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Making the pharmacy work for you and your clients

Lorraine Osman

Merchandising in the pharmacy

We often hear people speaking about merchandising, but what do they mean? Is it just another way of advertising products?

In simple terms, merchandising involves how products are displayed in order to influence consumers to buy those products. In general, the display should be eye-catching, attractive and should communicate the value of buying the product to the consumer.

It goes without saying that cleanliness in the pharmacy is crucial – no dust or old labels on the shelves or the products are permitted because that creates the impression that no one cares.

Even the layout of the pharmacy is important

If the customer can't find her (or his!) way to the dispensary, or the vitamins, or whatever it is that is needed, the customer will turn around and walk out of the pharmacy. Good merchandising starts with a logical layout and good signage.

Here's a thought: why do you think the dispensary is always at the back of the pharmacy? Mm, when I walk to the back, I'm reminded that I need toothpaste, and that's a good price for shampoo, and I may as well get some vitamins when I pass them!

And if I'm pushing a baby in a pram, I hope the aisles are wide enough so that I can easily pass through them, and the baby can't grab anything off the shelves.

Stocking the shelves logically

Although your pharmacist or pharmacy owner will have designed the pharmacy layout, the pharmacist's assistant will probably be responsible for maintaining the stock in the dispensary, including displaying products for patient self-care. These include medicines that must be sold under the supervision of the pharmacist, such as schedule 1 and schedule 2 medicines, but may include unscheduled medicines and unrelated products such as nutritional supplements.

As far as the shelves to which customers have direct access are concerned, don't forget that most shoppers are women! So eye-level for them is lower than eye-level for men, and they will not be

able to reach as high up as men can. Some grocery stores make the mistake of stacking goods so high that most women cannot reach the highest shelves – hopefully, pharmacies don't make that mistake too!

It also makes sense to pack related products near each other – like skincare and make-up. And remember that having testers for these products also encourages shoppers to linger and think about the products.

Obviously, if you have a mass display, it's important to make sure that the shelf or shelves remain fully stocked – gaps in the stock will not make a good impression on the customer.

Seasonal displays

In winter, we automatically think about colds and flu – in the dispensary, we usually arrange the medicines in groups according to the indication and active ingredients. There are other products that consumers may be interested in buying that can be recommended or placed strategically to remind them, such as tissues and vitamins.

We must also remember other products for which the need is likely to increase in winter, such as moisturisers, hand cream and lip balm.

Summer brings different challenges. In particular, our lovely sunshine can become a problem if we don't protect our skin from its dangers. This provides an opportunity for the creative assistant to build an attractive display to remind customers in the pharmacy of the need to protect themselves from the sun.

Summer is also often the time for diarrhoea and hayfever, so these products, even if stocked in the dispensary, should be highly visible to the consumer. Insect repellents and sunglasses should also be in prominent positions.

Other complementary sales

When dispensing prescriptions, the pharmacist will be aware of medication that can deplete nutrients, which may be sold as supplements. Some of them are well known, e.g., some older antibiotics are supplemented with probiotics and B vitamins.

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Think about patients who have diabetes – there are so many additional items that are needed in diabetes management. These include glucose meters and test strips. Some patients will require insulin syringes and pen needles. Sugar-free candies, orthopaedic footwear and compression socks can also make useful ancillary products.

The bottom line

It's worth making your customers' shopping experience a fulfilling and easy experience – you need their support to continue in business.

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Haemorrhoids

Haemorrhoids, also known as piles, are large and very painful clusters of blood vessels located in the rectal area. Haemorrhoids are divided into two main groups. External (a bulge on the side of the anus) and internal (in the lower part of the rectum). Many patients suffer from pain caused by anal fissures, which are caused by haemorrhoids.

Some of the most common reasons for developing piles:

- Exertion during defecation, usually caused by constipation.
- During pregnancy – blood volume increases, while progesterone weakens muscles, the uterus is heavy, and there is pressure on the lower vena cava while lying on the back.

- Coughing and vomiting increase intra-abdominal pressure, which produces pressure on veins where the blood pressure is usually very low, stopping the flow.
- Strenuous physical activity.

Haemorrhoids involve much suffering and agony. The condition presents many hardships to persons afflicted by it, primarily preventing them from properly conducting their daily routines (especially during severe and acute onslaught of haemorrhoids). In such an unbearable situation, there is an urgent need to treat your haemorrhoids outright with a highly potent ointment, which can efficiently bring immediate relief from pain and pressure that has been created in the rectal area, while at the same time, calming and soothing the associated aggravating symptoms, such as swelling, itching, burning, irritation, extreme sensitivity and severe discomfort, thereby helping you to return to your normal health quickly.

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Burning issues – what the pharmacist's assistant needs to know about **cystitis**

Sumari Davis
Amayeza Information Services, South Africa

Introduction

Urinary tract infections (UTIs) are one of the most common types of bacterial infections. They can affect any part of the urinary system, but usually starts in the lower urinary tract (the urethra and the bladder). Women are 30 times more likely to be affected than men. This article will discuss infections of the lower urinary tract, managing mild symptoms and identifying symptoms that indicate the need for referral to a doctor.

The urinary tract and urinary tract infections

The urinary tract is the group of organs in the body that handle urine and include the:

- kidneys (two bean-shaped organs that filter the blood to make urine),
- bladder (a balloon-shaped organ that stores the urine),
- ureters (two tubes that transport the urine from the kidneys to the bladder), and
- urethra (a tube that carries the urine from the bladder to the outside of the body).

UTIs occur when bacteria that normally live in the gastrointestinal tract get into the urethra and travel up into the bladder. If the infection stays in the bladder, it is called a bladder infection or simple cystitis. If the infection travels up into the kidneys, it is called a kidney infection or pyelonephritis. Because the urethra is shorter in females, it is easier for bacteria to enter the bladder and women are therefore more likely to be affected by UTIs than men.

Cystitis

Risk factors

E. coli is the cause of bacterial cystitis in 70–90% of patients. Certain conditions may increase the risk of UTIs and they include:

- Pregnancy
- Menopause (decreased levels of oestrogen cause thinning of the lining of the urethra and makes it easier for bacteria to enter and cause infection)
- Diabetes
- Physical abnormalities such as an enlarged prostate, narrow urethra or anything that blocks the flow of urine
- Kidney stones
- Surgery involving the urinary tract
- Having a urinary catheter
- Bowel incontinence
- Problems causing incomplete emptying of the bladder
- Advanced age
- Conditions that affect personal care habits, such as Alzheimer's disease and delirium

Symptoms

The symptoms of cystitis may include:

- Strong urge to urinate often, even right after the bladder has been emptied
- Pain or burning when urinating
- Cloudy, dark, or bloody urine that may have a strong odour
- Pressure or cramping in the lower abdomen or back
- Low-grade fever in some patients

Children may experience additional symptoms such as irritability, lack of appetite, tiredness, weakness, nausea, and vomiting.

Managing symptoms

Mild cystitis may be treated with over-the-counter (OTC) medicines for a short period (< 2 days). The following measures have been recommended to manage symptoms:

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Table I: Products available OTC to manage symptoms of cystitis

Product	Beneficial effects	Directions for use in adults	Precautions and warnings
Citro-Soda® Alkafizz®	Alkalinise the urine to reduce burning with urination	5–10 ml (4–8 g) dissolved in half a glass of water, 3–4 times daily	Contraindicated in renal failure, high blood pressure, heart disease and pregnancy
Pyridium®	Numbs the bladder and urethra to reduce burning pain	2 tablets three times a day	Do not take for longer than 2 days May change the colour of the urine to orange or red
Urispas®	Reduces urinary urgency and frequency	1 tablet (200 mg) three times a day	Take with food if stomach upset occurs

- Drink plenty of fluids (around half a glass every 30 minutes) and urinate as often as the need arises to flush out the bladder.
- Cranberries contain D-mannose that acts as a urinary antiseptic, and prevents bacteria from attaching to the lining of the urinary tract, making it easier to flush out bacteria. D-mannose can be taken either as cranberry juice or in powder or tablet form.
- Wiping from front to back after a bowel movement may reduce the introduction of bacteria into the urethra.
- Urination immediately after sexual intercourse to flush out most bacteria from the urethra.
- Avoid using perfumed soaps, bubble baths, bath oils, talc and vaginal deodorants as these can cause further irritation.

The following may help prevent or alleviate symptoms (Table I):

- Urinary alkalinisers are available OTC and can relieve the burning symptoms that patients experience when urinating, by making the urine more alkaline.
- Phenazopyridine (Pyridium®) numbs the bladder and urethra and can help reduce the burning pain associated with UTIs but should not be used for more than two days.
- Flavoxate relaxes the smooth muscle of the bladder and reduces bladder pain, the feeling of urgency as well as urinary frequency.
- Applying a hot water bottle or pad to the pelvic region and the back may help to relieve pain.
- Mild analgesics such as aspirin or paracetamol can ease the abdominal pain and discomfort associated with cystitis.

Pyelonephritis (kidney infection)

Infection that spreads to the kidneys can result in the following symptoms in addition to those seen in patients with cystitis:

- Chills and shaking or night sweats
- Fever
- Flushed, warm or reddened skin
- Pain in the side, back or groin

- Severe abdominal pain
- Fatigue and general ill feeling
- Nausea and vomiting
- Mental changes or confusion (often the only symptom in older patients)

All patients with symptoms of pyelonephritis or blood in the urine should be referred to a doctor. Cystitis is rare in men and can be an indication of a more serious condition. Thus, all male patients, children and pregnant women with cystitis should be referred to a doctor. Patients who do not respond to treatment within two days and those with recurrent cystitis should also be referred for further investigation.

Conclusion

Most cases of cystitis resolve spontaneously within a few days but can cause discomfort. Symptoms may be managed with OTC treatment, but if they do not improve within two days, patients should see a doctor for further assessment. The pharmacist's assistant can recommend some treatment options based on the patient's symptoms, but also need to be able to identify symptoms that require patient referral to a doctor.

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Iron deficiency in female endurance athletes

Roslynn van Schoor

Introduction

Iron is an essential micronutrient that performs multiple functions in the human body. If our diets do not contain sufficient iron, we may develop iron deficiency. A lack of iron can be damaging to health and is linked to poor exercise performance. Female endurance athletes are at a higher risk of developing iron deficiency than other athlete populations due to menstruation, the iron losses caused by exercise and the inadequate intake of iron-rich foods. Iron supplementation and dietary modification can help to prevent and treat iron deficiency in female endurance athletes.

Nutrition for endurance athletes

Endurance athletes need to sustain exercise for a long period of time (> 30 minutes). Long-distance running, cycling, and rowing are examples of endurance sports. To perform well and optimise recovery after exercise, athletes need to follow good dietary practices. A varied diet consisting of vegetables, fruits, whole grains, lean meat/meat replacements, low-fat dairy, legumes, and healthy fats is recommended. Endurance athletes need to consume more calories than the general population due to the high energy demands of training and competition. A large amount of these calories should come from carbohydrates, which are the body's preferred fuel source. Sufficient protein and fat intake are also essential. The micronutrient (vitamin and mineral) requirements of athletes do not differ significantly from the general population. However, deficiency of certain micronutrients, particularly iron, can negatively affect health and exercise performance.

Iron deficiency

Iron deficiency is the most prevalent nutrient deficiency in the world and occurs when the body's iron stores become depleted. Iron is a trace mineral, meaning the body requires it in very small amounts. Iron forms a major part of red blood cells, which transport oxygen around the body for energy metabolism. A lack of iron disrupts this process and prevents the body from functioning optimally. If left untreated, iron deficiency progresses to anaemia.

Symptoms of anaemia include fatigue, weakness, headache, and shortness of breath. Both iron deficiency and anaemia negatively affect exercise ability. Adolescent and young women need between 15 and 18 mg of iron per day, which is significantly higher than the daily requirement for males. This is primarily due to the iron lost through menstruation. Indeed, women with heavy menstrual periods are at increased risk of developing iron deficiency and anaemia. Active women are twice as likely to develop iron deficiency than non-active women for several reasons.

- Endurance activities temporarily increase the amount of hepcidin (a protein) in the blood. This prevents iron absorption.
- Impact sports such as running can cause blood cells to break (haemolysis), resulting in iron losses.
- Athletes also lose iron through inflammation, sweating, and bleeding through the urinary and gastrointestinal tract.
- Routine use of nonsteroidal anti-inflammatory medications also contributes to decreased iron levels.

Female endurance athletes need to consume enough iron in their diets to make up for these losses and prevent iron deficiency.

Iron in the diet

Female endurance athletes generally meet their nutrient requirements, except for iron. Iron is an essential nutrient, which means we can only acquire it through our diets. Consuming iron-rich foods can help prevent and treat iron deficiency. Good sources

of iron include meat, poultry, eggs, and legumes. Fortified grains, dried fruit, and dark green vegetables (e.g., spinach and broccoli) also contribute some iron. Even if we consume sufficient iron, our bodies cannot always absorb and use it. Iron in the diet comes in two different forms: haem and non-haem iron.

- Haem iron is found in animal products and is easily absorbed in the gut.
- Non-haem iron accounts for all the other forms of dietary iron and is not as well absorbed.

Our meal and food choices also affect how well iron is absorbed. Vitamin C, for example, enhances iron absorption. This may be why a glass of orange juice goes so well with your eggs in the morning. Other compounds inhibit iron absorption. These include phytates (found in seeds, nuts, and legumes), polyphenols (found in coffee and tea) and oxalates (found in vegetables like spinach). Nevertheless, eating a varied, nutrient-dense diet consisting of iron-rich foods will help prevent and treat iron deficiency.

Vegetarians and vegans

It can be challenging for athletes following restricted diets such as vegetarianism and veganism to meet their nutrient requirements, particularly for iron. This is because iron is not as readily absorbed from plant-based sources. Indeed, iron requirements for vegetarians are up to 80% higher than for non-vegetarians. It is advised that vegetarian/vegan athletes select good sources of iron (fortified cereals, legumes, and nuts) and include vitamin C rich foods in every meal. Cooking with cast-iron pots and pans is another way to increase dietary iron intake. If female endurance athletes cannot meet their iron requirements through dietary means, iron supplementation may be necessary.

Iron supplementation

Correcting iron deficiency through supplementation can improve overall health and exercise performance in female endurance athletes. Iron deficiency treatments include oral supplements (pills/syrups), injections and dietary modification. Athletes are advised to consult a healthcare professional to determine their iron status before taking iron supplements. Taking incorrect dosages or too much iron can result in iron overload, which has significant health consequences. Furthermore, iron supplements may cause some gastrointestinal side effects such as nausea and constipation. Athletes should therefore take supplements together with meals and avoid overdosing. There are numerous iron-containing

supplements available on the market (Table I). An appropriate product should assist female athletes in meeting their daily iron requirement (18 mg) while minimising side effects. Supplements containing vitamin C may assist with the absorption of iron from the product.

Table I: Available iron supplements

Product	Iron content per dose	% iron requirement*
Lifestyle Nutrition: Iron AAC	24 mg	133%
Biogen: Iron Plus	23.4 mg	130%
Chela-fer®	15 mg	83%
Blueiron™ fe	16.7 mg	93%
Ferrous Forte®	20 mg	111%
SiderAL forte	15 mg	83%
Ferovance™	24 mg	133%
Centrum® Multivitamin	10 mg	56%
activovite™ complete multivitamin and mineral	9 mg	50%

*18 mg/day for premenopausal women

Conclusion

Female endurance athletes have high energy and nutrient requirements and are prone to iron deficiency. Iron deficiency impairs health and exercise performance. If iron requirements cannot be met through dietary modification, supplementation may be necessary. Iron supplements have been shown to correct and prevent iron deficiency in female athletes. Athletes should be advised to consult a healthcare professional before taking iron supplements.

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Sore throat

Wilna Rabbets
Amayeza Information Services, South Africa

Introduction

Pharyngitis, which is commonly referred to as a sore throat, is inflammation of the back of the throat. It is often felt as pain and even irritation or scratchiness in the throat that usually worsens when the person tries to swallow. There are several other ailments such as tonsillitis and laryngitis that are also commonly referred to as having a sore throat.

A viral infection like a cold or influenza is the most common cause of a sore throat. These infections usually resolve on their own with only symptomatic treatment required. Bacterial infections, like Strep throat (streptococcal infection), on the other hand, often require antibiotic treatment to treat the infection, relieve symptoms and prevent complications. Other causes of a sore throat may include dry air, smoking, hay fever, acid reflux, and breathing heavily polluted air or chemical fumes.

Symptoms of a sore throat might include:

- Pain or scratchiness in the throat
- Pain that worsens with swallowing or talking
- Difficulty swallowing
- Sore, swollen glands in the neck or jaw
- Swollen, red tonsils
- White patches or spots on the tonsils
- A hoarse or muffled voice

Treatment

Home remedies may be helpful to relieve sore throat and are especially helpful as treatment in the case of viral infections (that should not be treated with antibiotics).

- Drink warm or cold fluids – the liquids may help clear the mucous membranes and soothe dry scratchy throats.
- Gargle with warm salt water – this helps to reduce the swelling

and inflammation. It may also help in loosening mucous that is causing irritation. Use a ¼ teaspoon of salt in a cup of warm water.

- Steam and humidify – moist warm air can soothe a sore throat and help to loosen phlegm. It will also be helpful in treating any associated symptoms such as congestion and coughing.
- Popsicles – they are similar to drinking cold liquids in helping to calm irritated and swollen throats.
- Honey – in warm water or herbal teas, coats the throat to reduce irritation

Other in-home treatments would be over-the-counter (OTC) remedies. These can be topical preparations as well as OTC pain medication such as paracetamol or a nonsteroidal anti-inflammatory drug (NSAID) such as ibuprofen or naproxen. The use of aspirin should be avoided in children under the age of 16 years, because of the possible association between aspirin usage and Reye's syndrome.

Topical preparations include the many available lozenges, throat sprays and gargles. These preparations can contain one or more of the following ingredients:

- Local anaesthetics that have a numbing effect and help to ease pain. The local anaesthetics included in mouth and throat products include dibucaine and benzocaine.
- Anti-inflammatory lozenges that contain, e.g. flurbiprofen – not recommended for children under the age of 12 years.
- Benzydamine has pain-relieving and anti-inflammatory activity.
- Menthol is sometimes included for its cooling and pain-relieving effect.
- Antiseptics and disinfectants.

When to seek medical attention

If any of the following symptoms are present with a sore throat, the patient should be referred to the doctor:

Table I: Products available for the treatment of a sore throat

	Product	Dosage
Lozenges	Andolex®-C Each lozenge contains 3 mg benzydamine hydrochloride, 1.3 mg cetylpyridinium chloride	* Dissolve 1 lozenge slowly in the mouth every 1–2 hours; max 12 lozenges/24 hours * <i>Not recommended for children under 6 years</i>
	Medi-Keel A® Each lozenge contains 12 mg benzocaine, 1.5 mg cetylpyridinium chloride	* Dissolve 1 lozenge slowly in the mouth every 2–3 hours as required * <i>Not recommended for children under 6 years</i>
	Strepsils® Intensive Each lozenge contains 8.75 mg flurbiprofen	* Dissolve 1 lozenge slowly in the mouth every 3–6 hours as required; max 5 lozenges/24 hours * <i>Not recommended for children under 12 years</i>
Oral rinse	Andolex®-C Each 15 ml contains 22.5 mg benzydamine hydrochloride, 18 mg chlorhexidine gluconate	* Gargle with 15 ml for at least 30 seconds at 1.5–3 hourly intervals as needed * <i>Children 6–12 years: use 5–15 ml as a gargle every 3 hours</i>
	Medi-Keel A® Each 15 ml contains 5 mg dibucaine hydrochloride, 30 mg benzocaine, 3.713 mg cetylpyridinium chloride	* Gargle with 15–30 ml every 3–4 hours as needed
	Oranix® Each 15 ml contains 22.5 mg benzydamine hydrochloride, 18 mg chlorhexidine gluconate	* Gargle with 15 ml for at least 30 seconds at 1.5–3 hourly intervals as needed * <i>Children 6–12 years: use 5–15 ml as a gargle every 3 hours</i>
Throat spray	Andolex®-C Each 15 ml contains 22.5 mg benzydamine hydrochloride, 18 mg chlorhexidine gluconate	* 5–10 sprays directly onto painful area and swallow gently; repeat 1.5–3 hourly as needed
	Oranix® Each 15 ml contains 22.5 mg benzydamine hydrochloride, 18 mg chlorhexidine gluconate	* 5–10 sprays directly onto painful area and swallow gently; repeat 1.5–3 hourly as needed * <i>Not for use in children under 6 years</i>
	Orochlor® Spray Solution Each 100 ml contains 266.625 mg benzocaine, 1.071425 ml chlorhexidine gluconate solution 20%	* 4–8 sprays every 4 hours with a max of 32 sprays a day * <i>Children 6–12 years: 2–4 sprays every 4 hours with max of 16 sprays a day</i>

- Breathing difficulty
- Skin rash
- Drooling because the patient cannot swallow
- Struggle to open the mouth
- Swelling of the tongue or neck
- Stiff neck
- Patient has an underlying chronic illness or is taking medication that may suppress the immune system

Conclusion

While a sore throat can make a patient feel under the weather, especially if accompanied by other cold and flu symptoms, it usually clears up within a week to 10 days with effective treatment, whether that is symptomatic or with antibiotics in bacterial throat infections. Patients may participate in their usual activities as soon as they feel well, while remembering to observe practical prevention measures such as handwashing and cough etiquette.

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Dry eyes

Yolanda Moroney

Introduction

Dry eye occurs commonly and may be a chronic problem, particularly in older adults. When one blinks, tears spread across the front surface of the eye. Tears reduce the risk of eye infection by providing lubrication and washing away foreign matter in the eye. Tears also keep the surface of the eyes smooth and clear and maintain the health of the front surface of the eye. Dry eyes can occur if the eye does not produce enough quality tears to lubricate and nourish the eye.

Symptoms

Symptoms usually affect both eyes and may include:

- Stinging, burning, or a scratchy sensation in the eyes
- Stringy mucous in or around the eyes
- Sensitivity to light
- Red eyes
- Feeling as though there is something in one's eyes
- Watery eyes
- Blurred vision

Causes

Dry eyes may be caused if there is inadequate tear production, or if the tears are of poor quality.

Inadequate tear production

Tears are produced by glands in and around the eyelids. Symptoms of dry eye can occur if the normal amount of tear production decreases or if tears evaporate too quickly from the eyes.

Poor quality of tears

Tears are made up of oil, water, and mucous (mucin). This combination keeps the surface of the eye lubricated, clear and smooth.

Deficiencies with any one of these three layers can cause dry eye symptoms to develop.

Risk factors for dry eye include:

- Advancing age
- Various medical conditions such as rheumatoid arthritis and diabetes
- The side-effects of certain medications, including antihistamines, blood pressure medication and antidepressants
- Environmental factors such as wind and dry climate
- Gender – women are more likely to develop dry eyes due to hormonal changes caused by pregnancy, menopause, or oral contraceptives
- Long-term use of contact lenses

Treatment

Over-the-counter (OTC) tear replacement agents are first-line treatment in the management of dry eye. These agents are available as drop, gel, and ointment formulations. There is a wide choice of products available, and patients may have to try several brands before finding one that is suitable.

Artificial tears are suitable for treating mild to moderate symptoms of dry eye. They lubricate dry eyes and help to maintain moisture on the outer surface of the eye. Artificial tears are available as **drop** formulations and may have to be applied several times a day.

Formulations are also available as **gels**, which may cause temporary blurred vision after application.

Should artificial tear drop formulations not prove helpful, lubricating **eye ointments** could be considered. These coat the eyes effectively and provide longer-lasting relief from dry eyes. They may, however, cloud vision and are best applied at night.

Preservatives may be added to eye drops in multidose bottles to discourage the growth of bacteria after opening. These preservative-containing eye drops may irritate the eyes and should not be used more than four times a day or for prolonged periods.

Preservative-free formulations are available in multidose dropper bottles or in single-use vials which should be discarded after use.

Table I: Examples of OTC products to relieve dry eye symptoms

Tear replacement agent	Example	Preservative	Formulation
Carboxymethylcellulose sodium	Cellufresh®	No	Unit dose vials
	Celluvisc®	No	Unit dose vials
	Refresh Tears®	Yes	Dropper bottle
	Refresh Liquigel®	Yes	Drops
Hydroxypropyl methylcellulose	Spersatear®	Yes	Drops
In combination with:			
Dextran-70	Tears Naturale® II	Yes	Drops
Dextran-70	Tears Naturale® Preservative free	No	Single-dose vials
Polyvinyl alcohol: in combination with povidone	Refresh®	No	Single-dose vials
Liquid lanolin, anhydrous	Duratears® Preservative free	No	Ointment
Hyaluronic acid (as sodium hyaluronate)	Artelac® Splash	No	Drops
In combination with polyethylene glycol 8 000	Artelac® Intense	Yes	Drops
Polyethylene glycol 400 in combination with:			
Propylene glycol, hydroxypropyl guar	Systane® Ultra	Yes	Drops
Propylene glycol, hydroxypropyl guar	Systane® Ultra UD	No	Unit dose vials
Propylene glycol, hydroxypropyl guar	Systane® Ultra Preservative Free (Pureflow® technology)*	No	Drops
Propylene Glycol in combination with:			
Hydroxypropyl guar, mineral oil	Systane® Balance	Yes	Drops
Hydroxypropyl guar, mineral oil	Systane® Complete	Yes	Drops
Remember It is always necessary to follow the instructions of the manufacturer or eye-care practitioner when applying medication for the relief of dry eye. People with dry eyes who do not respond to artificial tear replacements would best consult an eye practitioner to consider other options. Contact lens wearers should select products which are preservative-free and compatible with their lenses. *Pureflow® technology is a method of filtering the intake of air into a multidose dropper bottle through a fine membrane after the drop has been dispensed. This process isolates the eye drop solution from the environment and prevents bacteria from entering the bottle. The sterility of the eye drops is maintained, and the need for preservatives eliminated.			

These formulations are suitable for frequent use and are suitable for moderate to severe dry eyes.

Products for the treatment of dry eye symptoms may consist of one or a combination of tear replacement agents including: Carboxymethylcellulose, hydroxypropylmethylcellulose, polyvinyl alcohol, hyaluronic acid, polyethylene glycol, polypropylene, dextran-70, liquid paraffin, mineral oil, liquid lanolin, povidone, hydroxypropyl guar.

Self-help remedies

- Holding a warm, wet cloth over the eyes for five minutes.
- Massaging the eyelids with a mild soap, or baby shampoo. The soap should be applied to closed eyes with the fingertips, and gently massaged into the eyelids.
- Taking nutritional supplements such as omega-3 fatty acids.

Prevention

Blink regularly when reading or looking at a computer screen for a long time.

Direct fans, car heaters and hairdryers away from the eyes.

Reduce the drying effects of wind and sun by wearing sunglasses with wraparound frames when outdoors.

Maintain hydration by drinking plenty of water.

Remember that environments such as aeroplanes, deserts, and places at high altitudes may aggravate dry eye symptoms.

If conservative treatments have not relieved dry eyes and the eyes have been dry, red or painful for some length of time, the patient should be referred to a doctor.

Conclusion

Dry eye is a common condition which may occur if the eyes do not produce enough tears, or if the tears are of poor quality. There is a variety of OTC preparations available which are effective tear replacement agents and suitable for treating the symptoms of dry eye. Should these not prove helpful, an eye practitioner should be consulted.

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Coughs in the pharmacy

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Introduction

A cough is a necessary reflex that helps remove fluid, foreign substances, and mucus from the airways. A cough can be initiated both reflexively and voluntarily. There is no 'normal' pattern of coughing, nor any information on how often a healthy person should cough; so it's important to understand when a cough should be referred for appropriate medical attention.

A cough is one of the most common symptoms for which people seek medical advice in the community pharmacy. While an acute cough is often associated with a viral upper respiratory tract infection, such as a cold or flu, a cough can also be a presenting symptom of more than 100 conditions of the respiratory system.

When a patient presents with a cough in the pharmacy, it is important to obtain information on the characteristics of the cough, smoking history, occupational history, and medication history.

Types of coughs

An acute cough is defined as a cough that has persisted for less than three weeks. It is usually self-limiting and can be caused by viral infections, bacterial infections, or inhalation of a foreign substance.

A subacute cough may be defined as a cough that lasts between three and eight weeks. It is often caused by airway hyper-responsiveness following a respiratory tract infection, where a post-infectious cough persists. Sub-acute cough is also usually self-limiting, but it is important to monitor the improvement of the cough and identify red flag symptoms (Table I) that require referral to the doctor.

A cough lasting more than eight weeks is defined as chronic. It is most commonly caused by smoking, asthma, upper respiratory

Table I: Identifying red flags

High-risk patients should be identified and, if necessary, referred to the doctor, e.g. those with weakened immune systems because of cancer or chemotherapy and older patients presenting with new cough symptoms.

Red flag symptoms in both smokers and non-smokers that require referral include:

- Excessive production of phlegm
- Fever and sweats
- Considerable breathlessness
- Unexplained weight loss
- Coughing up blood or red phlegm
- Heartburn
- Localised chest pain
- Swollen glands
- If the cough quickly gets worse or the patient cannot stop coughing
- If the cough is persistent, e.g. lasts for more than three weeks

Other signs of serious illness in patients with cough include:

- Respiratory rate of more than 30 breaths a minute
- Heart rate of more than 130 beats per minute
- Systolic blood pressure less than 90 mmHg or diastolic blood pressure less than 60 mmHg
- Oxygen saturation less than 92%

cough syndrome, upper respiratory tract infection or gastro-oesophageal reflux disease (GORD).

Cough is a symptom of COVID-19. It can also be part of a post-COVID-19 syndrome (or long COVID-19). As part of long COVID-19, a cough can continue for weeks or months after COVID-19 infection.

Coughs have also traditionally been described as either dry/non-productive or chesty/productive. While classifying coughs as either dry or wet may be considered outdated, product selection in the pharmacy is often based on differentiating between a dry and a productive cough.

A **dry or non-productive cough** can be caused by asthma, environmental irritants, or medicines such as angiotensin-converting enzyme (ACE) inhibitors. Common signs include a lack of phlegm (mucus), and patients often describe the cough as 'tickly'.

A chesty, **wet or productive cough** is characterised by the production of phlegm. Common causes include upper airway cough

Table II: Selected single-ingredient cough remedies available OTC

	Composition	Example
Expectorants	Guaiphenesin	Benylin® Wet Cough Menthol Dilinct® Junior Syrup Lennon® Cough Mixture
Cough suppressants	Pholcodine	Pholtex® Forte Liquid Pholtex® Junior Syrup
	Dextromethorphan	Benylin® Dry Cough Dilinct® Dry Cough
Mucolytics	N-acetylcysteine	Amuco® 200 Mucatak®
	Carbocisteine	Mucosolv® Mucospect®
	Bromhexine	Bisolvon® Bronchette®

syndrome (previously referred to as post-nasal drip syndrome), GORD, chronic obstructive pulmonary disease and infection caused by bacteria or viruses. Common co-existing symptoms of an infectious cough include a fever, runny nose and malaise.

If red flags have been excluded and the patient requests treatment, several over-the-counter (OTC) cough remedies are available in the pharmacy. Although little evidence has been documented in clinical trials, the choice of cough remedy in community pharmacies usually depends on the type of cough (Table II). However, many of the cough remedies available OTC are currently recommended based on custom and traditional practice, which is not supported by clinical studies of sufficient quality to meet the standards of modern evidence-based medicine.

- Productive coughs may be treated with an expectorant such as guaiphenesin, ammonium chloride, sodium citrate, glyceryl guaiacolate, or ipecacuanha, which promotes coughing and brings up phlegm.
- Non-productive coughs may be treated with a cough suppressant. There are three main categories of cough suppressants: (i) demulcents such as honey, glycerine and lemon, (ii) centrally-acting opioid-like cough suppressants

such as codeine, pholcodine and dextromethorphan, and (iii) first-generation antihistamines such as diphenhydramine, promethazine, phenyltoloxamine and triprolidine.

- Mucolytics such as acetylcysteine, carbocisteine and bromhexine may be useful in selected cases with chronic, tenacious phlegm production. Adequate hydration is essential to help reduce the viscosity of the phlegm.

Note: Suppression of a productive cough may cause mucus retention and encourage the development of infection. There is also no logic in using combination cough remedies that contain expectorants (which promote coughing) and suppressants (which reduce coughing) because of their opposing actions.

Conclusion

Coughing is a protective reflex that occurs when the airway is irritated or obstructed. After eliminating red flags, the pharmacist's assistant may opt to recommend a suitable product for a patient presenting with an acute cough. It is important to remember that cough mixtures are not harmless and that cough mixtures should preferably not be used to treat young children with a cough as part of the common cold. Although there is a lack of scientific evidence to prove that cough mixtures are beneficial, many patients say that cough remedies do help, and many health professionals continue to recommend them.

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Caring for your skin when winter weather hits

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Introduction

The cold is coming and stepping between warm, heated areas indoors and cold, dry conditions outside can take a toll on the skin. Warm clothes with a rough texture, especially wool or flannel, can rub on the skin and aggravate symptoms. In addition to causing skin conditions such as dry lips and skin or cracked heels, winter weather can also cause other skin conditions such as eczema, psoriasis, and rosacea to flare up. This article will provide some guidance on prevention and treatment to relieve the dry, itchy symptoms often associated with these conditions.

Dry lips

The skin on the lips is thinner and more delicate than normal skin, does not contain oil glands and dries out ten times faster than other parts of the skin. The enzymes in saliva that help to digest food can be irritating to the lips and when patients lick their lips, this, together with the evaporation of the saliva, worsens dry lips. Counsel patients not to lick their lips and not to rub, brush or bite flaking or peeling lips. Use a non-irritating heavy ointment-based balm first thing in the morning, last thing at night and at least 6–8 times during the day. Advise patients to use a lip balm that contains sunscreen during the day to prevent the lips from getting sunburnt. It may be helpful to keep several tubes of lip balm in different places to allow easy access and application throughout the day. Be sure to take in sufficient amounts of liquids to stay hydrated. The use of humidifiers at home can also reduce the risk of dry lips.

It is important to treat dry, chapped lips as soon as possible to prevent secondary infection. Patients should see a doctor if their condition persists after 2–3 weeks of treatment to exclude

other possible conditions like cheilitis or cancers that may need pharmacological treatment.

Cracked heels

Dry skin can also result in painful cracked heels, especially in winter. Having calluses can complicate the problem and make walking painful and difficult. Cracked heels may be treated by applying petroleum jelly at night and covering the heels with cling wrap and a pair of socks before going to bed.

Winter itch

Winter itch occurs when the skin dries out so much that it becomes uncomfortable and itchy. It is seen more frequently in the elderly with dry skin. Itching usually presents in autumn and winter and clears up during the summer months. Clothes, especially wool and flannel clothing, can aggravate symptoms around the knees, inner thighs, and ankles. Symptoms are often worse at night or when changing clothes. Winter itch does not cause a rash, but the skin appears slightly dry. Scratching can irritate the skin and may result in torn and broken hair shafts and/or secondary infection of hair follicles due to constant scratching.

Taking a warm bath before going to sleep can relieve symptoms. Some patients find that adding a quarter cup of baking soda (sodium bicarbonate) to a full bath provides relief. Applying a moisturising cream directly after bathing and whenever the skin feels dry or itchy is also recommended. Capsaicin cream can be useful to relieve symptoms in localised areas with persistent itch. It is preferable to wear several layers of lightweight clothing such as silk, linen or muslin that can be added or removed when moving to colder or warmer areas. Winter itch can last for a few days or weeks and occasionally throughout winter and usually resolves after the winter months.

Cold urticaria

Some people experience an allergic reaction to cold weather or cold water and develop hives shortly after exposure that resolves within

a couple of hours. Antihistamine creams can help, but it is best to avoid exposure to prevent hives.

Chilblains

Repeated exposure to the cold can result in inflammation of the small blood vessels that can cause burning, itching, red patches, swelling and blistering on the hands and feet. These can be prevented by preventing exposure to the cold and applying moisturisers to ease and resolve symptoms. They usually resolve within one to three weeks but can also become infected if not treated in time.

Eczema

Dermatitis and eczema are both associated with dry, scaly, red skin that itches and burns and can easily be exacerbated by the drying effects of winter weather. Areas commonly affected include the back of the neck, elbow creases and the backs of the knees. Sweating and overheating can also trigger itching and scratching, emphasising the need to wear several layers of clothes that can be removed when necessary to prevent overheating.

Raynaud's disease

When patients with Raynaud's disease are exposed to the cold, blood vessels in the extremities (e. g. fingers and toes) constrict, resulting in circulation problems. The affected areas become extremely pale, and if exposure continues for too long, the areas can turn a deep purple colour due to the lack of oxygen. When the areas finally warm up, it becomes red, swollen, and tingly. These patients need to wear sufficient warm protective clothing such as gloves, thick socks, and insulated shoes if they are going to be outside for long periods of time.

Psoriasis

Psoriasis is a condition that occurs when the skin produces too many skin cells. This results in dry, flaky, scaly patches on the skin that start as a collection of small red bumps on the skin. Psoriasis most commonly occurs on the scalp, elbows, knees, hands, and feet. Dry air, cold weather and lack of sunlight can make this condition worse. Short, lukewarm showers followed by applying moisturisers and products containing vitamin A, vitamin D, coal tar and cortisone can help alleviate symptoms.

Rosacea

Rosacea is a bacterial infection that causes flushing and reddening of the face, and patients often look and feel as though they are blushing. Some patients can also develop bumps and pustules or dry eyes and eyelids along with the redness. Extreme weather, including cold weather, can exacerbate these symptoms.

General recommendations to alleviate dry skin

The following tips can assist in alleviating dry skin:

- Ensure sufficient intake of fluids to keep hydrated.
- Heating can dry out the air and should be used sparingly – this can also be counteracted by using a humidifier.
- Taking short, lukewarm showers is preferable to a long hot bath or shower.

- Avoid harsh soaps that contain alcohol, parabens, synthetic dyes, or fragrances and rather use non-foaming cleansers and body washes that contain nourishing oils.
- Apply fragrance-free moisturisers or creams directly after a bath or shower (to lock in moisture) and frequently throughout the day as necessary. Choosing a moisturiser containing urea (Table I), dimethicone, glycerine, lanolin or mineral oil can benefit dry skin.
- Coconut oil compounds, safflower oil, avocado oils or mineral oil (baby oil) are ideal for soothing and nourishing dry, irritated, or damaged skin.

Table I: Some examples of urea containing products available in South Africa

Product	Urea concentration
Eucerin® UreaRepair Plus	5%
Eulactol® heel balm	25%
Nutraplus®	10%
Epizone® Plus	10%

Conclusion

Harsh and cold conditions can dry the skin during winter and exacerbate several skin conditions. Avoiding prolonged exposure and wearing warm protective clothing when outside can reduce the risks. Keeping the skin hydrated and frequently applying moisturisers can alleviate the symptoms associated with dry, irritated skin. Patients should contact a doctor if any of the symptoms do not resolve or get worse despite treatment at home.

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Key facts about probiotics and antibiotics

Haley Smith

Introduction

A diverse community of microorganisms (including bacteria, viruses, and fungi) live within our gastrointestinal tract and make up what is collectively called the gut microbiome. They are responsible for vital immune, metabolic, and nutritional functions and work together to keep the body healthy and prevent disease. For example, some bacteria help produce vitamins, digest food or destroy disease-causing cells. Everyone's microbiome is unique. No two people have the same microbial cells, even twins are different. Many gastrointestinal disorders have been associated with alterations in the gut microbiome. The role of bacteria in the human body has been studied extensively and identified as a means to improve health and prevent disease by balancing the gut microbiome using living microbial adjuncts, known as probiotics.

Probiotics

The use of probiotics has become increasingly popular in recent years. However, evidence for their efficacy is varied. Probiotics are naturally present in fermented foods, may be added to other food products and are available as dietary supplements. Studies of selected probiotic species (given alone or in combination) have suggested efficacy in several gastrointestinal illnesses. Therapeutic benefit has also been suggested for other disorders, including antibiotic-associated diarrhoea (AAD).

The role of probiotics

Probiotics are live microorganisms that are intended to have beneficial health properties for the host when administered in adequate amounts. Probiotics are used to restore microbial balance,

and for them to be effective, they must have certain characteristics, such as being able to withstand passage through the gastrointestinal tract (survive stomach acid and bile degradation), attach and adhere to the intestinal epithelium, colonise and reproduce in the gut, and stabilise the balance of the gut microbiome.

Probiotics are what many people call good bacteria or friendly bacteria. They are bacteria that live in the body and help it improve or normalise the microbial balance. Often, probiotics help defend the body from infections caused by unfriendly bacteria or other germs. The core benefit of probiotics is exercised by contributing to maintaining a balanced microbiome and, therefore, creating a favourable gut environment. Furthermore, probiotics support the health of the digestive tract and the immune system. Different types of probiotics have different effects. Since the effects of probiotics can be specific to certain probiotic species and strains, recommendations for their use in the clinic or in research studies need to be species- and strain-specific.

The most common types of probiotic bacteria

Probiotics may contain a variety of microorganisms. Though there are many types of bacteria that may be considered probiotics, there are two specific types of bacteria that are common probiotics available commercially. These include:

- *Lactobacillus*
- *Bifidobacterium*

Probiotics are also made up of good yeast. The most common type of yeast found in probiotics is:

- *Saccharomyces boulardii*

Mechanism of action

Probiotics may transiently colonise the human gut mucosa in highly individualised patterns, depending on the probiotic strain, baseline microbiota and gastrointestinal tract region. Although the exact way in which probiotics may be beneficial to humans is

Table I: Examples of probiotic/prebiotic products

Trade name	Ingredients
Combiforte®	Each capsule contains 1 billion viable cells of: <i>Bifidobacterium longum</i> <i>Bifidobacterium bifidum</i> <i>Lactobacillus acidophilus</i> Prebiotic: fructo-oligosaccharide
DualBalance™	Each sachet yields not less than 21 billion viable cells of: <i>Lactobacillus acidophilus</i> <i>Lactobacillus rhamnosus</i> <i>Bifidobacterium bifidum</i> <i>Bifidobacterium lactis</i> Prebiotic: fructo-oligosaccharide plus electrolytes
entiro™	Each capsule or chewable tablet and FastMelt sachet contains a minimum of 100 million colony-forming units (CFUs) of: <i>Enterococcus mundtii</i> <i>Lactobacillus plantarum</i>
Inteflora®	Each capsule contains: <i>Saccharomyces boulardii</i> 250 mg
Kiddie-forte™	Each chewable tablet contains in total 1 billion viable cells of: <i>Bifidobacterium longum</i> <i>Bifidobacterium bifidum</i> <i>Lactobacillus acidophilus</i> Prebiotic: fructo-oligosaccharide
Probiflora™ Adult Classic Bowel Support	Each capsule contains 5 billion CFUs of: <i>Lactobacillus acidophilus</i> <i>Lactobacillus casei</i> <i>Lactobacillus lactis</i> <i>Bifidobacterium lactis</i> Prebiotic: fructo-oligosaccharide fibre
Probiflora™ Adult Everyday Flora Balance	Each capsule contains 1 billion CFUs of: <i>Lactobacillus rhamnosus</i> <i>Bifidobacterium longum</i> Prebiotic: fructo-oligosaccharide fibre (Actilight™)
Probiflora™ Junior Everyday Flora Balance	Each chewable tablet contains 1 billion CFUs of: <i>Lactobacillus helveticus</i> <i>Lactobacillus rhamnosus</i> <i>Bifidobacterium longum</i>
Probiflora™ Rx Intestinal Flora Care	Each capsule contains 1 billion CFUs of: <i>Lactobacillus rhamnosus</i> <i>Bifidobacterium longum</i> Prebiotic: fructo-oligosaccharide fibre (Actilight™)
Reuterina™ daily	Each chewable tablet contains 1 x 10 ⁸ CFUs of live <i>Lactobacillus reuteri</i>

incompletely understood, there are many proposed mechanisms by which probiotics may enhance intestinal health. The following general benefits of probiotics have been described and include the following mechanisms:

- Competing with harmful microbes in the gut for nutrients, thereby preventing growth or invasion by pathogenic bacteria in the gastrointestinal tract.
- Help support the cells that line the gut to prevent harmful bacteria that may have been consumed (through food or drinks) from entering the blood.
- Improvement of intestinal barrier function.
- Stimulation of the immune system.
- Help the body maintain a healthy community of microorganisms or help the body's community of microorganisms return to a healthy condition after being disturbed.

Safety aspects of probiotics

Probiotics have an extensive history of being well-tolerated, particularly in healthy people. While probiotics are widely used in healthy individuals, there are potential risks when used by severely ill and immunocompromised patients.

Table II: Safety aspects of probiotics

Probiotics are measured in colony-forming units (CFUs), which indicate the number of viable cells. Amounts may be written on product labels as, for example, 1 x 10⁹ for 1 billion CFUs or 1 x 10¹⁰ for 10 billion CFUs. Many probiotic supplements contain 1 to 10 billion CFUs per dose, but some products contain up to 50 billion CFUs or more. However, higher CFUs counts do not necessarily improve the product's health effects.

Probiotics must remain viable for the entire shelf-life of the product and not have any pathogenic properties. Because probiotics must be consumed alive to have health benefits, and they can die during their shelf life, users should look for products labelled with the number of CFUs at the end of the product's shelf life, not at the time of manufacture.

Probiotics need to withstand acid and bile to reach the colon, where colonisation can occur.

Several probiotic strains are fragile and need to be protected from light, oxygen, heat and humidity.

Most commercial probiotics consist of a blend of strains with efficacy generally attributed to specific strains and their quantity. However, some probiotic products have been reported to contain microorganisms other than those listed on the label. In some instances, these contaminants may pose health risks.

The risk of harmful effects from probiotics is more significant in people with severe illnesses or with compromised immune systems. When probiotics are being considered for high-risk individuals, such as seriously ill hospitalised patients or premature infants, the potential risks of probiotics should be carefully weighed against their benefits. Possible harmful effects of probiotics may include the production of harmful substances, increased risk of infections and transfer of antibiotic resistance genes from probiotic microorganisms to other microorganisms in the digestive tract.

Antibiotic-associated diarrhoea

Antibiotic medications are often needed to fight an infection. However, while antibiotics are killing the bad bacteria, they are also knocking out the good bacteria in the body. Antibiotic-associated diarrhoea (AAD) is a side effect frequently associated with the use of broad-spectrum antibiotics. AAD occurs in 5–39% of patients, from the beginning and up to two months after the end of treatment. The symptoms range from mild and self-limiting to severe diarrhoea. AAD occurs when the antibiotic disrupts the ecology of the intestinal microbiome by altering the diversity and numbers of bacteria in the gut and causing the excessive growth of normally harmless bacteria.

The positive effect of probiotics on gut health in various conditions, including AAD, has been evaluated by a number of clinical trials. Specific probiotic bacteria such as *B. longum* and *Lactobacillus rhamnosus* GG and the yeast *Saccharomyces boulardii* have been found to have beneficial effects on the prevention and/or incidence of AAD. Research has shown a positive connection between taking probiotics after an antibiotic and relief from diarrhoea. The thought behind adding probiotics back into the body after taking an antibiotic is that it can repopulate the good bacteria that were destroyed by the antibiotics. The probiotic may help repopulate the gut microbiome and fight off any remaining bad bacteria.

Conclusion

Research has identified that a balanced gut microbiome is key to gastrointestinal health, the immune system and other health aspects. Probiotics offer a dietary means to support and maintain the gut microbiome. Probiotics have an extensive history of safe use, particularly in healthy people. Not all foods and dietary supplements labelled as probiotics on the market have proven health benefits. It is important to note that a probiotic's effect is strain-specific, and generalisation about the potential health benefits cannot be assumed across all strains. Each probiotic strain needs to be assessed on its own in controlled studies before specific claims are made.

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Importance of vaccines

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Introduction

Vaccines are regarded as one of the greatest advances in medical history. They are one of the most effective methods in preventing serious illness, disability, hospitalisation and death in people of all ages. For example:

- Authorised coronavirus disease (COVID-19) vaccines have been shown to be protective against severe disease, hospitalisation and death.
- According to the World Health Organization (WHO), immunisation currently prevents 2–3 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles.
- The measles vaccine has prevented 25.5 million deaths since 2000.

Immunisation also reduces the cost of treatment and lost productivity from seasonal diseases such as influenza.

Vaccines for personal protection

Vaccines work by training the immune system to recognise and fight microorganisms such as viruses or bacteria before a person encounters the virus/bacterium. Vaccines mimic initial infection, and the immune system creates antibodies in response. Antibodies are proteins that help to fight the disease. When a vaccinated person is later exposed to the same microorganism, their immune system is able to recognise the microorganism and rapidly produces the antibodies required to destroy the microorganism.

Sometimes a vaccinated person can get the infection, but in this case, illness is usually milder than it would have been if they had not been vaccinated. For example, although the ability of COVID-19 vaccines to prevent infection decreases with time, vaccination still reduces the risk of hospitalisation and death in vaccinated people who become infected with COVID-19.

Some vaccines also protect against infection-related cancers caused by viruses, for example:

- Human papillomavirus (HPV) vaccines protect against infection with certain types of HPV, which are commonly associated with HPV-related cancers (i.e. precancerous conditions and cervical cancer).
- Hepatitis B vaccines protect against hepatitis B virus (HBV) infections and HBV-related liver cancers.

Fighting antimicrobial resistance

Vaccines are considered a key strategy in fighting antimicrobial resistance. Vaccines play a role in preventing vaccine-preventable infections that would otherwise be treated with antibiotics, i.e. vaccination reduces the need for antibiotics which, in turn, reduces the risk of antibiotic resistance.

Herd immunity

Besides providing personal protection, vaccination also prevents the spread of diseases and protects vulnerable people in the community. Entire communities can rapidly become infected if a disease is easily spread from one person to another.

The more people that are vaccinated in the community, the more difficult it becomes for the disease to spread in the community. This is referred to as herd immunity. However, to achieve herd immunity, enough people must be vaccinated. For example, measles is a highly contagious disease, and 95% vaccine coverage is needed to protect communities against measles outbreaks.

Herd immunity is especially important for vulnerable people who cannot receive certain vaccines; for example, infants, people receiving chemotherapy, people with impaired immune function, including those with human immunodeficiency virus (HIV) infection.

Preventing outbreaks and eradicating diseases

Not only do vaccines play an important role in the prevention and control of infectious disease outbreaks, but regular vaccination may also eventually result in the eradication of infectious diseases.

Smallpox was the first disease to be eradicated through intensive vaccination campaigns. The second human disease targeted for eradication through vaccination is polio.

Polio is a disease that once killed or paralysed thousands of children. Polio caused more than 350 000 cases of paralysis in 1988. Although there is no cure for polio, the disease can be prevented through vaccination. A global polio eradication initiative was launched in 1988, which included mass vaccination campaigns.

Tremendous progress has been made in polio eradication over the last decades. Polio vaccination has brought down polio cases by over 99% since 1988. In South Africa, the last case of wild poliovirus was in 1989.

Vaccine hesitancy

The incidence of measles has decreased significantly since the introduction of the measles vaccine. However, despite the availability of an effective and safe vaccine, several regions globally were hit with large measles outbreaks in 2018 due to low vaccine coverage.

Increasing levels of vaccine hesitancy have contributed to the resurgence of vaccine-preventable diseases, such as measles. Vaccine hesitancy is defined as the reluctance or refusal to vaccinate despite the availability of vaccines and has been identified by the WHO in 2019 as one of the ten threats to global health.

According to the WHO, measles elimination is greatly under threat, and several countries that had achieved, or were close to achieving elimination, have seen a resurgence of measles. Outbreaks of vaccine-preventable diseases primarily affect people who have not been vaccinated.

In a nutshell

- Immunisation is a fundamental component of primary health-care and has significantly reduced the number of deaths from infectious diseases.
- Vaccines play an important role in ensuring public health and are one of the main tools in controlling the COVID-19 pandemic.
- Immunisation results in fewer infections which, in turn, reduces the risk of transmitting diseases to close contacts and other people in the community.

- In some cases, protection following vaccination may be lifelong. In other cases, due to waning immunity, it may be necessary to give booster doses of the vaccine to maintain protection over time.
- Vaccine hesitancy threatens to reverse progress made in tackling vaccine preventable diseases.

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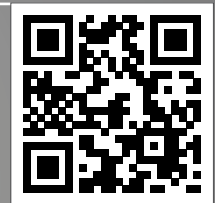


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