

# Health & Wellness

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A Special Supplement to

The Times-Gazette

## Health Education

What are biologic  
medicines?



## Solving the Puzzle

Myths and misconceptions  
about autism spectrum disorder

## Snore Relief

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Breathing easier about  
CPAP treatment





# Minimize dark circles under the eyes

be a byproduct of various circumstances. Getting to the root of the problem can help women (and men) look more awake and fresh.

## Accept genetics

Genetics may be the biggest culprit in undereye circles. Some people simply inherit fair or thin skin around the eyes. This can make blood that pools in these areas (from stretched or broken capillaries) more visible. While a person cannot change his or her skin tone, gently washing one's face — paying careful attention to the sensitive eye area — can help reduce damage. Also, getting more sleep can increase circulation to this area and prevent blood pooling.

## Treat allergies and sinus issues

According to Allergy & Asthma Care of New York, allergies and other sinus issues can cause puffiness and dark eye

circles. Histamines, which are released when an allergen is present, can cause blood vessels to swell and inflame. Getting tested for seasonal allergies can help people identify some possible triggers. Alleviating allergy symptoms can reduce the appearance of dark circles in some cases.

## Reduce swelling

Undereye bags can cause shadows to form and increase the appearance of dark circles. To remedy this, try to reduce fluid pooling in the face. Sleep elevated on a few pillows so that fluid flows away from the eyes. Reduce consumption of alcohol and salty foods, which can exacerbate fluid retention. Cool compresses can be used to massage fluid gently away from the eyes as well.

## Apply sunscreen

Dark circles may result from pigmentation changes that occur after exposure to

the sun or some other type of UV light. Individuals who apply sunscreen on their faces, including around their eyes, may be able to reduce or prevent pigment changes.

## Rely on concealer

Makeup can help counter the look of dark shadows and pigmentation around the eyes. Use a shade that is opposite the color of the circles to camouflage them. For example, use orange-yellow tones to combat blue-purple shading under the eyes. Makeup artists also advise applying concealer in the shape of a triangle. That way a person is creating a light arrow that draws attention to the bright part of her eyes. Undereye circles and swelling can be alleviated when people get to the source of the problem. A combination of treating the sources and masking the issue can help. In severe cases, individuals should visit their dermatologists.

**R**accoon eyes may be a side effect of forgetting to remove mascara and other eye makeup before retiring for bed. In such instances, dark eye circles are easily remedied with cleaning pads. For those whose dark circles can't be swept away with soap and water, dark, puffy eyes can be a cause for embarrassment or concern. Dark circles under the eyes may

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# What are biologic medicines?

A relatively recent wave of medications has provided significant advances in treating a wide range of illnesses, particularly those that are linked to auto-immune dysfunction or chronic ailments. Many people may be prescribed a biologic response modifier medicine at some point in their lives, and those who understand when and why such medications are prescribed may find such knowledge calms their nerves and reduces any confusion they might have about their conditions.

## What are biologic response modifiers?

Biologics are derived from animal products. First-generation biologic products included things like vaccines and blood components. However, a newer wave of biologic medicines has come to market over the last decade or so. These medications are manufactured through biotechnology and are complex proteins, sugars, nucleic acids, or a combination of these substances that are created from living cells. Cells may

include yeast, bacteria or a widely used cell called CHO, which originated from hamsters in China. The U.S. Food & Drug Administration says biologics are often at the forefront of biomedical research and are continually evolving.

## Why biologics are different

Unlike traditional medicines, which are largely made from chemical components that follow a strict recipe for manufacture, many biologics are complex mixtures that are not easily replicated. According to the resource Everyday Health, when biologics are made, a specific gene is isolated and inserted into the host cell's DNA, where it will become permanent. The cell follows the instructions of the gene and how it was programmed and becomes a specifically functioning cell. This one reprogrammed cell is combined with others that have been made the same way. The entire process of biologic manufacturing is complex, requiring state-of-the-art knowledge. It also requires entirely new biotechnology facilities and laboratories that employ top-notch



scientists. These factors combine to contribute to the generally high price tag of biologic medications.

## How biologics work

According to WebMD, biologics are designed to inhibit specific components of the immune system that may cause a symptom of a disease. For example, in the treatment of rheumatoid arthritis, the medication would suppress inflammation, which is a central feature of the disease. Biologics target specific parts of the immune system rather than broadly treating the body. Diseases that may be treated by biologics include rheumatoid arthritis, Crohn's disease, ulcerative

colitis, psoriasis/psoriatic arthritis, multiple sclerosis, and even certain cancers.

## Side effects of biologic medicines

Because most biologics are administered intravenously, injection-site irritation can be a common side effect. Biologics also carry a risk of infection. According to the Cochrane Database of Systematic Reviews, because biologics target the immune system, there is a risk for serious infection or disease. Biologic medicines continue to evolve and can be used to treat a variety of medical conditions for which no other treatments are available or effective.

# Myths and misconceptions about autism spectrum disorder

**A**utism spectrum disorder, or ASD, is a class of neurological conditions present from early childhood and is often identified through difficulty communicating, using language and understanding abstract concepts. The organization Autism Speaks says that an estimated one out of 42 boys and one in 189 girls are diagnosed with autism in the United States. Autism is now diagnosed in roughly one out of every 68 children in Canada, and has become the fastest growing and most commonly diagnosed neurological disorder in that country. ASD is estimated to affect tens of millions

of people worldwide. But even though ASD is widely recognized, studied and discussed, myths and misconceptions about the disorder continue to circulate. Shedding light on how ASD can help caregivers, peers and anyone who routinely interacts with individuals who fall on the spectrum.

ASD is not a single disorder. Although autism and ASD are often used interchangeably, these names do not define one specific disorder. ASD is now an umbrella term that includes autism, Asperger syndrome, pervasive



developmental disorder, childhood disintegrative disorder, and Rett syndrome, according to the Diagnostic and Statistical Manual of Mental Disorder, 5th edition (DSM-5) revised in 2013. ASD is often perceived through communication deficits that can include misinterpreted or nonverbal interactions. Individuals also may have challenges in bonding/friendship development.

## People with ASD can understand and express emotion

Although communication troubles may be present, those with ASD can and do feel emotions. But they may not be able to express these emotions the same way as others do. Also, just because someone has ASD doesn't mean he or she is unable to understand the emotions of others. Rather, the person may need firm and direct indications of how another person is feeling to understand. Reading body language or tone of voice alone may be inadequate to someone with ASD. School-aged children can learn from this,

recognizing that someone with ASD may want to have friends and socialize, but he or she may not know how to facilitate these engagements.

## ASD does not produce carbon-copy symptoms

Characteristics of ASD can vary widely from person to person. One person's limitations may not be present in another.

## ASD is not just a children's disease

There is no cure for ASD, and symptoms may not be reversible, which means that autism is a lifelong condition. Children who are diagnosed will grow into young people and adults with autism. Many treatments and therapies are geared toward early intervention, but adults can benefit from continued work as well. Adults with ASD can be successful and live independent lives. Autism spectrum disorder is more prevalent than ever. However, despite the recognition of ASD, many people do not understand the nuances involved with a diagnosis.



# Breathing easier about CPAP treatment

People who routinely toss, turn, snore, and wake up feeling less than refreshed in the morning may have more to worry about than simply not getting a good's night sleep. They may be experiencing a relatively common yet largely undiagnosed condition that can contribute to long-term risk for various diseases. Sleep disorders have become a significant health issue. Sleep apnea, which affects an estimated 22 million people in the United States, can contribute to difficulty sleeping. Sleep apnea causes periods defined by an inability to breathe. The American Sleep Apnea Association says sleep apnea comes in three types: obstructive, wherein a blockage of the airway is usually caused by the collapse of the tongue or soft palate; central, when the brain fails to signal muscles to breathe;

and complex, which is a combination of the two conditions.

Over time, sleep apnea can be a risk factor for heart attack, stroke, diabetes, and other serious conditions, says the Cleveland Clinic. That is why symptoms that may begin as mildly agitating snoring sessions should be brought to a doctor's attention. When sleep apnea is identified, one of the more successful treatments is widely referred to as "CPAP." According to the National Heart, Lung and Blood Institute, CPAP, or continuous positive airway pressure, is a treatment that uses mild air pressure to keep breathing airways open. A CPAP machine includes a mask or other device that fits over the nose or nose and mouth. The mask is connected to a machine via a tube, through which humidified air is



blown. In cases of obstructive sleep apnea, or OSA, CPAP can reverse the complete blockages or narrowing of upper airways. When used correctly, CPAP may be the only treatment necessary to address OSA. Sleep apnea is usually confirmed by an overnight sleep study known as a polysomnogram, or PSG, conducted in a lab or at home. According to the American Sleep Apnea Society, a PSG is often followed by with a CPAP titration study. Individuals who will require CPAP can choose among masks and equipment that meet the prescription

and maximize comfort levels. Many people become accustomed to using CPAP devices right away, while others may need a month or more to transition. Problems like uncomfortable masks or air leakage can be tweaked until users grow comfortable. CPAP needs to be employed under the guidance of a sleep specialist. The mask and tube should be cleaned daily and be replaced when necessary for the treatment to work effectively. More information about sleep apnea and CPAP is available at [www.amsleep.org](http://www.amsleep.org).

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## Personalized medicine may be the future of healthcare

When a person feels ill, his or her doctor may assess any symptoms and then prescribe a particular medication to treat or alleviate those symptoms. Doctors prescribe medications hoping to treat sickness, but sometimes prescriptions fall short, leaving some to wonder if prescription medications could be customized more for individual needs? The science is already here.

Making specialized drugs is not a new concept. Prior to the rise of drug manufacturing companies, early pharmacists routinely customized ingredients. According to Professional Compounding Centers of America, customized medications are created through a process known as pharmacy compounding, which is defined as the art and science of preparing personalized medications for patients.

Specialized pharmacists take a practitioner's prescription and mix individual ingredients together in the exact dosage and strength required. Compounding may be done to change the form of the medication from a pill to a liquid or to remove a certain additive or ingredient, such as gluten, that might cause an allergic reaction. The American Pharmacists Association says that compounding also can be used to flavor a medication

in an effort to make it more palatable. Compounded drugs can be just as safe as mass-produced prescriptions. And thanks to their tailor-made formulas, compounded medications also may help people avoid side effects and other adverse reactions. Compounding gives physicians flexibility in regard to how to best help their patients. Compounding is done in hospital pharmacies and other healthcare facilities. There also are thousands of community-based pharmacies in the United States that specialize in compounding services. Pharmacists in these facilities spend all of their time making special preparations. All pharmacists and pharmacies engaged in compounding are subject to oversight by both federal and state authorities. On November 27, 2013, Congress amended the Federal Food, Drug, and Cosmetic Act by enacting the Drug Quality and Security Act to ensure that compounded drugs are produced in accordance with applicable federal requirements. The National Association of Pharmacy Regulatory Authorities helps to oversee compounding in Canada. Preparations of products are subject to the Food and Drug Act and Regulations, Good Manufacturing Practice guidelines, and inspection by Health Canada.

Pharmaceutical compounding may not be new, but it is increasingly relied on to create the best formulations for individual patients.

## Did you know?



Individuals visit the doctor for many different reasons. Although serious illnesses or acute medical care may be seen as the primary reasons behind doctor visits, a relatively recent study from The Mayo Clinic suggests otherwise. In 2013, data published in the journal *Mayo Clinic Proceedings* uncovered that most people visit the doctor

for skin disorders, such as acne or dermatitis. In the United States, 42.7 percent of the doctor visits studied were for skin ailments. Skin ailments were followed by joint disorders, back problems, cholesterol, and upper respiratory conditions. The group BackCareCanada says 80 percent of individuals experience pain in their spine at some point in their lives, and medical expenditures with respect to lower back pain are estimated at between \$6 and 12 billion annually in Canada.

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# How common is **carpal tunnel?**

Increased hours spent on computer keyboards and digital devices can put people at risk for a relatively common and oftentimes painful condition that affects mobility in the wrist. Carpal tunnel syndrome, or CTS, can cause numbness, pain and tingling in the hand or arm as a result of one of the major nerves of the hand — the median nerve — being compressed in the wrist. The American College of Rheumatology says that CTS may be the most common nerve disorder experienced today, affecting between four and 10 million people in the United States alone. Middle-aged to older individuals are more likely to develop CTS than younger persons, and females are diagnosed three times more frequently than males.

## What is the carpal tunnel?

The carpal tunnel is a passage that forms in the wrist on the palm side of the hand. It is located just beneath the skin surface. The National Institute of Neurological Disorders and Stroke says the carpal tunnel is a narrow, rigid passageway of ligament and bones. Eight small wrist bones form three sides of the tunnel. The width of the tunnel is only about an inch. Injury or inflammation to the tissues

inside of the carpal tunnel can shrink the space of the tunnel, eventually pressing on the tendons and the median nerve that runs through this narrow area.

## The role of the median nerve

When compression occurs in this area of the wrist, a key nerve is affected. The median nerve originates in the neck and runs through the arm. The median nerve passes through the carpal tunnel at the wrist and goes into the hand, providing feeling to the palm side of the thumb and to the index, middle and part of the ring fingers (although not the little finger). It also controls some small muscles at the base of the thumb.

## Symptoms of carpal tunnel

Weakness of the hand as well as tingling and numbness are the two most common symptoms of CTS. The numbness particularly affects four of the fingers. It can occur when holding a phone, book, newspaper or steering wheel or engaging in just about any activity that involves the hands. CTS also may wake a person up from sleep. There are a number of other compression issues that can occur in the

hand and arms, causing similar pain and tingling in other areas. Ulnar nerve compression in the elbow can cause part of the ring finger and pinky finger to tingle and may be indicative of a different ailment. That's why a professional diagnosis must be sought when experiencing symptoms related to CTS.

When to see a doctor If pain and tingling are affecting activities and sleeping patterns, individuals should see their doctors. Various nonsurgical remedies and therapies may help. If left untreated, any condition that affects nerve function may lead to permanent nerve and muscle damage.



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