: Cataracts Glaucoma Increased risk of eye infections 	 FML eye drops Maxitrol ointment Patanol eyedrops Speasatear eyedrops 	ALLERCAN JANSANCE S mi PATANOL OUR MANAGEMENT S mi PATANOL OU
Management of corneal complications	Antibiotics (if secondary bacterial infection is suspected) Surgical intervention for persistent corneal shield ulcers		DISCLAIMER: Medication list correct at time of publication
- P46		/	











VKC Nutritional Recommendations

1. <u>Micronutrient Support for Immune Modulation</u>

VITAMIN	ACTION	FOODS
A, D, E	Support immune tolerance and reduce allergic inflammation. Supplementation may aid in symptom management.	Practically the recommendation would be to include more vegetables and fruits which are naturally high in vitamins.
А	Other foods high in immune modulating nutrients	Liver, (chicken/beef), egg yolks, cod liver oil, carrots, sweet potatoes, spinach, kale, pumpkin, red peppers and apricots.
D	Besides natural light on the skin, it can be found in the following foods	Fatty fish (salmon, mackerel, sardines), egg yolks, mushrooms (that have been exposed to sunlight).
E	Support immune tolerance and reduce allergic inflammation.	Nuts and seeds (almond, sunflower seeds, hazelnuts), Oils (wheat germ oil, sunflower oil, olive oil) Vegetables (spinach, avocado, and broccoli)
Iron & Zinc	Essential for immune balance; deficiencies can trigger allergic responses. Ensuring adequate intake through food or supplements is crucial.	Iron is found naturally in meats (specifically red meats and organ meats) but is also found in these non-animal products such as lentils, tofu, quinoa, fortified cereals, spinach and pumpkin seeds. Zinc is found in meat as well as lentils, chickpeas and cashew nuts.
Selenium & Copper	Play a role in reducing inflammation and improving antioxidant defenses.	Animal sources of selenium is found in meats mostly and in non- animal sources Brazil nuts, brown rice, whole wheat, sunflower seeds, mushrooms and oats. Food sources of copper include meats and a variety of seeds and nuts.

2. Dietary Strategies to Reduce Inflammation

- O A **plant-based diet** rich in vegetables, fruits, whole grains, and legumes can reduce systemic inflammation and improve immune function.
- O Incorporating **flavonoid-rich foods** (e.g., berries, apples, onions and tea) supports antioxidant and anti-inflammatory pathways beneficial for allergic conditions.

3. Weight Management and Allergy Control

- O Obesity is linked to worsened allergic responses. Weight loss via a **balanced**, **nutrient-dense diet** (low in processed foods and saturated fats) has been shown to improve allergic symptoms. Processed foods include meats such as polony, viennas, wors, hams/cured meats, sausages but also includes chips, takeaways, sweets, ready to eat meals, instant noodles, cereals and packaged snacks to mention a few.
- O Energy intake moderation and ensuring adequate fibre intake help regulate immune responses.

4. Probiotic and Gut Health Support

- O A diverse gut microbiome positively impacts immune tolerance to allergens.
- O Including **fermented foods** (e.g., yogurt, amasi, kefir, kombucha, sauerkraut kimchi, miso) and fibre-rich foods supports gut health and reduces inflammation.

5. Potential Dietary Interventions

O Exploring plant-based diets as a complementary approach to medical treatment, focusing on nutrient-dense, anti-inflammatory foods.

Further clinical research is needed, but a **diet low in pro-inflammatory foods** (refined sugars, processed foods, and trans fats) may help alleviate symptoms.









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Acknowledgements

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- OM S.M. Naidoo (Ops Manager-Ward)
- N. Ndlovu (HAST team)
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PATIENT HEALTH EDUCATION FOR VKC

VKC is a chronic condition of an eye allergy that will continue from childhood to over 21 years of age.

Causes:

- Family history of allergies, eg. asthma, eczema, sinusitis
- Exposure to pollen, dust, pollutants
- Hot, dry and windy climates (when weather changes)

Signs & Symptoms:

- Intense itchiness
- Tearing
- Light sensitivity
- Gritty feeling
- Thick, stringy mucus discharge

HOW TO TREAT VKC AT HOME:

- 1. Always ensure that chronic allergies are treated, along with VKC. If not treated then VKC will continue and symptoms will worsen.
- 2. Avoid any allergens, eg. Pollen, dust and house dust mites, if possible.
- 3. Cool compresses: apply cool, damp cloth to help soothe itchiness and discomfort.
- 4. Avoid exposure to sunlight over long periods.
- 5. Use of sunglasses and sun hat when going into the sun is advised.
- 6. Avoid rubbing the eyes to prevent worsening of the condition
- 7. Manage house dust mites by regularly cleaning bedding, pillows and beds.
- 8. Use prescribed eye drops to help with symptoms
- 9. Always keep doctors' appointments, in order to check progress of the condition .

Nutritional Considerations and Recommendations for VKC

Diet can be an important tool to manage VKC. For both adults and children a diet rich in vegetables and fruits can provide necessary vitamins, nutrients and fibre to support the immune system and ensure good gut health and reduce inflammation within the body.

Other important sources of good nutrition are legumes (lentils, chickpeas and split peas) as they are high in fibre and other beneficial nutrients. Reducing the intake of processed foods found in sugary beverages and foods as well as processed meats (polony, viennas, wors, ham etc) and takeaways will also allow symptom alleviation, weight management assistance and immunity improvement.

Managing weight in both adults and children is important and following a healthy eating plan. Speak to a nutrition advisor or dietitian in your healthcare facility for more advice.

Follow good hand hygiene techniques!!!

A special note for children:

1. Obesity and Allergic Conditions in Children

Emerging evidence suggests a link between obesity and allergic diseases in children, including rhinitis and dermatitis.

- 2. **Maintaining a healthy weight** through a balanced diet with minimal processed foods and refined sugars may help manage allergic inflammation. Ensure growth monitoring and adjust diet to ensure all **growth and development needs** are met while incorporating allergy-friendly nutrient-rich foods.
- 3. Avoiding **highly processed, pro-inflammatory foods** and emphasizing whole, minimally processed foods to support immune health.



Vernal Kerato-Conjunctivitis (VKC)

Okumele kwaziwe yiziguli ngo VKC

I VKC yisifo esingukuzwela okungekuhle kweso esingaqala ebunganeni kuze kube sebudaleni

Izimbangela zalesisifo

Kungaba ukudluliselana emndenini uma kukhona owake waba naso i.e. isifo samaphaphu, ukuluma kwesikhumba Kanye nesifo sokuluma kwamakhala

Ukuba sendaweni enempova, uthuli, nokungcola

Ukushisa, ukoma nomoya wesimo sezulu (uma kushintsha isimo sezulu)

Izimpawu okumele uziqaphele

Ukuluma okungapheli emehlweni

Ukuphuma kwezinyembezi

Ukuzwela kwamehlo uma ebona ukukhanya

Ukuzwa ngathi amehlo anenhlabathi

Ukukhihliza ubhici olushubile

Uyelapha kanjani i-VKC ekhaya

- 1.Qiniseka ukuthi ama-allergy uyawelapha. Uma ungayelaphi i-VKC iqhubeka kakhulu kunakuqala
- 2. Gwema izinto ezinto ezingabangela ukuba isifo sivuke; indawo enosi kumbe izintuli
- 3. Cwilisa indwangu ehlanzekile emanzini abandayo, uyibeke emehlweni sakuthoba, isiza ukwehlisa ukuluma kwamehlo Kanye nokuphazamiseka kwamehlo.
- 4. Ukuba selangeni isikhathi eside
- 5. Faka izibuko zelanga Kanye nesigqoko selanga uma uzohamba elangeni
- 6. Gwema ukuhlikihla amehlo, ukuvikela ukuqhubekela phambili kwesimo.
- 7. Hlanza indlu ukususa uthuli ngokushintsha imicamelo nezingubo zokulala

Izincomo zokudla okunomsoco ongakudla uma une-VKC

Indlela odla ngayo iyisikhali esibalulekile ukulawula isifo. Kwabadala nabancane ukudla okunezithelo eziningi kunganika izakhamzimba ezidingekayo emzimbeni, umsoco Kanye ne-fibre ukulekelela amasosha omzimba nokuqinisa isimo sempilo kwehle nokuvuvukala okungaphakathi emzimbeni.

Eminye imithombo ebalulekile yomsoco amalentela, uphizi ngezinhlobo zawo, njengalokhu zine-fibre eningi Kanye nomsoco. Ukunciphisa izidlo ezilondoloziwe ezitholakala eziphuzweni ezinoshukela nasekudleni Kanye nasezinyameni ezithakiwe njengo-polony, ama-vienna, i-wors, ne-ham, Kanye nokuthengwayo okuyisipesheli, kunganciphisa ukugula, kulekelele ekwehliseni umzimba futhi kuqinise amasosha omzimba

Kubalulekile kwabadala nabancane ukugcina isisindo somzimba sisesimweni esifanelekile, nokulandela indlela yokudla okunempilo.

Khulumisana nomeluleki wezokudla esikhungweni sezempilo ngezeluleko ezingeziwe

Okubalulekile Ngezingane

Ukukhuluphala kanye Nezimo Zama-Allergy Ezinganeni

Ubufakazi obuvelayo buveza ukuxhumana phakathi kokukhuluphala kanye nezifo ze-allergy ezinganeni, okufaka ukuvuvukala kothwethwesi olusemakhaleni okubanga ukucinana (rhinitis), kanye nokuvuvukala kwesikhumba okubanga umqubuko, bese kuluma futhi kome (dermatitis).

Ukugcina isisindo somzimba esinempilo ngokudla okufanele nokulingene futhi unciphise izidlo ezicolisisiwe kanye noshukela ocolisisiwe kungasiza ukulawula ukuvuvukala okudalwa ngama-allergy. Qinisekisa ukuqapha ukukula kanye nokuhlela ukudla ukuqinisekisa ukuthi zonke **izidingo zokukhula nokuthuthuka** ngokufaka izidlo ezinomsoco nezilwa nama-allergy.

Gwema **izidlo ezicolisiswe kakhulu, futhi nezikhuthaza ukuvuvukala** futhi ugcizelele izidlo eziphelele, nezicolisiswe kancane ukuphasa amasosha omzimba.